

COLDMILLING BITUMINOUS PAVEMENT FOR REMOVAL OF SURFACING (3 IN. OR LESS)

STATION	LOCATION	SIDE	QUANTITY (SY)	REMARKS
214+41 TO 214+91	RTE 8	LT & RT	223	50' ROAD & SHOULDER PAVEMENT
217+73 TO 218+23	RTE 8	LT & RT	223	50' ROAD & SHOULDER PAVEMENT
TOTAL			446	
USE			446	

EARTHWORK

STATION	LOCATION	SIDE	CLASS A EXCAVATION (CY)	REMARKS
215+78	RTE 8	RT & LT	195	CUT FOR ROCK BLANKET
216+57	RTE 8	RT & LT	246	CUT FOR ROCK BLANKET
TOTAL			441	

4" BITUMINOUS PAVEMENT MIXTURE PG 64-22 (BASE)

STATION	LOCATION	SIDE	AREA (SF)	PMBB (TON)	REMARKS
212+91 TO 215+36	RTE 8	RT	1938.0	46.5	PHASE 1 SHOULDER CONSTRUCTION
217+52 TO 219+73	RTE 8	RT	1743.0	41.9	PHASE 1 SHOULDER CONSTRUCTION
212+91 TO 215+13	RTE 8	LT	1736.0	41.7	PHASE 2 SHOULDER CONSTRUCTION
217+29 TO 219+73	RTE 8	LT	1933.0	46.3	PHASE 2 SHOULDER CONSTRUCTION
TOTAL				176.4	
USE				176.4	

BASE = 1.943 TONS/CY

TYPE 1 AGGREGATE FOR BASE (4 IN. THICK)

STATION	LOCATION	SIDE	QUANTITY (SY)	REMARKS
212+91 TO 215+36	RTE 8	RT	215	SHOULDER BASE
217+52 TO 219+73	RTE 8	RT	194	SHOULDER BASE
212+91 TO 215+13	RTE 8	LT	193	SHOULDER BASE
217+29 TO 219+73	RTE 8	LT	215	SHOULDER BASE
TOTAL			817	

SUBGRADE COMPACTION (6-INCH DEPTH)

STATION	LOCATION	SIDE	QUANTITY (100 FT)	REMARKS
212+91 TO 215+36	RTE 8	RT	2.5	SHOULDER CONSTRUCTION
217+52 TO 219+73	RTE 8	RT	2.2	SHOULDER CONSTRUCTION
212+91 TO 215+13	RTE 8	LT	2.2	SHOULDER CONSTRUCTION
217+29 TO 219+73	RTE 8	LT	2.4	SHOULDER CONSTRUCTION
TOTAL			9.3	
TOTAL			10	

SUBGRADE SCARIFYING

STATION	LOCATION	SIDE	QUANTITY (100 FT)	REMARKS
212+91 TO 215+36	RTE 8	RT	2.5	SHOULDER CONSTRUCTION
217+52 TO 219+73	RTE 8	RT	2.2	SHOULDER CONSTRUCTION
212+91 TO 215+13	RTE 8	LT	2.2	SHOULDER CONSTRUCTION
217+29 TO 219+73	RTE 8	LT	2.4	SHOULDER CONSTRUCTION
TOTAL			9.3	
TOTAL			10	

RUMBLE STRIPS

STATION	LOCATION	SIDE	LENGTH (FT)	BITUMINOUS SHOULDER RUMBLE STRIP (STA)	BITUMINOUS CENTERLINE RUMBLE STRIP (STA)	REMARKS
210+56 TO 215+13	RTE 8	LT	457	4.6		
217+34 TO 222+08	RTE 8	LT	474	4.7		
210+56 TO 215+30	RTE 8	RT	474	4.7		
217+52 TO 222+08	RTE 8	RT	456	4.6		
210+56 TO 215+22	RTE 8	CL	466		4.7	
217+43 TO 222+08	RTE 8	CL	465		4.7	
TOTAL				18.6	9.4	
USE				18.6	9.4	



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED

06/03/2024

ROUTE 8 STATE MO

DISTRICT CD SHEET NO. 3

COUNTY WASHINGTON

JOB NO. J5P3522

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)

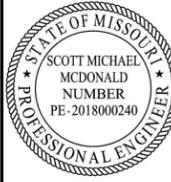


Kansas City, Missouri 64159
9788 N Ash Avenue
816-781-8182
816-781-0643 (FAX)
Certificate of Authority No. 2002006947

SIGN	SIZE	AREA	QTY	TOTAL	QTY	TOTAL	SIGN	
IN.	SQ. FT.	EACH	SQ. FT.	EACH	SQ. FT.	NUM.		
WARNING SIGNS								DESCRIPTION
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT)
WO1-4R	48X48	16.00	1	16.00	1	16.00	15	REVERSE CURVE (SYMBOL RIGHT)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
WO1-8	18X24	3.00						CHEVRON (SYMBOL)
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)
WO3-3	48X48	16.00	2	32.00			12	SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00						BE PREPARED TO STOP
WO3-5	48X48	16.00	2	32.00			3	SPEED LIMIT AHEAD
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00						MERGE (LEFT)
WO4-1aR	48X48	16.00						MERGE (RIGHT)
WO5-1	48X48	16.00						ROAD NARROWS
WO5-3	48X48	16.00						ONE LANE BRIDGE
WO5-5	48X48	16.00						NARROW LANES
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
WO8-1	48X48	16.00						BUMP
WO8-2	48X48	16.00						DIP
WO8-3	48X48	16.00						PAVEMENT ENDS
WO8-4	48X48	16.00						SOFT SHOULDER
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
WO8-6	48X48	16.00						TRUCK CROSSING
WO8-6c	48X48	16.00						TRUCK ENTRANCE
WO8-7	36X36	9.00						LOOSE GRAVEL
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL
WO8-9	48X48	16.00						LOW SHOULDER
WO8-11	48X48	16.00						UNEVEN LANES
WO8-12	48X48	16.00						NO CENTER LINE
WO8-15	48X48	16.00						GROOVED PAVEMENT
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
WO10-1	42RND.	9.62						RAILROAD CROSSING
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
WO12-2x	24X18	3.00						LOW CLEARANCE (PLAQUE)
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
WO12-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
WO12-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
WO13-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
WO16-2	30X24	5.00						XXX FEET (PLAQUE)
WO16-3	30X24	5.00						X MILE (PLAQUE)
WO20-1	48X48	16.00	2	32.00			2	BRIDGE WORK AHEAD
WO20-1	48X48	16.00	4	64.00	2	32.00	2A	ROAD WORK AHEAD
WO20-3	48X48	16.00						ROAD CLOSED AHEAD
WO20-4	48X48	16.00	2	32.00	4	64.00	7	ONE LANE ROAD AHEAD
WO20-5	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
WO20-6a	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00	2	32.00	2	32.00	8	FLAGGER (SYMBOL)
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00						SHOULDER WORK AHEAD
WO22-1	48X48	16.00						BLASTING ZONE AHEAD
WO22-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
WO22-3	42X36	10.50						END BLASTING ZONE
GO22-1	21X15	2.19	2	4.38			60	WET PAINT (ARROW PIVOTS)

SIGN	SIZE	AREA	QTY	TOTAL	QTY	TOTAL	SIGN	
IN.	SQ. FT.	EACH	SQ. FT.	EACH	SQ. FT.	NUM.		
GUIDE SIGNS								DESCRIPTION
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
GO20-1	60X24	10.00						ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00	2	16.00			26	END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00	2	12.00			54	WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00						END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT)
MO4-9R	48X36	12.00						DETOUR (RIGHT)
MO4-9P	48X12	4.00						STREET NAME (PLAQUE)
MO4-10L	48X18	6.00						DETOUR ARROW (LEFT)
MO4-10R	48X18	6.00						DETOUR ARROW (RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TR1	6.93						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R1-3P	30X12	2.50						ALL WAY (PLAQUE)
R2-1	36X48	12.00	2	24.00			4	SPEED LIMIT 45
R2-1	48X48	16.00	2	32.00			25	SPEED LIMIT 55 (NORMAL SPEED)
R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00	2	12.00			47	STOP HERE ON RED (45° ARROW)
R11-2	48X30	10.00						ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD
R11-4	60X30	12.50						LOCAL TRAFFIC ONLY
CONST-3A	60X48	20.00						ROAD CLOSED TO THRU TRAFFIC
CONST-3X	56X12	4.67						FINE SIGN
MISCELLANEOUS SIGNS								
CONST-5	60X8	3.33	2	6.70				POINT OF PRESENCE
CONST-5	96X48	32.00	2	64.00				POINT OF PRESENCE
CONST-7	48X24	8.00						RATE OUR WORK ZONE
CONST-7	72X36	18.00						RATE OUR WORK ZONE
CONST-8	48X36	12.00	2	24.00	2	24.00	70	WORK ZONE NO PHONE ZONE
SPECIAL	48X48	16.00	2	32.00			71	RUMBLE STRIPS AHEAD
616-10.05 CONSTRUCTION SIGNS								TOTAL 467
616-10.10 RELOCATED SIGNS								TOTAL 168

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012	2	IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020	4	REPLACEMENT SAND BARREL
6122030	2	IMPACT ATTENUATOR (RELOCATION)
6123001		TRUCK MOUNTED ATTENUATOR (TMA)
6161008	2	ADVANCED WARNING RAIL SYSTEM
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	39	CHANNELIZER (TRIM LINE)
6161030		TYPE III MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040		FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	2	CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6162000A	1	WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002	2	TEMPORARY LONG-TERM RUMBLE STRIPS
6173600D	450	TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A	450	RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 06/03/2024

ROUTE: 8 STATE: MO

DISTRICT: CD SHEET NO.: 3

COUNTY: WASHINGTON

JOB NO.: J5P3522

CONTRACT ID:

PROJECT NO.:

BRIDGE NO.:



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
06/03/2024

ROUTE 8 STATE MO
DISTRICT CD SHEET NO. 5

COUNTY
WASHINGTON

JOB NO.
J5P3522

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

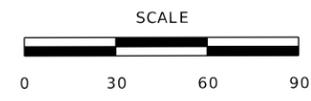
DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

VEENSTRA & KIMM INC

9788 N Ash Avenue
Kansas City, Missouri 64159
816-781-8182
816-781-0643 (FAX)
Certificate of Authority No. 2002006347



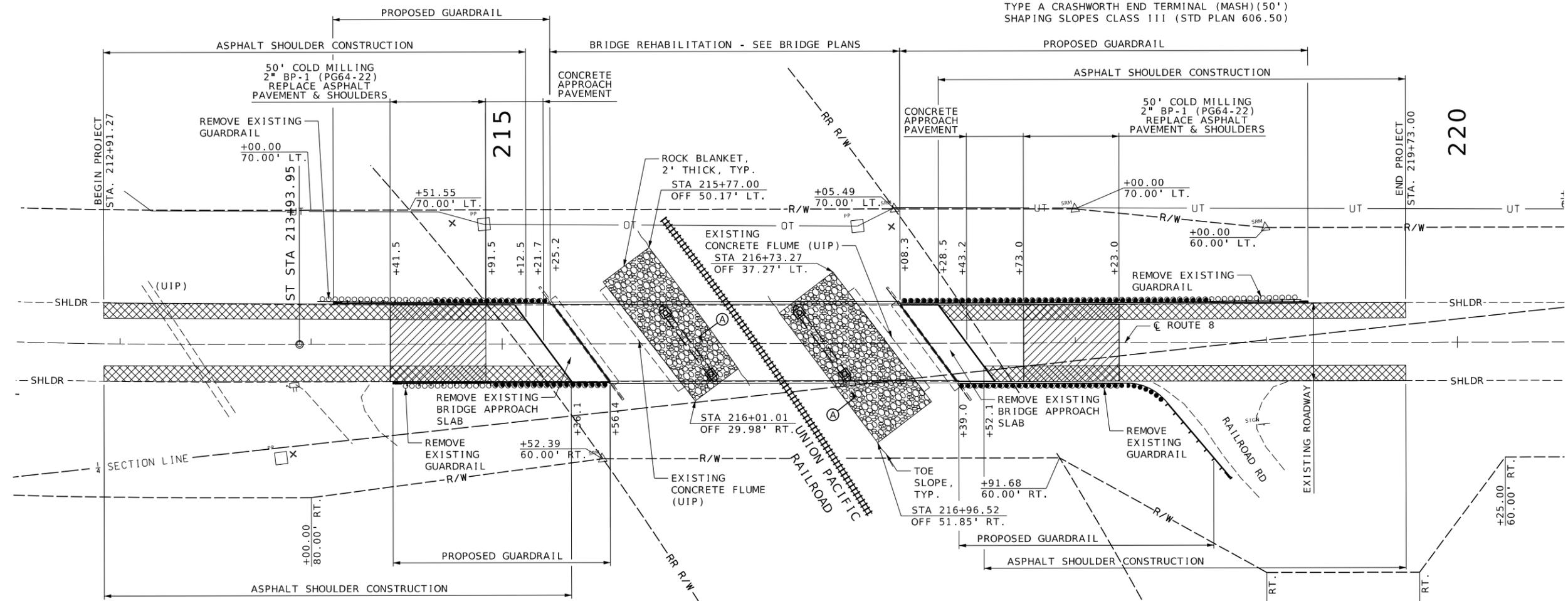
GUARDRAIL INSTALLATION:

MGS BRIDGE APPROACH TRANSITION SECTION (37.5')
2 SECTIONS OF MGS GUARDRAIL @ 12.5' (25')
TYPE A CRASHWORTH END TERMINAL (MASH)(50')
SHAPING SLOPES CLASS III (STD PLAN 606.50)

SW 1/4-SE 1/4
SEC 21-T37N-R3E

GUARDRAIL INSTALLATION:

MGS BRIDGE APPROACH TRANSITION SECTION (37.5')
10 SECTION OF MGS GUARDRAIL @ 12.5' (125')
TYPE A CRASHWORTH END TERMINAL (MASH)(50')
SHAPING SLOPES CLASS III (STD PLAN 606.50)



GUARDRAIL INSTALLATION:

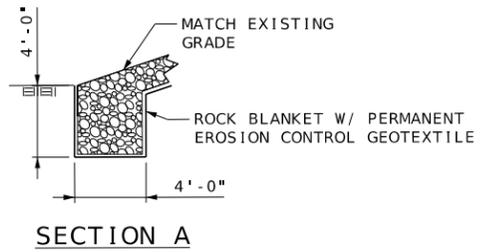
MGS BRIDGE APPROACH TRANSITION SECTION (37.5')
2 SECTIONS OF MGS GUARDRAIL @ 12.5' (25')
TYPE A CRASHWORTH END TERMINAL (MASH)(50')
SHAPING SLOPES CLASS III (STD. PLAN 606.50)

NW 1/4-SE 1/4
SEC 21-T37N-R3E

GUARDRAIL INSTALLATION:

MGS BRIDGE APPROACH TRANSITION SECTION (37.5')
6 SECTION OF MGS GUARDRAIL @ 12.5' (75')
TYPE A CRASHWORTH END TERMINAL (MASH)(50')
SHAPING SLOPES CLASS III (STD PLAN 606.50)

NOTES:
FOR CONCRETE APPROACH PAVEMENT DETAILS,
SEE STANDARD PLAN 504.00



SPECIAL SHEET
SHEET 1 OF 1

TRAFFIC CONTROL LEGEND

- PROPOSED SIGN (SINGLE SIDED)
- EXISTING SIGN (SINGLE SIDED)
- CHANNELIZER
- E TYPE III MOVEABLE BARRICADE
- ◻ SEQUENTIAL FLASHING WARNING LIGHT
- ▬ TEMPORARY CONCRETE TRAFFIC BARRIER (TYPE F)
- IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
- PORTABLE TRAFFIC SIGNAL AND LUMINARE
- ☒ VEHICLE WITH TRAILER MOUNTED ATTENUATOR
- ☒ CHANGEABLE MESSAGE BOARD
- ▽ FLAGGER
- ▲▲▲ 3-2-1 CONE PROCEDURE

LANE CLOSURE ON TWO-LANE HIGHWAYS USING TRAFFIC CONTROL SIGNALS

SPEED PERMANENT POSTED (MPH)	SIGN SPACING (FT.)		TAPER LENGTH (FT.)		RECOMMENDED BUFFER LENGTH (FT.) (B)	CHANNELIZER SPACING (FT.)	
	UNDIVIDED (S)	DIVIDED (S)	SHOULDER (1) (T1)	LANE (2) (T2)		TAPERS	BUFFER/ WORK AREAS
0-35	200	-	35	100	280	25	40
40-45	350	-	35	100	400	25	80
50-55	500	-	35	100	560	25	80
60-70	1000	-	35	100	840	25	120

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

NOTES:

ANY EXISTING WARNING OR REGULATORY SIGNS (NOT SHOWN) THAT INTERFERE WITH THE TRAFFIC CONTROL SIGNING SHALL BE REMOVED OR COMPLETELY COVERED.

ALL TRAFFIC CONTROL SIGNS ARE TO BE NON-PORTABLE UNLESS NOTED OTHERWISE.

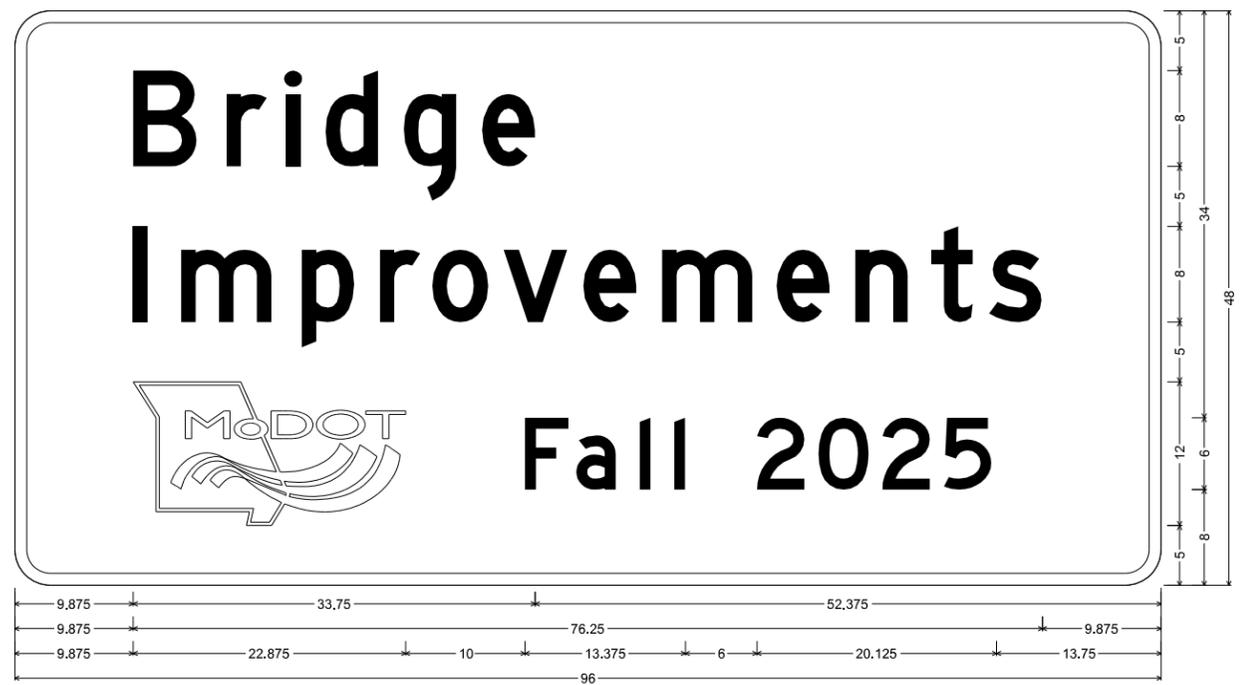
MODIFICATIONS TO EXISTING SIGN LEGENDS MAY INCLUDE REMOVAL, COVERING AND UNCOVERING OF LEGENDS. NO DIRECT PAY WILL BE MADE FOR THE LABOR OR MATERIALS REQUIRED TO MAKE THESE MODIFICATIONS.

ALL SPACING AND DISTANCES SHOWN ARE APPROXIMATE. DISTANCES MAY BE ADJUSTED BY THE ENGINEER TO ACCOMMODATE SPECIFIC FIELD CONDITIONS.

SEE STANDARD PLAN DRAWINGS 616.10, 903.02, AND 903.03 FOR ADDITIONAL DETAILS REGARDING TRAFFIC CONTROL AND HIGHWAY SIGNING.

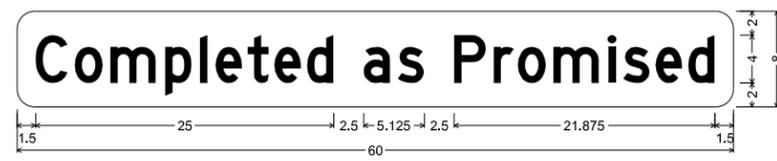
"POINT OF PRESENCE" SIGN 68 TO BE FURNISHED BY THE CONTRACTOR.

ALL RELOCATED TRAFFIC SIGNS ARE TO BE NON-PORTABLE UNLESS NOTED OTHERWISE. EXISTING POST(S) & MOUNTINGS MAY BE USED FOR TEMPORARY SIGN RELOCATIONS.



CONST-5-96 SH-FLAT SHEET:
3,000" Radius, 1,000" Border, White on, Blue:
"Bridge", D: "Improvements", D: "Fall 2024", D:
Table of letter and object lefts

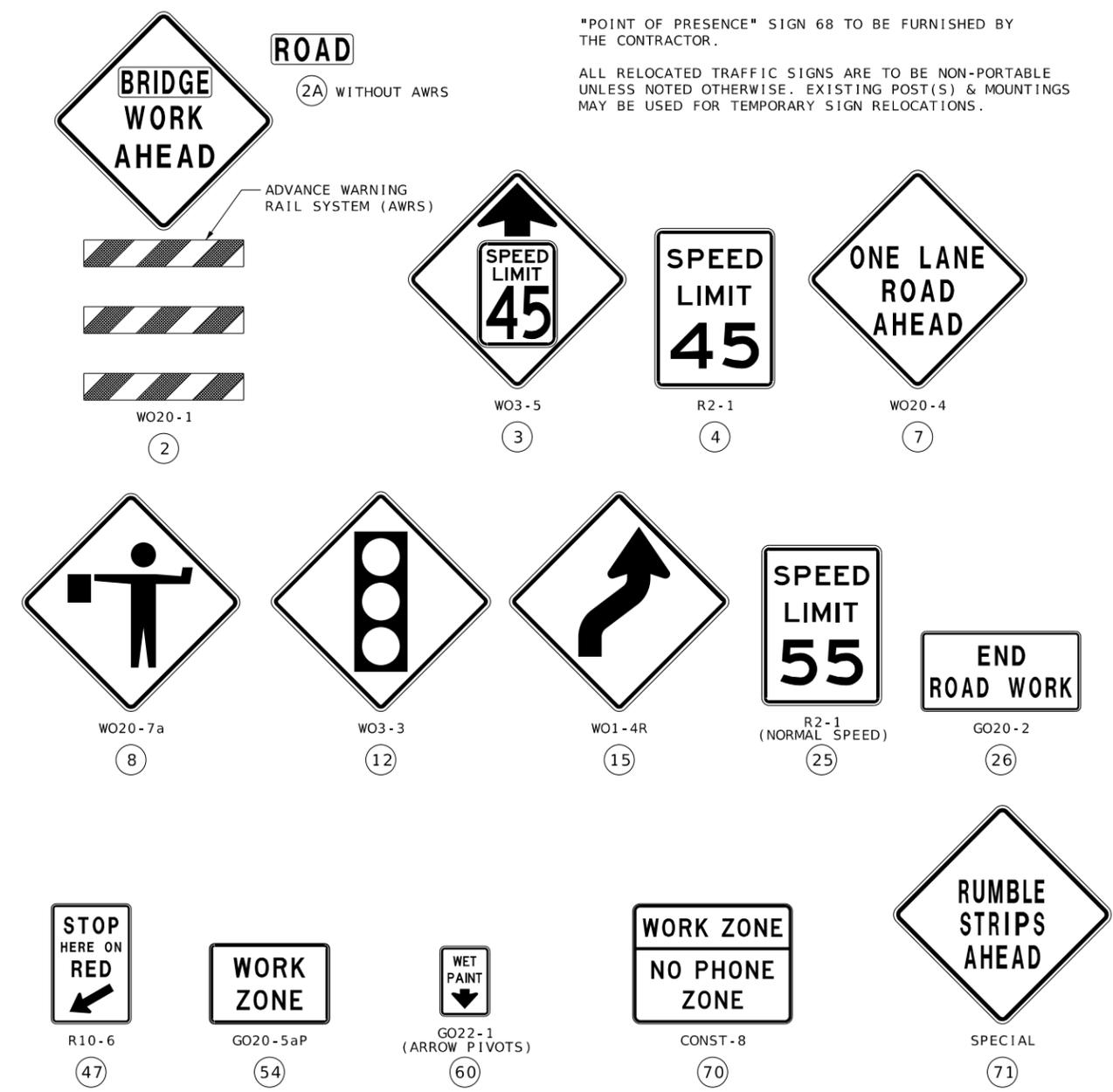
B	r	i	d	g	e						
9.875	17.750	22.750	26.000	32.625	39.125						
I	m	p	r	o	v	e	m	e	n	t	s
9.875	14.000	24.000	30.625	35.000	41.000	47.625	54.250	63.750	70.375	76.750	81.625
F	a	l	l	2	o	2	4				
9.875	42.750	47.000	52.375	55.250	62.125	67.375	72.625	77.875			



CONST-5P-60 SHF-FLAT SHEET FLUORESCENT:
1,500" Radius, No border, Yellow:
"Completed as Promised" Black, D 65% spacing:
Table of letter and object lefts

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

68 (2 SIGNS)



TRAFFIC CONTROL SHEETS
SHEET 5 OF 5

SCOTT MICHAEL
MCDONALD
NUMBER
PE-2018000240
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
06/03/2024

ROUTE 8	STATE MO
DISTRICT CD	SHEET NO. 10

COUNTY
WASHINGTON

JOB NO.
J5P3522

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

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

VEENSTRA
& KIMM INC

Kansas City, Missouri 64159
816-781-6182
Certificate of Authority No. 2002006347



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
06/03/2024
ROUTE 8 STATE MO
DISTRICT BR SHEET NO. 5
COUNTY WASHINGTON
JOB NO. J5P3522
CONTRACT ID.

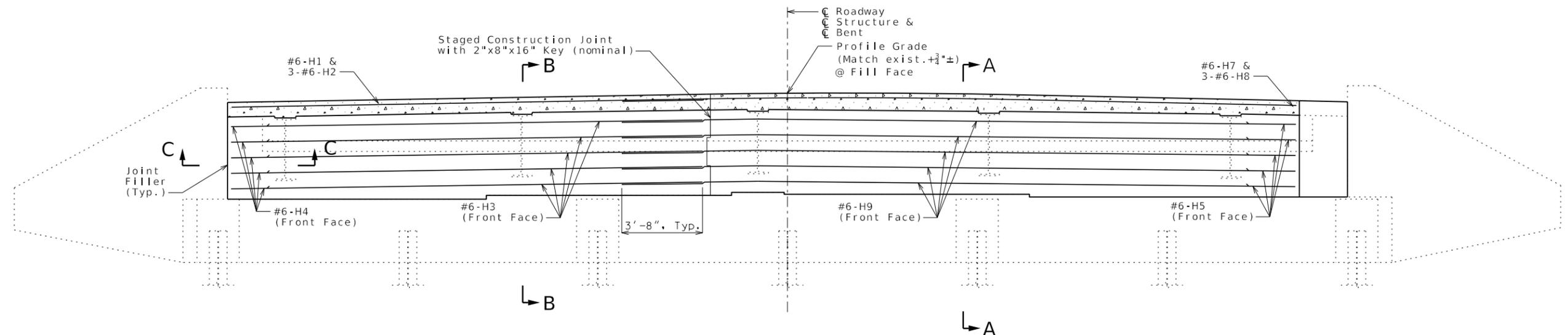
PROJECT NO.
BRIDGE NO. A19972

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

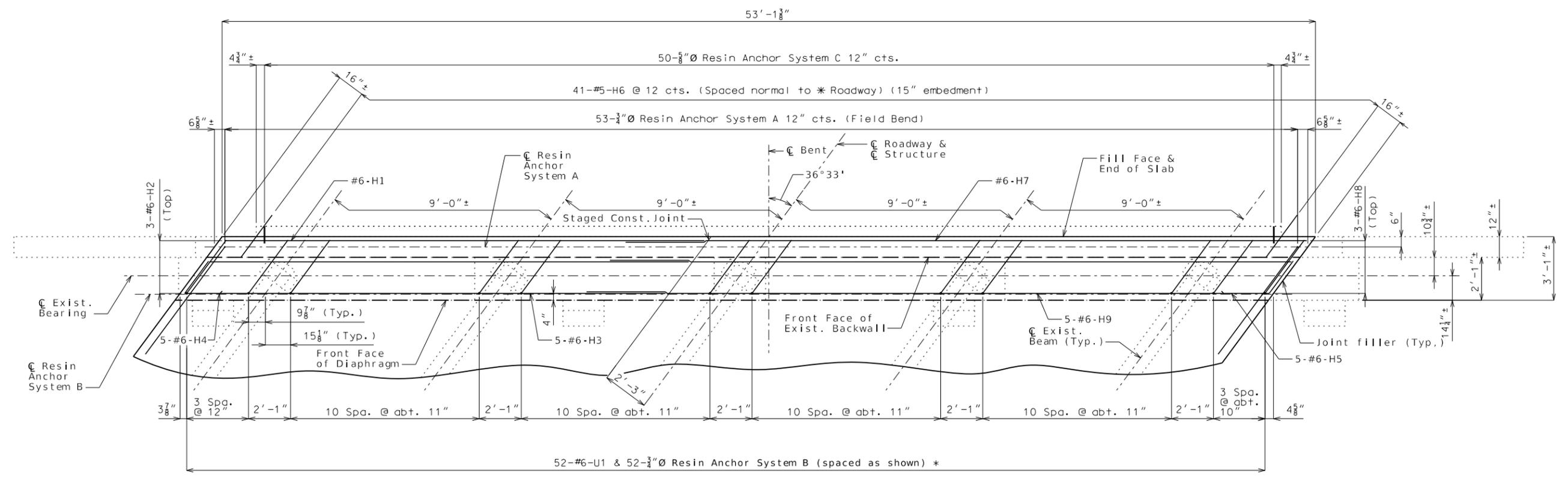
 105 WEST CAPITOL JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

VEENSTRA & KIMM INC.
 Kansas City, Missouri 64157
 9788 N. Ash 816-781-6182
 816-781-0643 (FAX)
 Certificate of Authority No. 2002006947



SECTION NEAR END BENT

Notes: Resin anchors and U-bars not shown for clarity.
Existing steel end diaphragms not shown for clarity (leave in place).



PART PLAN

* Spacing shall be adjusted in the field to clear beam flanges, bearings and Staged Construction Joint by 1 1/2".

Notes:
For Section A-A, B-B and C-C, see Sheet No. 7.
For Details of Resin Anchors, see Sheet No. 7.
Work this sheet with Sheet No. 7.

DETAILS OF END BENT NO. 1

Note: This drawing is not to scale. Follow dimensions. Sheet No. 5 of 14

Detailed Oct. 2023
Checked Dec. 2023



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
06/03/2024

ROUTE 8 STATE MO

DISTRICT BR SHEET NO. 6

COUNTY WASHINGTON

JOB NO. J5P3522

CONTRACT ID.

PROJECT NO.

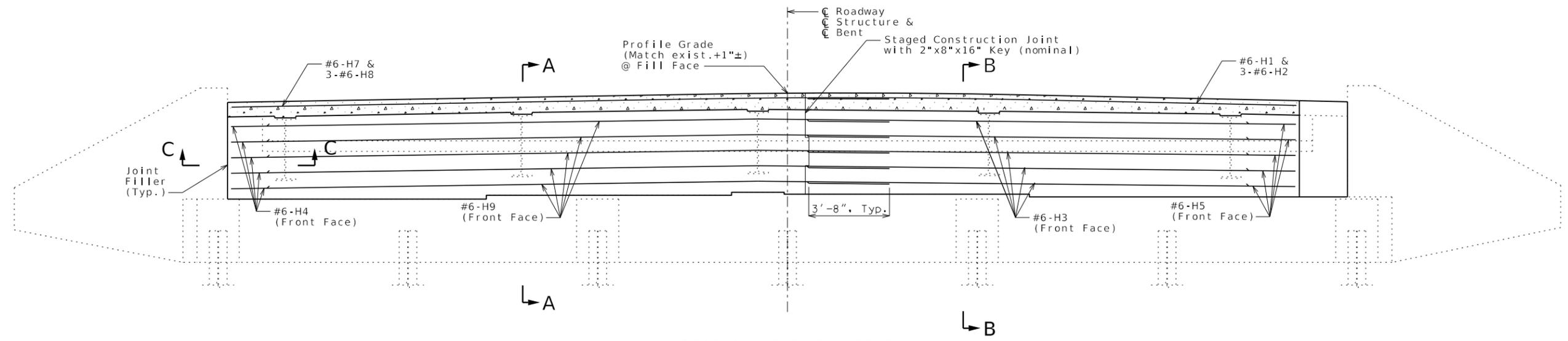
BRIDGE NO. A19972

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

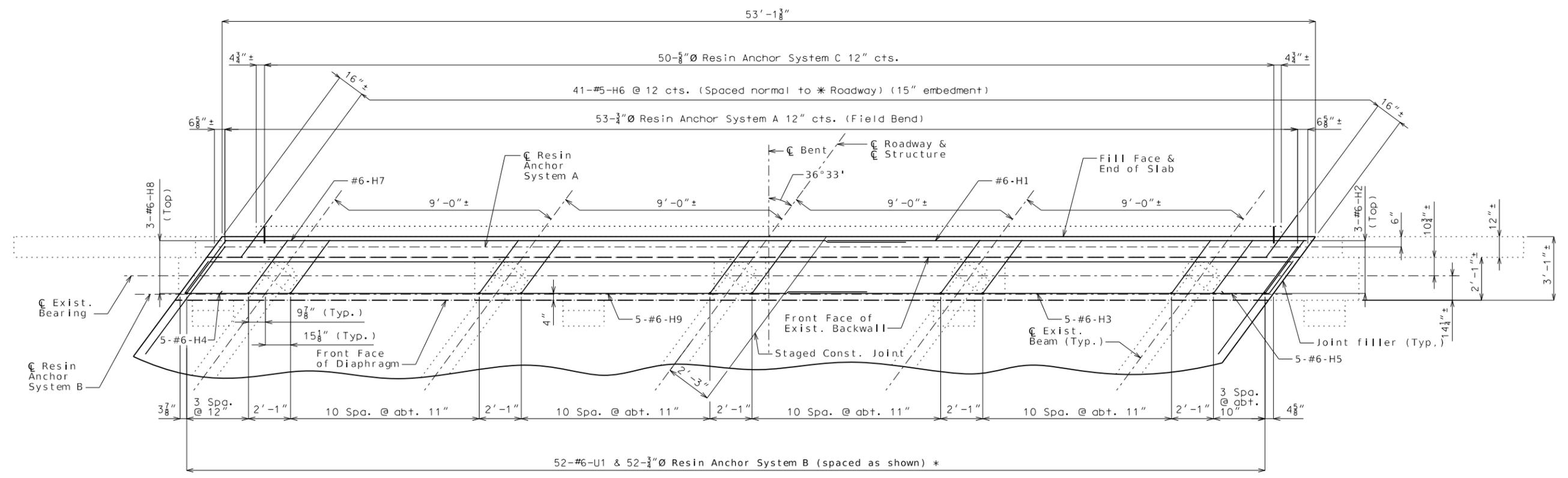
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

VEENSTRA & KIMM INC.
Kansas City, Missouri 64157
9788 N. Ash 816-781-6182
816-781-0643 (FAX)
Certificate of Authority No. 2002006947



SECTION NEAR END BENT

Notes: Resin anchors and U-bars not shown for clarity.
Existing steel end diaphragms not shown for clarity (leave in place).

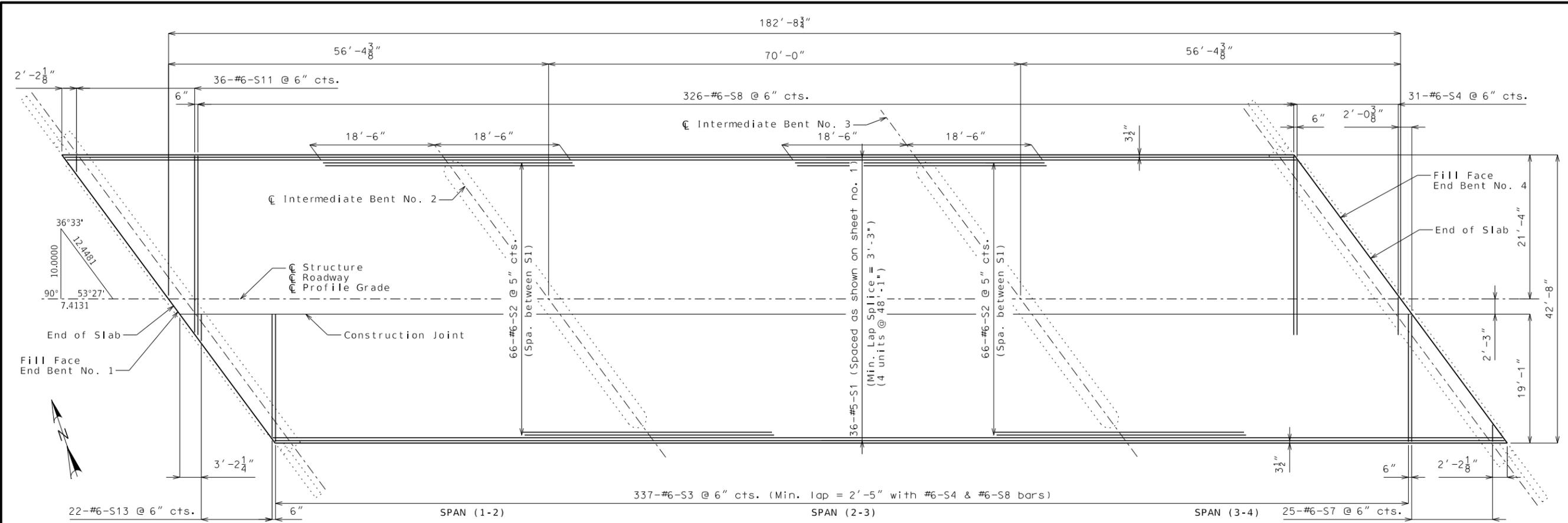


PART PLAN

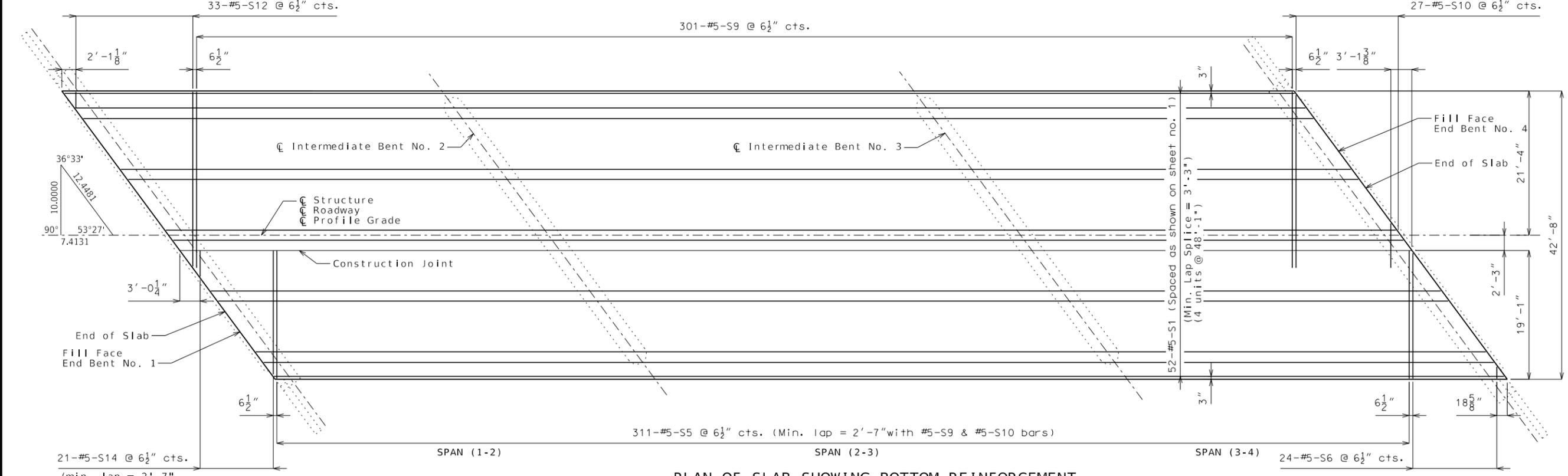
* Spacing shall be adjusted in the field to clear beam flanges, bearings and Staged Construction Joint by 1 1/2".

Notes:
For Section A-A, B-B and C-C, see Sheet No. 7.
For Details of Resin Anchors, see Sheet No. 7.
Work this sheet with Sheet No. 7.

DETAILS OF END BENT NO. 4



PLAN OF SLAB SHOWING TOP REINFORCEMENT



PLAN OF SLAB SHOWING BOTTOM REINFORCEMENT

Note:
At the Contractor's option, lap splices for transverse bars may be substituted with mechanical bar splices at no additional cost to the project.

Notes:
For details of barrier, see Sheets No. 10 & 11. Longitudinal slab dimensions are measured horizontally.
For Slab Section, see Sheet No. 1.

Detailed Feb. 2024
Checked Feb. 2024

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

Sheet No. 9 of 14



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED		06/03/2024	
ROUTE	STATE	DISTRICT	SHEET NO.
8	MO	BR	9
COUNTY			
WASHINGTON			
JOB NO.			
J5P3522			
CONTRACT ID.			
PROJECT NO.			
BRIDGE NO.			
A19972			

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

VEENSTRA & KIMM INC.

9788 N. Ash
Kansas City, Missouri 64157
816-781-6182
816-781-0643 (FAX)
Certificate of Authority No. 2002006347



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
06/03/2024

ROUTE 8 STATE MO
DISTRICT BR SHEET NO. 10

COUNTY WASHINGTON
JOB NO. J5P3522
CONTRACT ID.

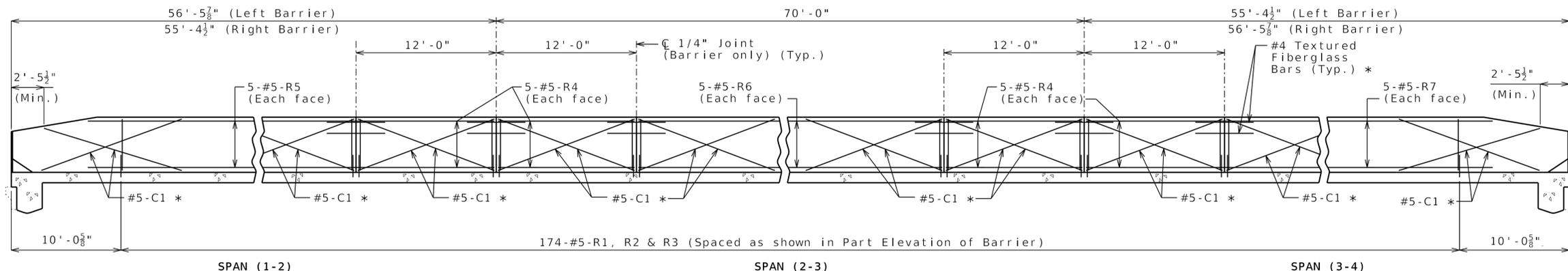
PROJECT NO.

BRIDGE NO. A19972

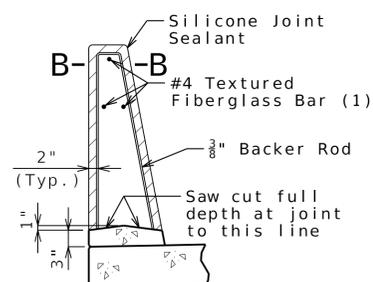
DATE	DESCRIPTION

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

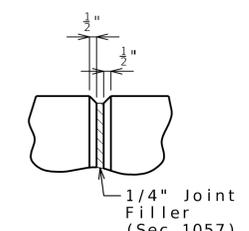
VEENSTRA & KIMM INC.
Kansas City, Missouri 64157
9788 N. Ash 816-781-6182 816-781-0643 (FAX)
Certificate of Authority No. 2002066347



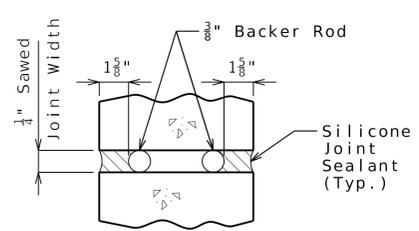
ELEVATION OF BARRIER
(Left barrier shown, right barrier similar)
Longitudinal dimensions are horizontal.



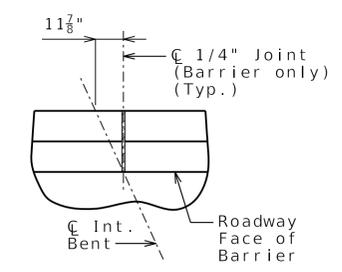
SECTION THRU SAW CUT JOINT



PART ELEVATION AT FORMED JOINT



SECTION B-B



PART PLAN SHOWING JOINT LOCATION

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.

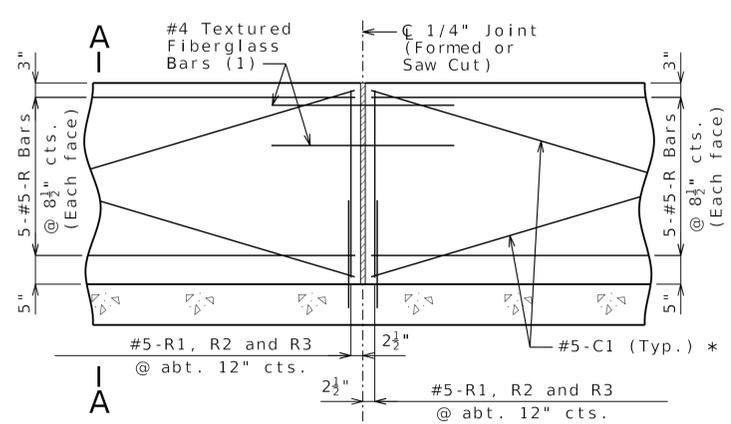
Concrete in barrier shall be Class B-1.

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.

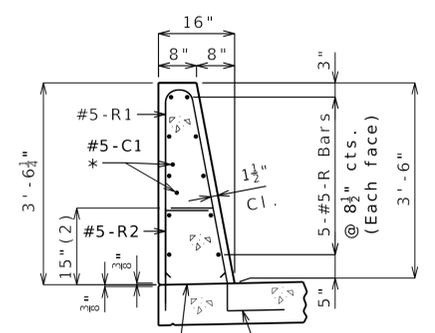
Joint sealant and backer rods shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

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



PART ELEVATION OF BARRIER

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

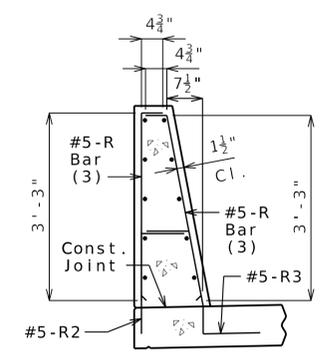


SECTION A-A

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



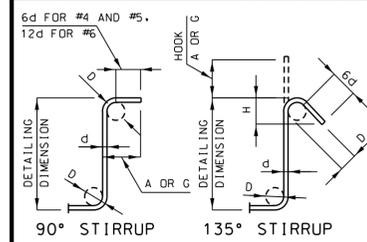
R-BAR PERMISSIBLE ALTERNATE SHAPE

(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.)

TYPE D BARRIER

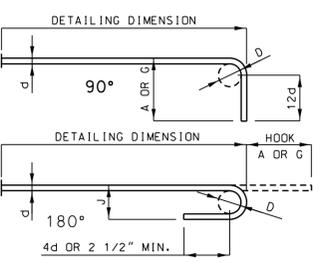
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS								NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT						
									B		C		D		E					F		H		K	
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.	FT.	IN.	FT.	IN.
		SUPERSTRUCTURE																							
		END BENTS																							
2	6 H1	DIAPHRAGM	E	20					23	5.625						23	6	23	6	71					
6	6 H2	DIAPHRAGM	E	20					23	5.625						23	6	23	6	212					
10	6 H3	DIAPHRAGM	E	20					23	5.625						23	6	23	6	353					
10	6 H4	DIAPHRAGM	E	21	S				2	3.000	3	8.000			21.625	16.125	5	11	5	6	83				
10	6 H5	DIAPHRAGM	E	21	S				2	3.000			3	8.000	21.625	16.125	5	11	5	10	88				
82	5 H6	DIAPHRAGM	E	20					2	6.000						2	6	2	6	214					
2	6 H7	DIAPHRAGM	E	20					32	11.000						32	11	32	11	99					
6	6 H8	DIAPHRAGM	E	20					32	11.000						32	11	32	11	297					
10	6 H9	DIAPHRAGM	E	20					32	11.000						32	11	32	11	494					
104	6 U1	DIAPHRAGM	E	11	S					12.000	3	5.000	4	0.000			8	5	8	0	1250				
		BARRIER																							
20	5 K1	BARRIER	E	27	S				3	8.000	9.250	5.375	3	2.750		5.250	1.000	8	1	7	11	165			
56	5 K2	BARRIER	E	27	S				3	8.000	9.250	14.500	2	5.750		14.250	2.750	8	2	7	11	462			
20	5 K4	BARRIER	E	19	S	V	4		2	4.250	10.000							3	2	3	1				
		INCR. = 0.500 IN.							2	6.250	10.000							3	4	3	3	65			
20	5 K5	BARRIER	E	14	S	V	4		8.250	9.500	18.500				4.000	18.000	3	0	2	11					
		INCR. = 0.500 IN.							8.250	9.500	20.500				4.500	20.000	3	2	3	1	62				
12	5 K6	BARRIER	E	19	S	V	4		2	6.750	10.000							3	5	3	4				
		INCR. = 0.500 IN.							2	7.750	10.000							3	6	3	5	42			
12	5 K7	BARRIER	E	21	S	V	4		2	6.625	10.000			2	6.000	6.250	3	5	3	3					
		INCR. = 0.500 IN.							2	7.625	10.000			2	7.000	6.500	3	6	3	4	41				
36	5 K8	BARRIER	E	19	S	V	4		2	8.500	10.000							4	1	3	11	137			
		INCR. = 0.750 IN.							3	2.500	10.000							4	1	3	11	137			
36	5 K9	BARRIER	E	21	S	V	4		2	8.500	10.000			2	7.750	6.750	3	7	3	5					
		INCR. = 0.750 IN.							3	2.500	10.000			3	1.750	7.750	4	1	3	11	137				
8	5 K10	BARRIER	E	19	S				3	3.000	10.000							4	1	4	0	34			
8	5 K11	BARRIER	E	21	S				3	3.000	10.000			3	2.250	7.750	4	1	3	11	33				
48	5 K12	BARRIER	E	20					9	9.000						9	9	9	9	488					
16	5 K13	BARRIER	E	20		V	8		6	9.000						6	9	6	9						
		INCR. = 36.000 IN.							9	9.000						9	9	9	9	138					
348	5 R1	BARRIER	E	26	S				3	3.000	5.500	3	1.375		3	3.000	6.750	6	10	6	10	2480			
348	5 R2	BARRIER	E	19	S					20.500	9.500							2	6	2	5	877			
348	5 R3	BARRIER	E	27	S					9.500	15.250	5.000	12.000	15.000	3.000	3	6	3	3	1180					
80	5 R4	BARRIER	E	20					11	9.000						11	9	11	9	980					
20	5 R5	BARRIER	E	20					37	8.000						37	8	37	8	786					
20	5 R6	BARRIER	E	20					45	9.000						45	9	45	9	954					
20	5 R7	BARRIER	E	20					36	6.000						36	6	36	6	761					
		SLIP FORM																							
40	5 C1	SLIP FORM	E	20					12	0.000						12	0	12	0	501					



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

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



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

NOTE:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) F_y = 60,000 PSI.

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS								NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT						
									B		C		D		E					F		H		K	
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.	FT.	IN.	FT.	IN.
		SUPERSTRUCTURE																							
		SLAB																							
352	5 S1	SLAB	E	20					48	1.000						48	1	48	1	17653					
132	6 S2	SLAB	E	20					37	0.000						37	0	37	0	7336					
337	6 S3	SLAB	E	20					18	10.000						18	10	18	10	9533					
31	6 S4	SLAB	E	20		V	1		5	6.000						5	6	5	6						
		INCR. = 8.125 IN.							25	9.750						25	10	25	10	729					
311	5 S5	SLAB	E	20					18	10.000						18	10	18	10	6109					
24	5 S6	SLAB	E	20		V	1		1	9.000						1	9	1	9						
		INCR. = 8.750 IN.							18	6.250						18	6	18	6	253					
25	6 S7	SLAB	E	20		V	1		2	6.000						2	6	2	6						
		INCR. = 8.125 IN.							18	9.000						18	9	18	9	399					
326	6 S8	SLAB	E	20					26	6.000						26	6	26	6	12976					
301	5 S9	SLAB	E	20					26	3.000						26	3	26	3	8241					
27	5 S10	SLAB	E	20		V	1		6	9.000						6	9	6	9						
		INCR. = 8.750 IN.							25	8.500						25	9	25	9	458					
36	6 S11	SLAB	E	20		V	1		2	4.000						2	4	2	4						
		INCR. = 8.125 IN.							26	0.375						26	0	26	0	766					
33	5 S12	SLAB	E	20		V	1		2	5.000						2	5	2	5						
		INCR. = 8.750 IN.							25	9.000						25	9	25	9	485					
22	6 S13	SLAB	E	20		V	1		3	11.375						3	11	3	11						
		INCR. = 8.125 IN.							18	2.000						18	2	18	2	365					
21	5 S14	SLAB	E	20		V	1		3	9.000						3	9	3	9						
		INCR. = 8.750 IN.							18	4.000															