MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

PLANS FOR PROPOSED STATE HIGHWAY

JACKSON COUNTY
HOLMES STREET OVER I-670

DESIGN DESIGNATION
HOLMES STREET

A.A.D.T. - 2025 = 5,000
A.A.D.T. - 2045 = 6,000
D.H.V. = 12%
T = 10%
V = 35 M.P.H.
D = 50%

FUNCTIONAL CLASSIFICATION- MAJOR COLLECTOR

DESIGN DESIGNATION
I-670

A.A.D.T. - 2025 = 114,000
A.A.D.T. - 2045 = 126,000
D.H.V. = 10%
T = 10%
V = 45 M.P.H.
D = 50%

FUNCTIONAL CLASSIFICATION- INTERSTATE

NO RIGHT-OF-WAY ACQUISITION

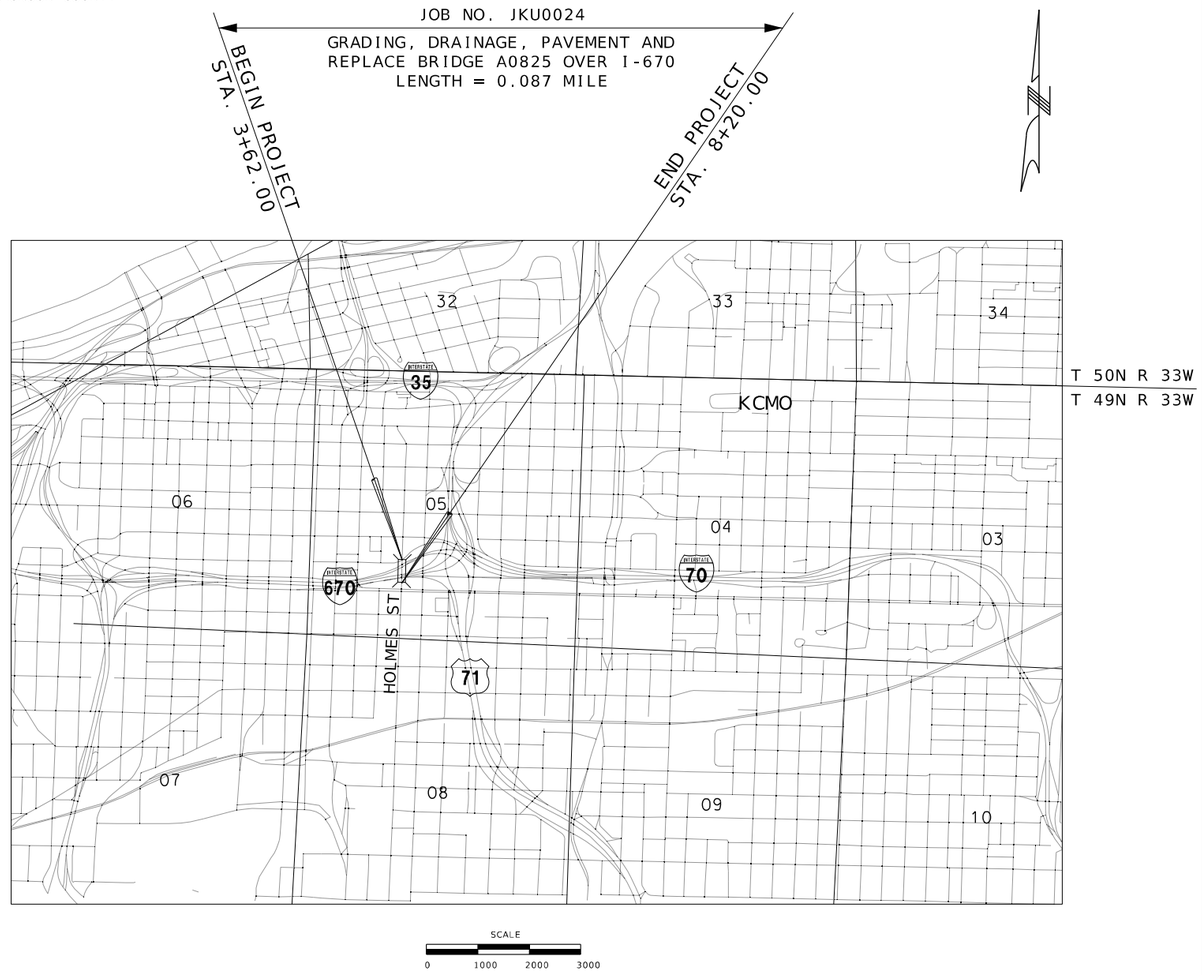
CONVENTIONAL SYMBOLS
(USED IN PLANS)

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

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

KEY MAP
LOCATION OF JACKSON COUNTY

JOB NO. JKU0024
GRADING, DRAINAGE, PAVEMENT AND
REPLACE BRIDGE A0825 OVER I-670
LENGTH = 0.087 MILE



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

INDEX OF SHEETS

LENGTH OF PROJECT

BEGINNING OF PROJECT	STA. 3+62.00	
END OF PROJECT	STA. 8+20.00	
APPARENT LENGTH	458.00	FEET
EQUATIONS AND EXCEPTIONS:	NONE	
TOTAL CORRECTIONS	0.00	FEET
NET LENGTH OF PROJECT	458.00	FEET
STATE LENGTH	0.087	MILES
FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES	0.8	ACRES

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	1
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION
DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

NOTES:
1. TYPICAL SECTIONS ARE INTENDED TO SHOW GENERAL FEATURES AND MATERIALS OF THE PROPOSED CONSTRUCTION. ACTUAL CONSTRUCTION OF ROADWAY WIDTHS, TRANSITIONS, SLOPES, DITCHES, AND OTHER FEATURES SHALL CONFORM TO THE DETAILS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

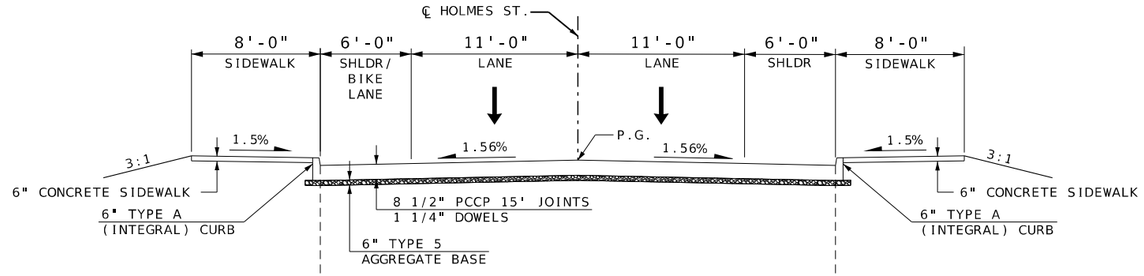
2. SEE SUPERELEVATION DIAGRAMS ON PROFILE SHEETS FOR PAVEMENT CROSS SLOPE INFORMATION.

3. ALL PAVEMENT, BASE, AND SHOULDERS SHOWN WITH A DASHED LINE ON THE TYPICAL SECTIONS INDICATE EXISTING OR PREVIOUS CONSTRUCTION.

4. BASE MATERIAL OUTSIDE OF THE EDGE OF SHOULDER IS CONSIDERED INCIDENTAL WITH NO DIRECT PAY.

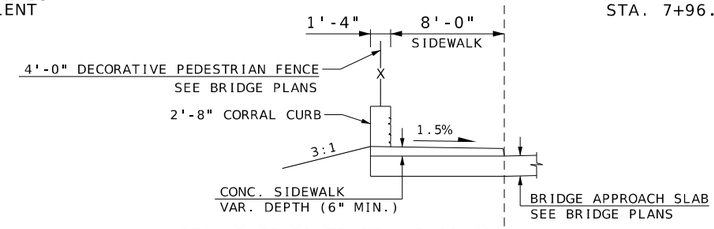
5. FORMLINER AND CONCRETE STAIN SHALL BE APPLIED TO THE EXPOSED FACE OF CORRAL CURB AND SHALL MATCH BRIDGE BARRIER FORMLINER AND CONCRETE STAIN. SEE BRIDGE PLANS FOR ADDITIONAL DETAILS.

6. CURBS SPECIFIED FOR OPTIONAL PAVEMENT AREAS ARE ILLUSTRATED AS INTEGRAL CURB. IF ASPHALT OPTION IS SELECTED, SUBSTITUTE INTEGRAL CURB FOR EQUIVALENT SHAPE MODOT SEPARATED CURB.

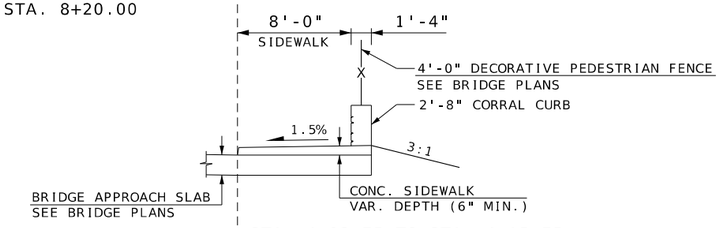


2-LANE SECTION ON TANGENT

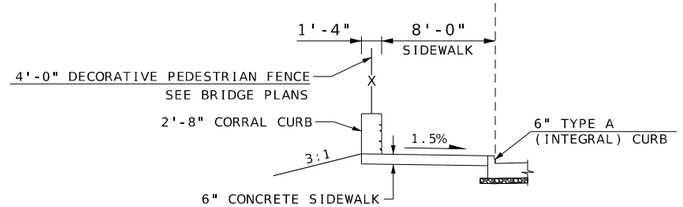
TYPICAL SECTION HOLMES ST.
STA. 3+62.00 TO STA. 3+82.54
STA. 7+96.39 TO STA. 8+20.00



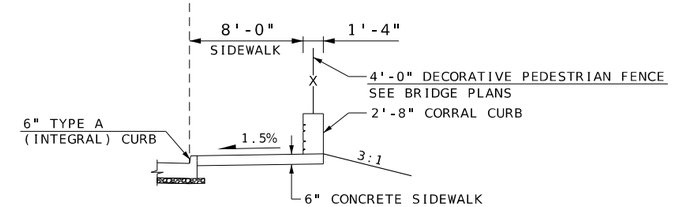
STA. 3+62.32 TO STA. 3+82.49
STA. 7+69.90 TO STA. 7+89.90



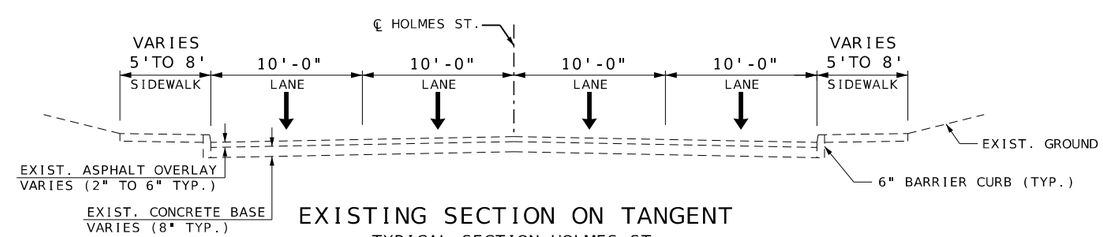
STA. 4+02.75 TO STA. 4+15.75
STA. 7+82.88 TO STA. 8+02.88



STA. 3+56.65 TO STA. 3+62.32
STA. 7+89.90 TO STA. 8+05.23



STA. 3+95.54 TO STA. 4+02.75
STA. 8+02.88 TO STA. 8+11.31



EXISTING SECTION ON TANGENT

TYPICAL SECTION HOLMES ST.

NOT TO SCALE

TYPICAL SECTIONS
SHEET 1 OF 4

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	2
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION | DATE

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

HNTB
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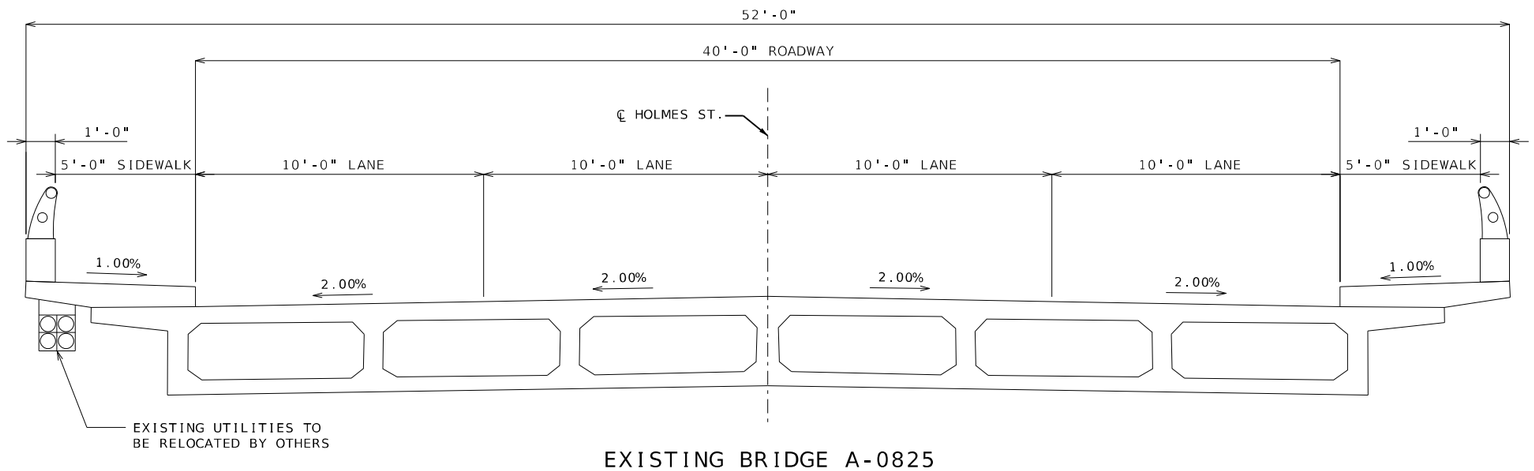
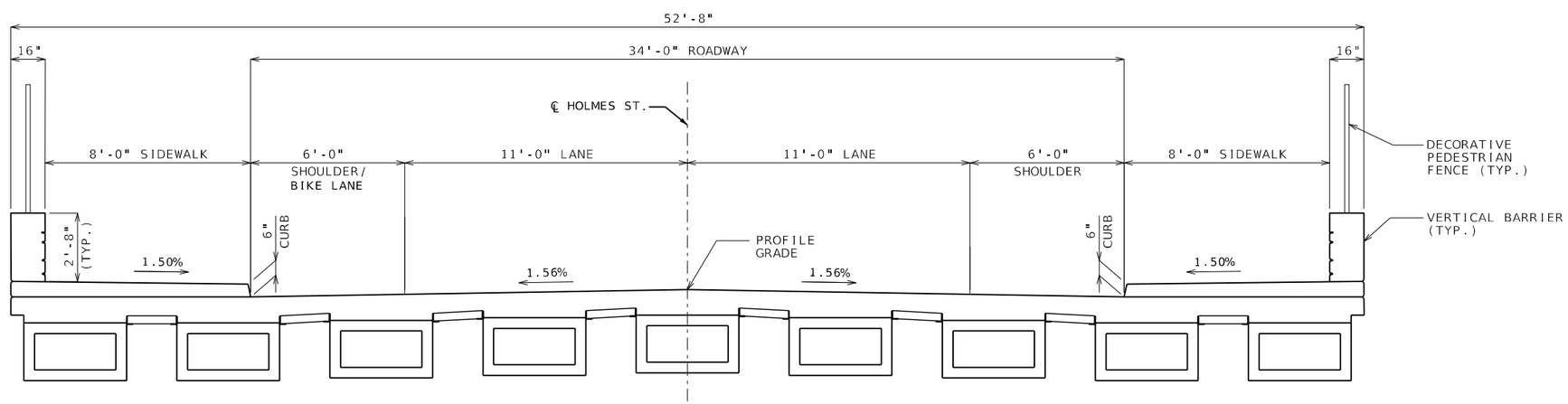


EXISTING BRIDGE A-0825

TYPICAL SECTION HOLMES ST.
STA 4+01.87 TO 7+80.00



PROPOSED BRIDGE A-9599

TYPICAL SECTION HOLMES ST.
STA 3+95.54 TO 7+76.39

NOT TO SCALE

TYPICAL SECTIONS
SHEET 2 OF 4

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	2
COUNTY	JACKSON
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OPTIONAL PAVEMENT I-670

ASPHALT DESIGN

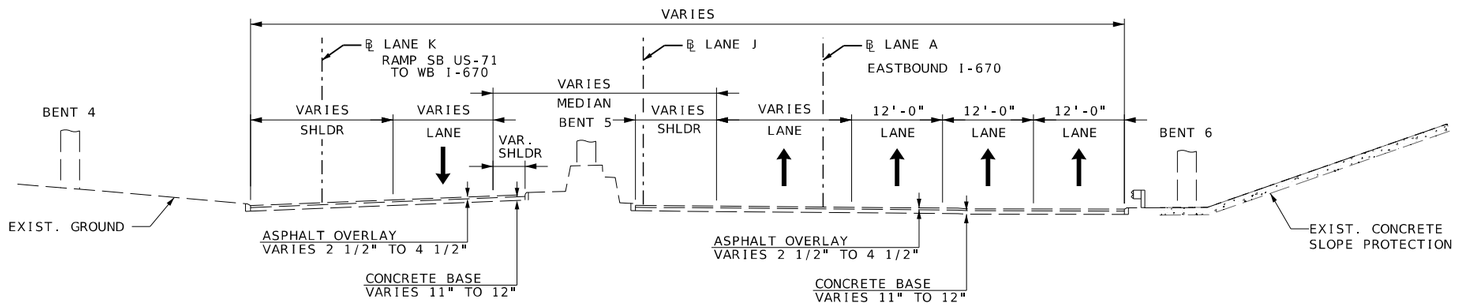
2" ASPHALTIC CONCRETE MIXTURE PG 70-22 (SP125C)

2" ASPHALTIC CONCRETE MIXTURE PG 70-22 (SP125C)

6" ASPHALTIC CONCRETE MIXTURE PG 64-22 (SP190C)

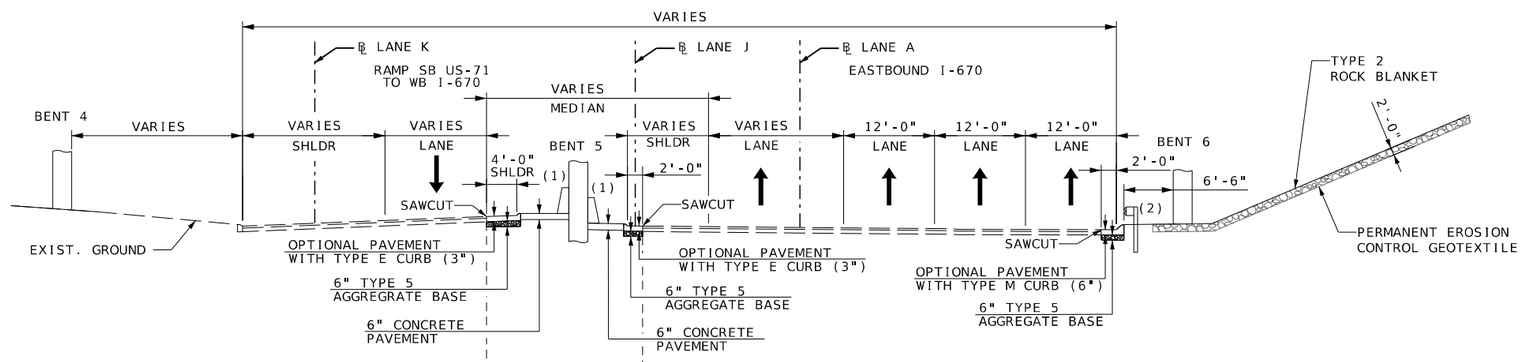
CONCRETE DESIGN

9" PCCP 15' JOINTS WITH 1 ¼" DOWELS



EXISTING SECTION ON TANGENT

TYPICAL SECTION EASTBOUND I-670



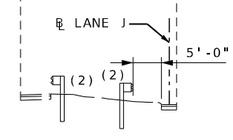
SECTION ON TANGENT

TYPICAL SECTION EASTBOUND I-670

STA. 44+40.56 TO STA. 44+97.28 (LANE A)
STA. 3+03.00 TO STA. 3+58.62 (LANE J)
STA. 13+52.05 TO STA. 14+07.21 (LANE K)

(1) CONCRETE MEDIAN BARRIER PIER PROTECTION
(2) MGS GUARDRAIL

MATCH EXISTING CROSS SLOPES
WHERE SLOPES ARE NOT PROVIDED



STA. 3+58.42 TO STA. 4+21.12 (LANE J)
STA. 13+13.54 TO STA. 13+64.50 (LANE K)

NOT TO SCALE

TYPICAL SECTIONS
SHEET 3 OF 4

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
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OPTIONAL PAVEMENT I-670

ASPHALT DESIGN

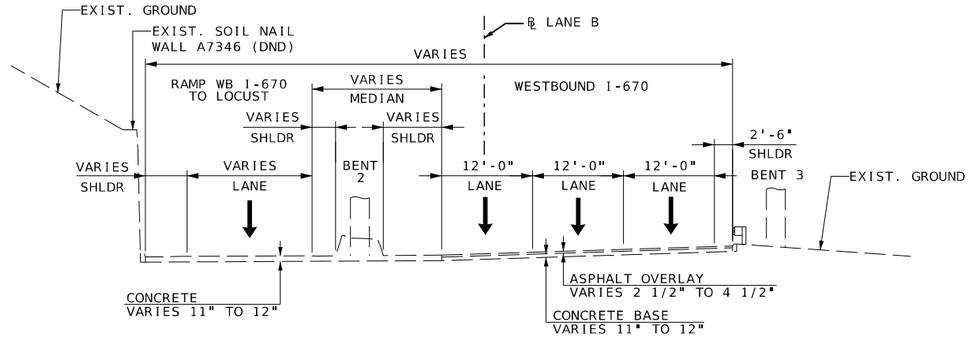
2" ASPHALTIC CONCRETE MIXTURE PG 70-22 (SP125C)

2" ASPHALTIC CONCRETE MIXTURE PG 70-22 (SP125C)

6" ASPHALTIC CONCRETE MIXTURE PG 64-22 (SP190C)

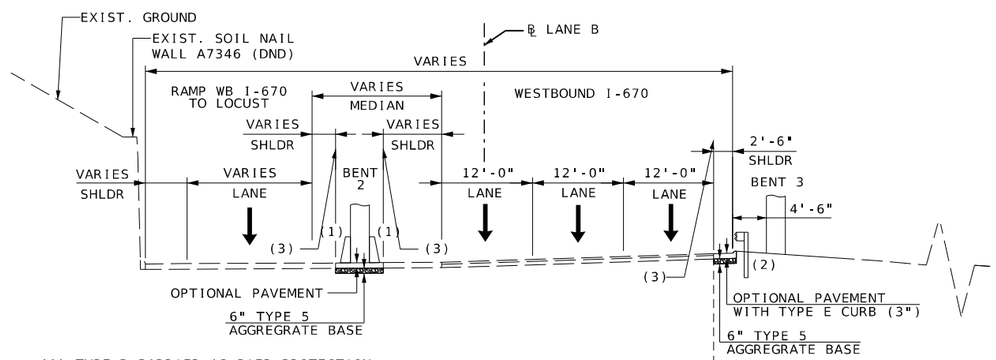
CONCRETE DESIGN

9" PCCP 15' JOINTS WITH 1 ¼" DOWELS



EXISTING SECTION ON TANGENT

TYPICAL SECTION WESTBOUND I-670



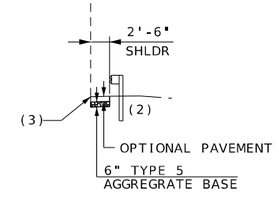
(1) TYPE D BARRIER AS PIER PROTECTION
(2) MGS GUARDRAIL
(3) SAWCUT

SECTION ON TANGENT

TYPICAL SECTION WESTBOUND I-670

STA. 34+84.00 TO STA. 35+46.00 (LANE B)

MATCH EXISTING CROSS SLOPES WHERE SLOPES ARE NOT PROVIDED



STA. 35+46.00 TO STA. 36+34.62 (LANE B)

NOT TO SCALE

TYPICAL SECTIONS
SHEET 4 OF 4

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	
3/28/2025	
ROUTE HOLMES	STATE MO
DISTRICT KC	SHEET NO. 2
COUNTY JACKSON	
JOB NO. JKU0024	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A9599	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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JEFFERSON CITY, MO 65102
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REMOVAL OF IMPROVEMENTS

SHEET	FROM STA	TO STA	SIDE	LOCATION	DESCRIPTION	QUANTITY	UNITS
12	3+43.53	4+10.55	LT & RT	HOLMES ST.	SAWCUT	125.2	LF
13	8+20.00		LT & RT	HOLMES ST.	SAWCUT	54.6	LF
12	34+77.00	35+46.00	RT	I-670 LANE B	SAWCUT	153.5	LF
12	34+90.20	36+34.80	LT	I-670 LANE B	SAWCUT	152.7	LF
13	13+52.05	14+07.21	LT	I-670 LANE K	SAWCUT	63.3	LF
13	3+03.00	3+58.62	LT	I-670 LANE J	SAWCUT	69.1	LF
13	44+40.56	45+04.71	RT	I-670 LANE A	SAWCUT	70.5	LF
50	34+90.95	--	RT	I-670 LANE B	EXIT SIGN POST	2.0	EA
50	34+83.12	--	--	I-670 LANE B	SIGN- VERTICAL CLEARANCE	1.0	EA
51	44+27.04	--	--	I-670 LANE A	SIGN- VERTICAL CLEARANCE	1.0	EA
12	34+63.44	34+90.22	RT	I-670 LANE B	GUARDRAIL REMOVAL (CRASH CUSHION)	1.0	EA
12	34+90.20	36+34.24	LT	I-670 LANE B	GUARDRAIL REMOVAL	145.9	LF
13	13+13.54	13+64.50	LT	I-670 LANE K	GUARDRAIL REMOVAL	51.7	LF
8	3+50.51	4+21.12	LT	I-670 LANE J	GUARDRAIL REMOVAL	70.7	LF
13	42+14.44	45+02.08	RT	I-670 LANE A	GUARDRAIL REMOVAL	287.5	LF
12	34+90.33	35+46.00	RT	I-670 LANE B	CONCRETE BARRIER	55.6	LF
12	34+90.40	35+46.00	RT	I-670 LANE B	CONCRETE BARRIER	55.6	LF
12	34+93.78	35+46.00	RT	I-670 LANE B	CONCRETE MEDIAN PIER PROTECTION	21.5	SY
8	3+03.00	3+52.99	LT	I-670 LANE J	CONCRETE MEDIAN PIER PROTECTION	38.0	SY
12	3+62.00	4+01.80	LT & RT	HOLMES ST.	PAVEMENT	180.3	SY
13	7+83.44	8+20.00	LT & RT	HOLMES ST.	PAVEMENT	163.2	SY
12	34+77.00	35+46.00	RT	I-670 LANE B	PAVEMENT	59.3	SY
12	34+90.20	36+34.83	LT	I-670 LANE B	PAVEMENT	44.4	SY
13	13+52.25	14+07.21	LT	I-670 LANE K	PAVEMENT	9.0	SY
13	3+03.00	3+58.62	LT	I-670 LANE J	PAVEMENT	12.3	SY
13	3+03.00	3+52.99	LT	I-670 LANE J	CONCRETE SHOULDER	38.0	SY
12	3+69.48	4+38.57	LT & RT	HOLMES ST.	CONCRETE SLOPE PROTECTION	64.1	CY
13	7+23.43	8+11.31	LT & RT	HOLMES ST.	CONCRETE SLOPE PROTECTION	223.7	CY
12	3+55.94	3+86.12	LT	HOLMES ST.	SIDEWALK	124.8	SY
12	3+85.53	4+20.76	RT	HOLMES ST.	SIDEWALK	298.0	SY
13	7+77.45	8+20.00	LT	HOLMES ST.	SIDEWALK	228.9	SY
13	7+88.32	8+20.00	RT	HOLMES ST.	SIDEWALK	193.5	SY
12	4+14.85	4+18.96	RT	HOLMES ST.	FENCE	7.8	LF
13	7+91.17	8+23.59	LT	HOLMES ST.	FENCE	39.9	LF
12	3+44.39	3+86.16	LT	HOLMES ST.	CURB	42.8	LF
12	3+87.27	3+89.46	RT	HOLMES ST.	CURB	4.0	LF
12	3+99.92	4+17.66	RT	HOLMES ST.	CURB	17.9	LF
13	7+78.60	8+20.00	LT	HOLMES ST.	CURB	41.5	LF
13	7+88.31	8+20.00	RT	HOLMES ST.	CURB	31.8	LF
12	34+90.20	36+18.77	LT	I-670 LANE B	CURB	129.9	LF
12	13+65.00	14+07.21	LT	I-670 LANE K	CURB	42.8	LF
13	3+03.00	3+58.62	LT	I-670 LANE J	CURB	55.6	LF
12	44+40.56	44+48.72	LT	I-670 LANE A	CURB	8.0	LF
12	44+51.17	45+04.71	LT	I-670 LANE A	CURB	54.1	LF
48	4+07.65		RT.	HOLMES ST.	LIGHT POLE	1	EA
48	4+49.35		LT.	HOLMES ST.	LIGHT POLE	1	EA
49	5+78.04		RT.	HOLMES ST.	LIGHT POLE	1	EA
TOTAL						1 LUMP SUM	

CONTRACTOR FURNISHED SURVEYING AND STAKING	
TOTAL	1 LUMP SUM

MOBILIZATION	
TOTAL	1 LUMP SUM

FENCING

SHEET	FROM STA	TO STA	LOCATION	SIDE	CHAIN-LINK FENCE (48") LF	REMARKS
4	3+74.48	3+88.31	HOLMES ST.	LT	14	
4	4+10.54	4+28.65	HOLMES ST.	RT	25	
6	7+82.77	8+23.59	HOLMES ST.	LT	58	
TOTAL					97	

SEE CONCRETE TRAFFIC BARRIER TABLE FOR ADDITIONAL FENCING

PAVEMENT

SHEET	FROM STA	TO STA	LOCATION	CONCRETE PAVEMENT (8 1/2" NON-REIN. 15' JOINTS) SY	OPTIONAL PAVEMENT SY	TYPE 5 AGGREGATE FOR BASE (6") SY	CONCRETE PAVEMENT (6" NON-REINFORCED) SY	REMARKS
4	3+62.00	3+82.54	HOLMES ST.	93.0		93		
6	7+96.39	8+20.00	HOLMES ST.	97.9		98		
8	34+77.00	35+46.00	I-670 LANE B		56.9	57		
8	34+90.20	36+34.80	I-670 LANE B		42.9	43		
8	13+52.05	14+07.21	I-670 LANE K		10.7	11		
8	3+03.00	3+58.62	I-670 LANE J		12.4	12		
8	44+40.56	45+06.03	I-670 LANE A		14.6	15		
8	34+87.00	35+46.00	I-670 LANE B				18.1	CONCRETE CAP
8	13+65.00	14+07.21	I-670 LANE K				15.2	
8	3+03.00	3+58.62	I-670 LANE J				9.6	
TOTAL				190.9	137.5	329	43	

SUMMARY OF QUANTITIES
SHEET 1 OF 6

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED 3/28/2025
ROUTE HOLMES | STATE MO
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NO. 001270

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SIDEWALK

SHEET	FROM STA	TO STA	LOCATION	SIDE	CONCRETE SIDEWALK (6") SY	TINTED OR STAMPED CONCRETE SIDEWALK (6") SY	CONCRETE SIDEWALK (6") APPROACH SLAB SY	CONCRETE CURB RAMP SY	TRUNCATED DOMES SF	REMARKS
4	3+55.98	3+66.92	HOLMES ST.	LT	5.7					
4	3+62.32	3+82.48	HOLMES ST.	LT			12.1			
4	3+85.88	3+97.40	HOLMES ST.	RT				10.9	10.5	
4	3+97.37	4+02.61	HOLMES ST.	RT	2.0					
4	3+97.37	4+15.75	HOLMES ST.	RT			11.9			
4	3+91.99	3+95.54	HOLMES ST.	RT		1.0				
6	7+69.90	7+92.08	HOLMES ST.	LT			19.6			
6	7+80.71	8+02.88	HOLMES ST.	RT			19.6			
6	7+89.90	8+20.00	HOLMES ST.	LT	23.0					
6	8+00.71	8+20.00	HOLMES ST.	RT	16.4					
SUBTOTAL					47.1	1.0	63.2	10.9	10.5	
TOTAL					48.1		63.2	10.9	11	

GUARDRAIL

SHEET	FROM STA	TO STA	LOCATION	SIDE	MGS END ANCHOR EA	TYPE C CRASHWORTHY END TERMINAL (MASH) EA	TYPE A CRASHWORTHY END TERMINAL (MASH) EA	MGS VERTICAL CONCRETE BARRIER TRANSITION EA	MGS BLOCK AND HEIGHT TRANSITION EA	MGS GUARDRAIL LF	REMARKS
8		34+77.00	I-670 LANE B	RT		1					
8	34+90.20	36+34.16	I-670 LANE B	LT	1					137.5	
8	13+13.59	13+64.50	I-670 LANE K	LT	1					37.5	
8	3+58.62	4+21.12	I-670 LANE J	LT				1	1		
8	42+14.42	44+99.08	I-670 LANE A	RT	1		1			225.0	
TOTAL					3	1	1	1	1	400	

CONCRETE TRAFFIC BARRIER

SHEET	FROM STA	TO STA	LOCATION	SIDE	TYPE D LF	CONCRETE MEDIAN BARRIER PIER PROTECTION LS	CORRAL CURB LF	CONCRETE TRAFFIC BARRIER TRANSITION EA	FORM LINERS (ROADWAY BARRIER) SY	CONCRETE AND MASONRY PROTECTION SYSTEM SY	SACRIFICIAL GRAFFITI PROTECTION SYSTEM SY	(48 IN.) DECORATIVE PEDESTRIAN FENCE LF	REMARKS
4	3+56.65	3+69.65	HOLMES ST.	LT			13		8	8	8	13	
4	3+95.54	4+10.54	HOLMES ST.	RT				1					HEIGHT TRANS.
6	7+94.31	8+11.31	HOLMES ST.	RT			2	1	1	1	1	2	HEIGHT TRANS.
6	7+81.33	8+05.23	HOLMES ST.	LT			9	1	5	5	5	9	HEIGHT TRANS.
8	34+77.00	35+46.00	I-670 LANE B	RT	59			1					TYPE B TO D TRANS.
8	34+77.00	35+46.00	I-670 LANE B	RT	59			1					TYPE B TO D TRANS.
8	3+03.00	3+58.62	I-670 LANE J	LT		1							
TOTAL					118	1 LUMP SUM	24	5	14	1 LUMP SUM	1 LUMP SUM	24	

EARTHWORK

SHEET	FROM STATION	TO STATION	LOCATION	COMPACTING IN CUT STA	COMPACTING EMBANKMENT CY	CLASS A EXCAVATION CY	POROUS BACKFILL CY	REMARKS
XS1	3+62.00	8+20.00	HOLMES ST.	0.8	15	9.8		
8	34+87.00	35+46.00	I-670 LANE B				19.1	FOR 6" CONCRETE CAP
TOTAL				0.8	15	10	19	

RELOCATING SIGNS

SHEET	STATION	LOCATION	SIDE	RELOCATE EXIST. SIGNS EACH	REMARKS
50	4+36.00	HOLMES ST.	LT.	1	SIGN 5. REMOUNT TO PROPOSED LIGHT POLE
51	5+76.55	HOLMES ST.	RT.	1	SIGN 6. REMOUNT TO PROPOSED LIGHT POLE
51	7+22.81	HOLMES ST.	LT.	1	SIGN 7. REMOUNT TO PROPOSED LIGHT POLE
51	8+25.00	HOLMES ST.	LT.	1	SIGN 2 BIKE. REMOUNT TO NEW POST
51	8+25.00	HOLMES ST.	LT.	1	SIGN 2 ARROW. REMOUNT TO NEW POST
TOTAL				5	

SUMMARY OF QUANTITIES
SHEET 2 OF 6

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED 3/28/2025
ROUTE HOLMES | STATE MO
DISTRICT KC | SHEET NO. 3
COUNTY JACKSON
JOB NO. JKU0024
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9599

DESCRIPTION | DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

EROSION CONTROL

SHEET	STATION	STATION	LOCATION	SIDE	CURB INLET CHECK EA	SILT FENCE LF	SEDIMENT REMOVAL CY	REMARKS
46	3+58		HOLMES ST.	LT	1		0.5	
46	1+26		14TH ST.	LT	1		0.5	
46	35+90		I-670 LANE B	RT	1		0.5	
46	35+91		I-670 LANE B	RT	1		0.5	
47	14+20		I-670 LANE K	RT	1		0.5	
47	13+75		I-670 LANE K	RT	1		0.5	
47	44+00		I-670 LANE A	RT	1		0.5	
47	44+25		I-670 LANE A	LT	1		0.5	
47	44+14	45+21	I-670 LANE A	RT		108	1.1	
47	8+90		HOLMES ST.	RT	1		0.5	
TOTAL					9	108	6	

ADJUSTING MANHOLE

SHEET	STA	OFFSET FT	LOCATION	SIDE	ADJUSTING MANHOLE EA	REMARKS
6	8+14.51	24.6	HOLMES ST.	RT.	1	EVERGY MANHOLE
TOTAL					1	

SEEDING & MULCHING

SHEET	FROM STATION	TO STATION	LOCATION	SIDE	MULCHING ACRE	SEEDING COOL SEASON GRASSES ACRE	REMARKS
46	3+62.00	4+01.80	HOLMES ST.	--	0.5	0.5	
47	7+83.44	8+20.00	HOLMES ST.	--	0.5	0.5	
TOTAL					1.0	1.0	

CONCRETE CURB

SHEET	FROM STA	TO STA	SIDE	LOCATION	INTEGRAL TYPE A CURB (6") LF	LOW PROFILE TYPE E CURB LF	INTEGRAL TYPE M CURB LF	REMARKS
4	3+44.39	3+67.81	LT	HOLMES ST.	24			MATCH EXIST. SIDEWALK
6	7+92.20	8+20.00	LT	HOLMES ST.	28			
6	8+00.58	8+20.00	RT	HOLMES ST.	19			
8	34+90.20	36+19.11	LT	I-670 LANE B		130		
8	13+65.00	14+07.21	LT	I-670 LANE K		43		
8	3+03.00	3+58.62	LT	I-670 LANE J		56		
8	44+51.26	44+97.28	RT	I-670 LANE A			46	
8	44+40.56	44+48.61	RT	I-670 LANE A			8	
TOTAL					71	229	54	

PERMANENT SLOPE PROTECTION

SHEET	FROM STATION	TO STATION	LOCATION	AREA SF	DEPTH FT	ROCK FILL: FURNISHING TYPE 2 ROCK BLANKET CY	ROCK FILL: PLACING TYPE 2 ROCK BLANKET CY	PERM. EROSION CONTROL GEOTEXTILE SY	REMARKS
47	7+23.43	8+11.31	HOLMES ST.	3020	2	224	224	336	
46	3+69.48	4+38.57	HOLMES ST.	866	2	64	64	96	
TOTAL						288	288	432	

FRAME AND GRATE REPLACEMENT

SHEET	STR. ID	LOCATION	STA	OFFSET FT	SIDE	GRATE SIZE	INLET TYPE	CURVED VANE GRATE & FRAME EA	REMARKS
8	002	EB I-670 (LANE A)	44+67.86	27.00	LT.	2'x2'	A	1	REMOVE AND REPLACE FRAME & GRATE ON EXISTING INLET
8	003	EB I-670 (LANE A)	44+49.94	36.27	RT.	2'x2'	A	1	REMOVE AND REPLACE FRAME & GRATE ON EXISTING INLET
TOTAL								2	

2512 FRAME AND GRATES REPLACEMENT

SHEET	STR. ID	LOCATION	STA	OFFSET FT	SIDE	FRAME EA	GRATES EA	QUANTITY EA	REMARKS
4	001	HOLMES ST.	3+57.93	19.95	LT.	1	2	1	SEE JSP "2512 FRAME AND GRATES REPLACEMENT"
TOTAL								1	

SUMMARY OF QUANTITIES
SHEET 3 OF 6

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
PROFESSIONAL ENGINEER
5/6/25

DATE PREPARED 5/6/2025
ROUTE HOLMES | STATE MO
DISTRICT KC | SHEET NO. 3
COUNTY JACKSON
JOB NO. JKU0024
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9599

DESCRIPTION | DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

PAVEMENT MARKING - HOLMES STREET

SHEET	FROM STA	TO STA	LOCATION	SIDE	STANDARD WATERBORNE PAVEMENT MARKING PAINT, TYPE P BEADS TYPE P BEADS 4" INTER. WHITE, LF	4" SOLID WHITE, LF	4" SOLID YELLOW, LF	24" SOLID YELLOW, LF	PREFORMED THERMOPLASTIC 24" SOLID WHITE LF	PREFORMED THERMOPLASTIC 30" WHITE MIDBLOCK EA	BIKE SYMBOL EA	PAVEMENT MARKING REMOVAL LF	REMARKS
56	3+51.92	3+85.40	HOLMES ST.	LT. & RT.						10			
56	3+61.05	3+87.93	HOLMES ST.	LT. & RT.					42				STOP BAR
56	3+70.00	8+80.00	HOLMES ST.	LT. & RT.		510							
56	3+79.35	8+80.00	HOLMES ST.	--	125								
56	3+88.70	8+80.00	HOLMES ST.	RT.			491						
57	8+20.00	8+80.00	HOLMES ST.	RT.				51					
57	8+20.00	8+80.00	HOLMES ST.	LT. & RT.								45	
57	8+70.35	--	HOLMES ST.	LT.							1		
TC	1+00.00	3+10.00	14TH ST.	LT. & RT.	110							110	
SUBTOTAL					235	510	491	51	42	10	1	155	
TOTAL					745		491	51	42	10	1	155	

PAVEMENT MARKING - I-670 AND RAMPS

SHEET	FROM STA	TO STA	LOCATION	SIDE	STANDARD WATERBORNE PAVEMENT MARKING PAINT TYPE L BEADS 6" WHITE LF	6" INTER. WHITE LF	12" WHITE LF	STANDARD WATERBORNE PAVEMENT MARKING PAINT TYPE P BEADS 24" WHITE LF	PAVEMENT MARKING REMOVAL LF	REMARKS
57	44+40.56	44+48.61	I-670 LANE A	RT	8					
57	44+51.26	45+03.77	I-670 LANE A	RT	52					
30	38+39.00	46+05.00	I-670 LANE A	RT	116				116	STAGE 1 TRAFFIC CONTROL RESTORATION
32	31+54.52	33+38.82	I-670 LANE B	LT & RT			345	5	350	STAGE 2 TRAFFIC CONTROL (GORE) RESTORATION
32	34+05.47	37+02.20	I-670 LANE B	LT		75			75	STAGE 2 TRAFFIC CONTROL RESTORATION
32		32+91.62	I-670 LANE B	RT		592			592	STAGE 2 TRAFFIC CONTROL RESTORATION. STARTS AT THE PASEO
32		16+21.33	I-670 LANE K		639	99		238	976	STAGE 2 TRAFFIC CONTROL RESTORATION
32	45+75.83	47+51.20	I-670 LANE A	LT			176	37	213	STAGE 2 TRAFFIC CONTROL (GORE) RESTORATION
32	4+25.94	7+74.05	I-670 LANE J	RT	219		155		374	STAGE 2 TRAFFIC CONTROL (GORE) RESTORATION
SUBTOTAL					1034	766	676	280	2696	
TOTAL					1800		676	280	2696	

TEMPORARY PAVEMENT MARKING

SHEET	FROM CENTERLINE	FROM STA	TO CENTERLINE	TO STA	LOCATION	4 IN. TEMPORARY PAVEMENT MARKING PAINT WHITE LF	YELLOW LF	TEMPORARY TURN ARROWS EA	PAVEMENT MARKING REMOVAL LF	REMARKS
30	I-670 LANE B	31+34		33+02	I-670 WB	170			170	STAGE 1
30	I-670 EB	38+39	I-670 LANE A	46+05	I-670 EB	796			796	STAGE 1
32	I-670 LANE B	31+00		38+00	I-670 WB		752		752	STAGE 2
32	I-670 LANE B	31+00		32+92	I-670 WB	240			240	STAGE 2
33	I-670 LANE B		I-670 LANE B	32+92	I-670 WB	242	2676		2918	STAGE 2. STARTS AT THE PASEO
32	I-670 LANE K			16+88	I-70 EB TO I-670 WB RAMP	1245			1245	STAGE 2
32	I-670 LANE K			16+88	I-70 EB TO I-670 WB RAMP		856		856	STAGE 2
32	I-670 EB	40+46	I-670 LANE J	7+74	I-670 EB TO I-35 NB RAMP		763		763	STAGE 2
32	I-670 LANE J	5+20		7+74	I-670 EB TO I-35 NB RAMP	265			265	STAGE 2
32	I-670 LANE A	46+70		48+00	I-670 EB	130			130	STAGE 2
44	HOLMES ST.	10+06		10+50	HOLMES ST.			4		HOLMES ST. CLOSURE
44	I-670 LANE B	38+15		41+38	14TH ST.	309			309	HOLMES ST. CLOSURE
44	14TH ST.	1+00		4+37	14TH ST.	555			555	HOLMES ST. CLOSURE
SUBTOTAL						3952	5047	4	8999	
TOTAL						8999		4	8999	

SUMMARY OF QUANTITIES
SHEET 4 OF 6

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED 3/28/2025
ROUTE HOLMES | STATE MO
DISTRICT KC | SHEET NO. 3
COUNTY JACKSON
JOB NO. JKU0024
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9599

DESCRIPTION
DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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LIGHT POLE AND PULL BOX QUANTITY TABLE

ID	STATION	OFFSET	MODOT PULL BOX, PREFORMED CLASS 2	KCMO JUNCTION BOX, TYPE 1 (12"x12")	KCMO JUNCTION BOX, TYPE 2 (12"x18")	KCMO STREET LIGHTING POLE, 35' MTG. HT., 6' ARM (BLACK)	KCMO POLE FOUNDATION	KCMO CABLE RETAINER ASSEMBLY	KCMO TYPE D LED LUMINAIRE (BLACK)	KCMO RELOCATED POLE	REMARKS
SBD1562	4+36	LT. ON BRIDGE BARRIER				1		1	1		SEE NOTES (1) & (2)
SBD1551	5+76	RT. ON BRIDGE BARRIER				1		1	1		SEE NOTES (1) & (2)
SBD1563	7+22	LT. ON BRIDGE BARRIER				1		1	1		SEE NOTES (1) & (2)
SBD3810	4+07	28' RT. HOLMES ST.					1	1		1	SEE NOTE (3)
JB#1	8+07	29' RT. HOLMES ST.			1						SEE NOTE (4)
JB#2	8+07	28' LT. HOLMES ST.		1							SEE NOTE (4)
PB#3	NA	EB 1-670 (LANE A)	1								SEE NOTE (4)
TOTALS			1	1	1	3	1	4	3	1	

NOTES:
(1) SEE BRIDGE PLANS FOR EXACT LOCATION OF BRIDGE BLISTER.
(2) POLE AND BRACKET ARM SHALL BE GALVANIZED STEEL. POLE, BRACKET ARM AND LUMINAIRE SHALL BE BLACK IN COLOR.
(3) RELOCATE EXISTING LIGHT STANDARD ON A NEW FOUNDATION.
(4) EXACT LOCATION OF PULL BOXES AND JUNCTION BOXES TO BE DETERMINED IN THE FIELD.
(5) SEE REMOVAL OF IMPROVEMENTS TABLE FOR CITY LIGHT POLE REMOVALS.

LIGHTING CONDUIT & CABLE QUANTITIES

CONDUIT							CABLE							
FROM	TO	CENTER TO CENTER DISTANCE (FT)	TRENCHING TYPE II (LF)	TRENCH 2" (LF)	ON STRUCTURE (1) 2" (LF)	REMARKS	MODOT CABLE, 8 AWG 1 CONDUCTOR (LF)	MODOT WIRE, 8 AWG, BARE NEUTRAL (LF)	KCMO CABLE, 8 AWG 1 CONDUCTOR (LF)	KCMO CABLE, 8 AWG, GROUND (LF)	KCMO CABLE, 6 AWG 1 CONDUCTOR (LF)	KCMO CABLE, 6 AWG, GROUND (LF)	KCMO CABLE, 10 AWG, 1 CONDUCTOR, POLE AND BRACKET (LF)	REMARKS
CITY LIGHTING														
POLE SBD1562	POLE SBD1563	286			286						592	296	120	
POLE SBD1563	JB#2	95	20	20	75	TRANSITION FROM STRUCTURE TO EARTH					206	103	120	
JB#2	JB#1	60	60	60							132	66		
JB#1	EX POLE SBD1552	60	10	10		CONNECTION TO EXISTING CONDUIT					132	66		
JB#1	POLE SBD1551	233	10	10	223	TRANSITION FROM STRUCTURE TO EARTH					482	241	120	
EXJB	REL POLE SBD3810	20	20	20		SEE NOTE (2)			90	30				
MODOT LIGHTING														
EX POLE 411C	EX POLE 412C	175	175	175		INSTALL BETWEEN RETAINING WALL AND ABUTMENT	362	181						CKT. 400C
EX POLE 307C	EX PULL BOX #2	360	360	360			732	366						CKT. 300C
EX PULL BOX #1	PULL BOX #3	155	155	155			1240	161						CKTS. 100C,200C,300C,400C
	SUBTOTALS						2334	708	90	30	1544	772	360	
	SPLICING & SNAKING						117	35	5	2	77	39	18	
	TOTALS		810	810	584		2334	708	90	30	1544	772	360	
	PAY TOTALS		810	810	NOTE (1)		2450	740	95	30	1620	810	380	

NOTES:
(1) CONDUIT INSTALLED INSIDE TRAFFIC BARRIER AND IS PAID UNDER BRIDGE LUMP SUM PAY ITEM "CONDUIT SYSTEM ON STRUCTURE" .
(2) CONDUIT IS LOCATED NEAR UNDERGROUND PRIMARY DUCTBANK. COORDINATE INSTALLATION WITH EVERGY.

SUMMARY OF QUANTITIES
SHEET 5 OF 6

STATE OF MISSOURI
PAUL D. HUNTER
NUMBER E-69901
REGISTERED PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED 3/28/2025
ROUTE HOLMES | STATE MO
DISTRICT KC | SHEET NO. 3
COUNTY JACKSON
JOB NO. JKU0024
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9599

DESCRIPTION | DATE

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

HNTB
715 KIRK DRIVE
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TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

EFFECTIVE: 04-01-2024

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
WARNING SIGNS								
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT)
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
WO1-8	18X24	3.00						CHEVRON (SYMBOL)
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00						BE PREPARED TO STOP
WO3-5	48X48	16.00						SPEED LIMIT AHEAD
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00	7	112	1	16	6A	MERGE (LEFT)
WO4-1aR	48X48	16.00	3	48			6B	MERGE (RIGHT)
WO4-3R	48X48	16.00	1	16			61	ADDED LANE (RIGHT)
WO5-1	48X48	16.00	1	16			43	ROAD/BRIDGE/RAMP NARROWS
WO5-5	48X48	16.00						NARROW LANES
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
WO8-1	48X48	16.00						BUMP
WO8-2	48X48	16.00						DIP
WO8-3	48X48	16.00						PAVEMENT ENDS
WO8-4	48X48	16.00						SOFT SHOULDER
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
WO8-6	48X48	16.00						TRUCK CROSSING
WO8-6c	48X48	16.00						TRUCK ENTRANCE
WO8-7	36X36	9.00						LOOSE GRAVEL
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL
WO8-9	48X48	16.00						LOW SHOULDER
WO8-11	48X48	16.00						UNEVEN LANES
WO8-12	48X48	16.00						NO CENTER LINE
WO8-15	48X48	16.00						GROOVED PAVEMENT
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
WO12-2x	24X18	3.00						LOW CLEARANCE (PLAQUE)
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
WO12-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
WO12-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
WO13-1	30X30	6.25	3	18.75			44	ADVISORY SPEED (PLAQUE)
WO16-2	30X24	5.00						XXX FEET (PLAQUE)
WO16-3	30X24	5.00						X MILE (PLAQUE)
WO20-1	48X48	16.00	28	448	3	48	2	ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00	5	80			18	DETOUR AHEAD
WO20-3	48X48	16.00	15	240			20	ROAD CLOSED AHEAD
WO20-4	48X48	16.00						ONE LANE ROAD AHEAD
WO20-5	48X48	16.00	9	144	2	32	5	RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-5a	48X48	16.00	4	64			5A	2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
WO20-6a	48X48	16.00	8	128	1	16	6	RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00						FLAGGER (SYMBOL)
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00	1	16	1	16	21	SHOULDER WORK / SHOULDER WORK AHEAD
WO22-1	48X48	16.00						BLASTING ZONE AHEAD
WO22-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
WO22-3	42X36	10.50						END BLASTING ZONE
GO22-1	21X15	2.19	2	4.38				WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00	2	24			49	GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00	6	72			60	EXIT CLOSED
GO20-1	60X24	10.00	4	40			1	ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00	6	48			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	14	84	3	18	54	WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00	1	3			52	END DETOUR
MO4-9L	48X36	12.00	4	48			60A	DETOUR (LEFT)
MO4-9R	48X36	12.00	5	60			60B	DETOUR (RIGHT)
MO4-9P	48X12	4.00						STREET NAME (PLAQUE)
MO4-9bL	30x24	5.00	4	20			A	DETOUR ARROW (LEFT)
MO4-9bR	30X24	5.00	2	10			B	DETOUR ARROW (RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TRI.	6.93						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R2-1	36X48	12.00	11	132	3	36	25	SPEED LIMIT 45
R2-1	36X48	12.00	14	168	3	36	4	SPEED LIMIT 35
R3-1	48X48	16.00	2	32			30	NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00	2	32			31	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	4	8			58	SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00	15	150			29	ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50						ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00						FINE SIGN
CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)
MISCELLANEOUS SIGNS								
CONST-5	48X36	12.00	1	12				POINT OF PRESENCE
CONST-5	96X48	32.00	2	64				POINT OF PRESENCE
CONST-8	48X36	12.00	4	48				WORK ZONE NO PHONE ZONE

	TOTAL
616-10.05 CONSTRUCTION SIGNS	2391
616-10.10 RELOCATED SIGNS	218

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009	5	IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020	5	REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6123001		TRUCK MOUNTED ATTENUATOR (TMA)
6161008	7	ADVANCED WARNING RAIL SYSTEM
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	524	CHANNELIZER (TRIM LINE)
6161030	43	TYPE III MOVEABLE BARRICADE
6161033	23	DIRECTION INDICATOR BARRICADE
6161040	8	FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161055	23	SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	12	CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
6173600D	2152	TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A	1	TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A	1099	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
6169902	4	ADA COMPLIANT MOVEABLE BARRICADE

SUMMARY OF QUANTITIES
SHEET 6 OF 6

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED 3/28/2025
ROUTE HOLMES | STATE MO
DISTRICT KC | SHEET NO. 3
COUNTY JACKSON
JOB NO. JKU0024
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9599

DESCRIPTION | DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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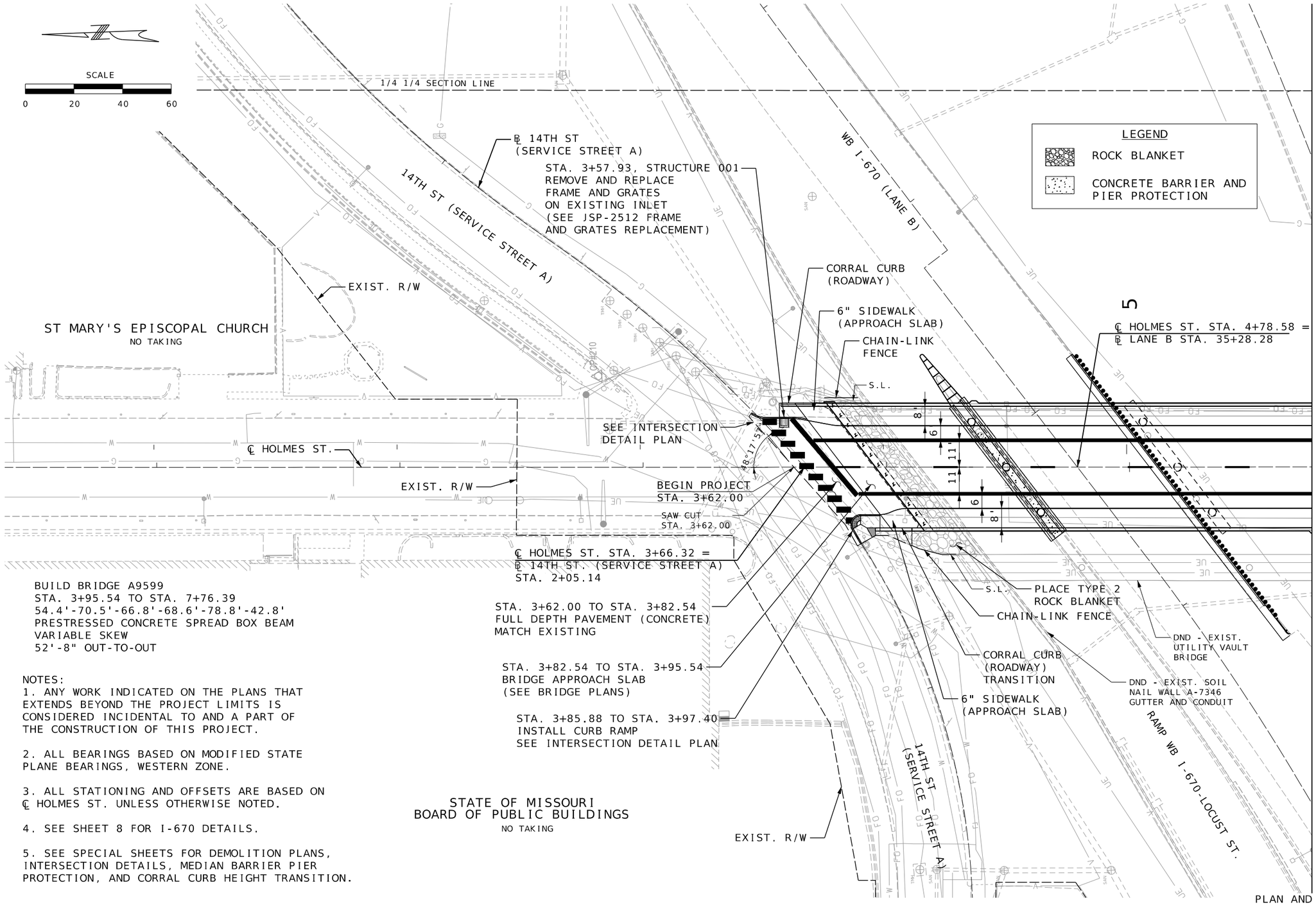

BUILD BRIDGE A9599
STA. 3+95.54 TO STA. 7+76.39
54.4'-70.5'-66.8'-68.6'-78.8'-42.8'
PRESTRESSED CONCRETE SPREAD BOX BEAM
VARIABLE SKEW
52'-8" OUT-TO-OUT

NOTES:

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

2. ALL BEARINGS BASED ON MODIFIED STATE PLANE BEARINGS, WESTERN ZONE.

3. ALL STATIONING AND OFFSETS ARE BASED ON ℄ HOLMES ST. UNLESS OTHERWISE NOTED.

4. SEE SHEET 8 FOR I-670 DETAILS.

5. SEE SPECIAL SHEETS FOR DEMOLITION PLANS, INTERSECTION DETAILS, MEDIAN BARRIER PIER PROTECTION, AND CORRAL CURB HEIGHT TRANSITION.

PLAN AND PROFILE
HOLMES ST.
SHEET 1 OF 5

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	4
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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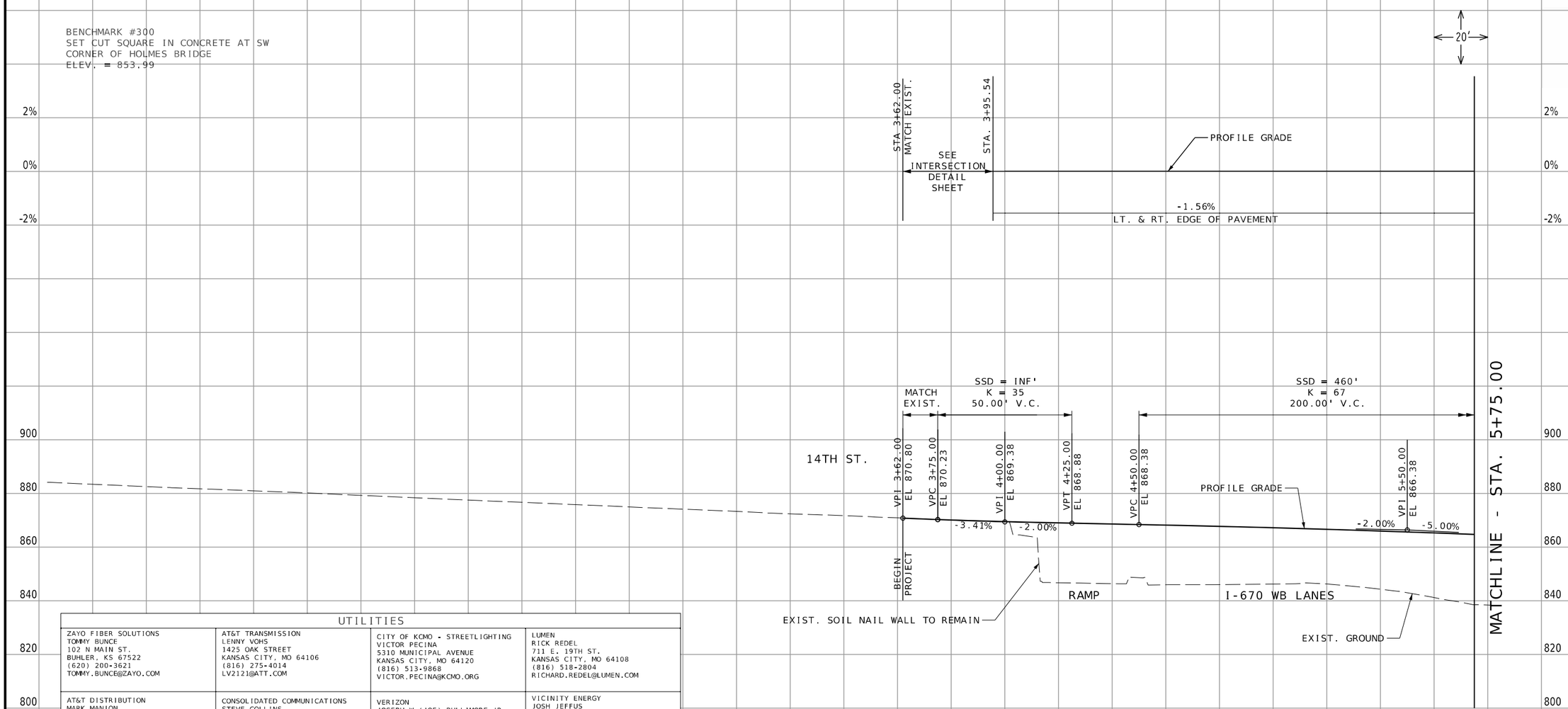
BENCHMARK #300
SET CUT SQUARE IN CONCRETE AT SW
CORNER OF HOLMES BRIDGE
ELEV. = 853.99



UTILITIES

ZAYO FIBER SOLUTIONS TOMMY BUNCE 102 N MAIN ST. BUHLER, KS 67522 (620) 200-3621 TOMMY.BUNCE@ZAYO.COM	AT&T TRANSMISSION LENNY VOHS 1425 OAK STREET KANSAS CITY, MO 64106 (816) 275-4014 LV2121@ATT.COM	CITY OF KCMO - STREETLIGHTING VICTOR PECINA 5310 MUNICIPAL AVENUE KANSAS CITY, MO 64120 (816) 513-9868 VICTOR.PECINA@KCMO.ORG	LUMEN RICK REDEL 711 E. 19TH ST. KANSAS CITY, MO 64108 (816) 518-2804 RICHARD.REDEL@LUMEN.COM
AT&T DISTRIBUTION MARK MANION 2121 E 63RD STREET KANSAS CITY MO 64160 (816) 772-0267 (816) 214-2322 MM256T@ATT.COM	CONSOLIDATED COMMUNICATIONS STEVE COLLINS (816) 679-5510 (816) 779-4915 STEVE.COLLINS@CONSOLIDATED.COM	VERIZON JOSEPH W (JOE) BULLIMORE JR 10740 NALL AVE OVERLAND PARK, KANSAS 66211 (913)609-1024 JOSEPH.BULLIMORE@ONE.VERIZON.COM	VICINITY ENERGY JOSH JEFFUS 115 GRAND BOULEVARD KANSAS CITY, MO 64106 (816)889-4900 (816)889-4915 JOSH.JEFFUS@VICINITYENERGY.US
EVERGY TRANSMISSION AARON LAMMERS (816) 652-1411 (913) 253-6835 AARON.LAMMERS@EVERGY.COM	GOOGLE FIBER LAUREN MARCUCCI 908 BROADWAY BLVD. 6TH FLOOR KANSAS CITY, MO 64105 (913) 663-1900 LMARCUCCI@GOOGLE.COM	COGENT COMMUNICATIONS JASON CANTRELL (816)217-8996 JCANTRELL@COGENTCO.COM	UNITE PRIVATE NETWORKS (UPN) BRANDON MYER (816) 206-4257 BRANDON.MYER@UPNFIBER.COM
SPIRE RICHI GARCIA 3025 SE CLOVER DRIVE LEES SUMMIT, MO 64082 (816) 507-0713 RICHI.GARCIA@SPIREENERGY.COM	CITY OF KCMO- WATER SERVICES REZA ZONNOOZ 4800 E. 63RD ST. KANSAS CITY, MO 64130 (816) 513-0309 REZA.ZONNOOZ@KCMO.ORG	CHARTER COMMUNICATIONS ALEX GULAK 8221 W 119TH ST. OVERLAND PARK, KS 66213 (816) 222-5485 ALEXEY.GULAK@CHARTER.COM	EVERFAST FIBER NETWORKS CLARENCE GRIFFIN (913) 322-9619 (816) 678-9793 CLARENCE.GRIFFIN@EVERFASTFIBER.COM
CITY OF KCMO-SEWER KARINE PAPIKIAN 4800 E. 63RD ST. KANSAS CITY, MO 64130 (816) 513-0300 KARINE.PAPIKIAN@KCMO.ORG	CITY OF KCMO-TRAFFIC SAM AKULA (816) 513-1313 SAM.AKULA@KCMO.ORG	CITY OF KCMO-SEWER FATY GAYE 4800 E. 63RD ST. KANSAS CITY, MO 64130 (816) 513-1313 MAME.GAYE@KCMO.ORG	CITY OF KCMO-SEWER PAUL SOUTH 4800 E 63RD ST. KANSAS CITY, MO 64130 (816) 513-0263 PAUL.SOUTH@KCMO.ORG

PLAN AND PROFILE
HOLMES ST.
SHEET 2 OF 5

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	5
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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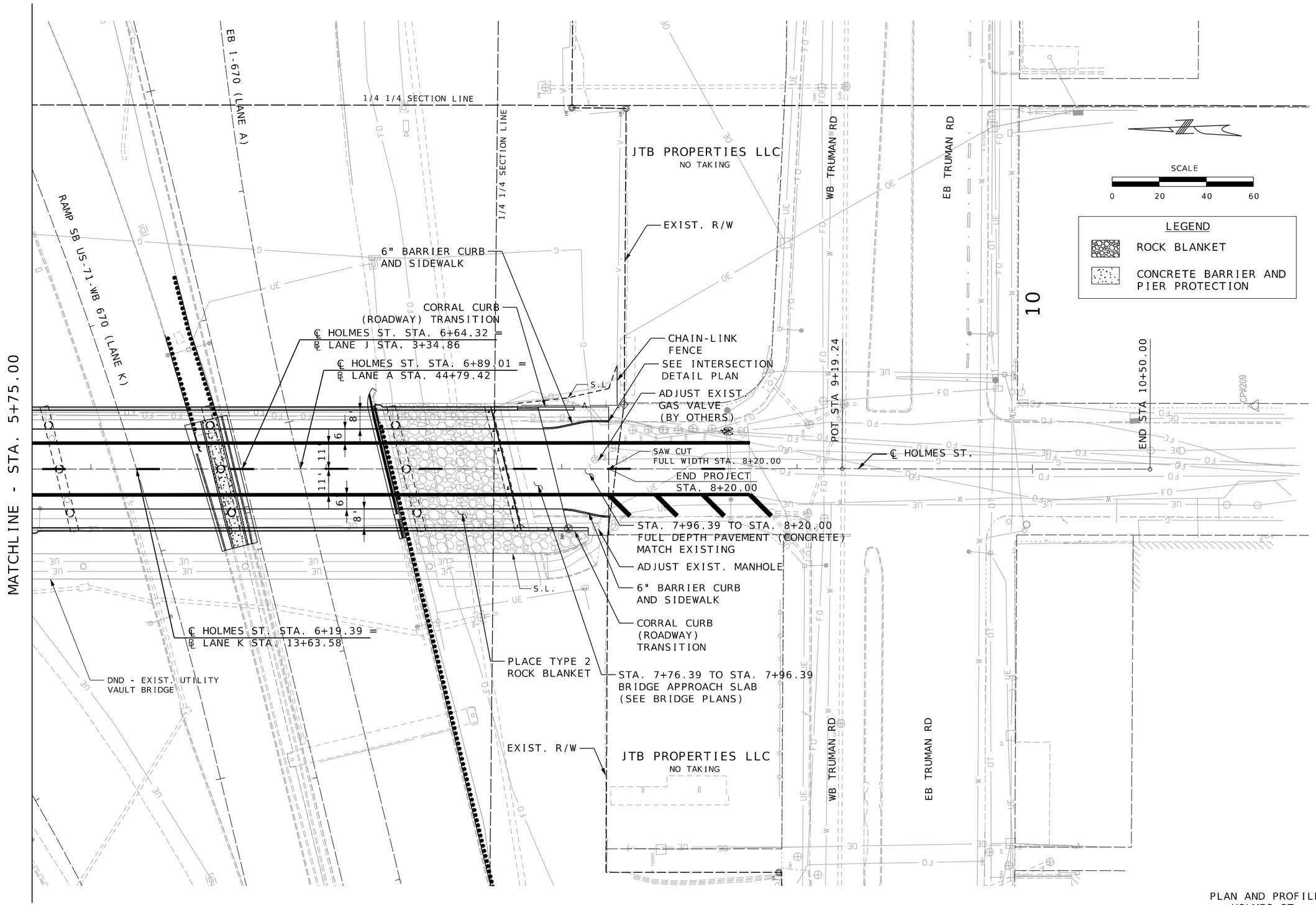

PLAN AND PROFILE
HOLMES ST.
SHEET 3 OF 5

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	6
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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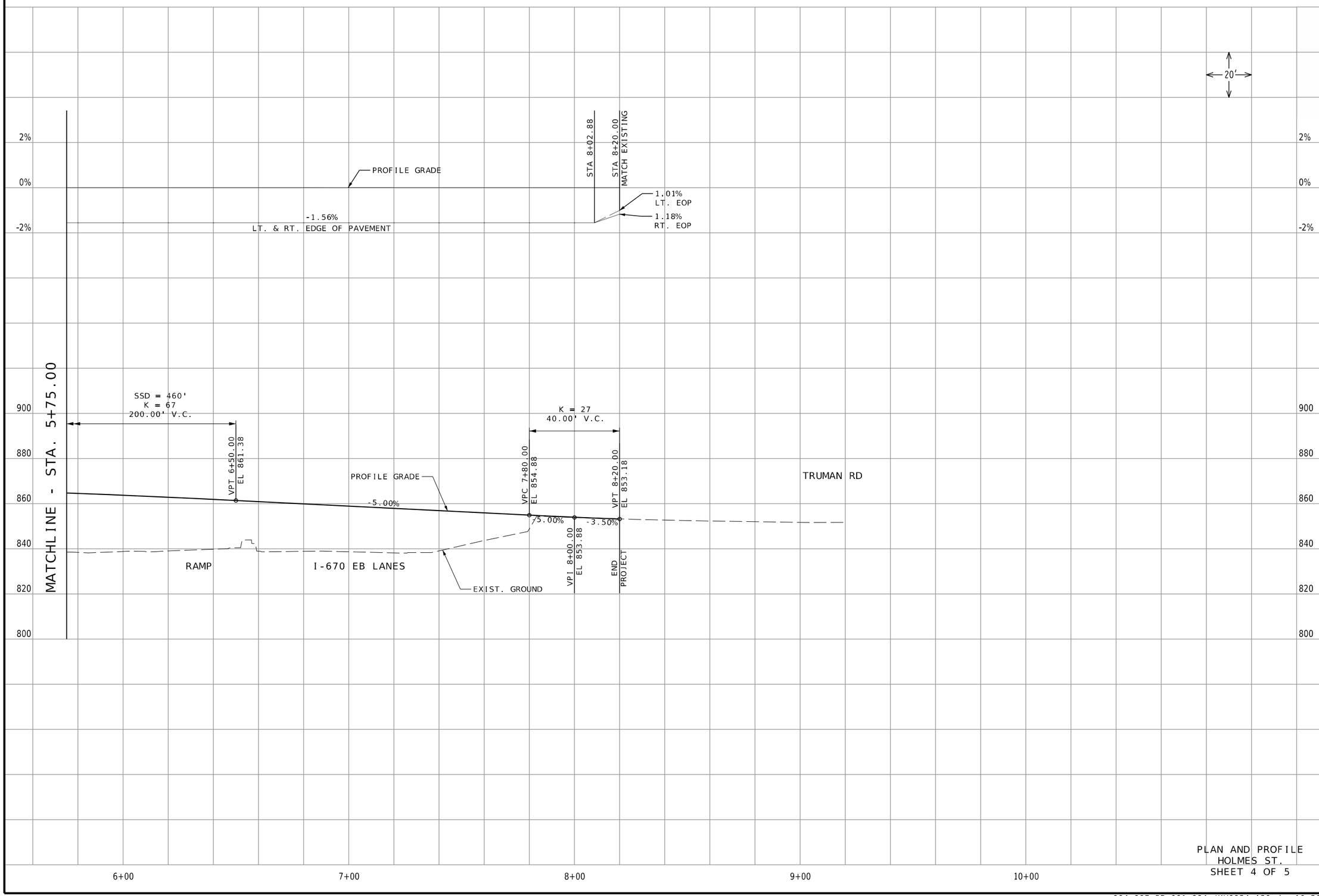

PLAN AND PROFILE
HOLMES ST.
SHEET 4 OF 5

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	7
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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SCALE

0 20 40 60

CURVE 1 WB I-670 (LANE B)	
PI	32+47.06
PC	31+45.59
PT	33+48.34
Δ	6°4'57.0" (LT)
D	3°00'0.0"
L	202.75' (ARC)
T	101.47'
R	1,909.86'

CURVE 2 RAMP SB US-71-WB 670 (LANE K)	
PI	13+29.96
PC	11+77.31
PT	14+81.95
Δ	9°8'21.0" (RT)
D	3°00'0.0"
L	304.64' (ARC)
T	152.64'
R	1,909.86'

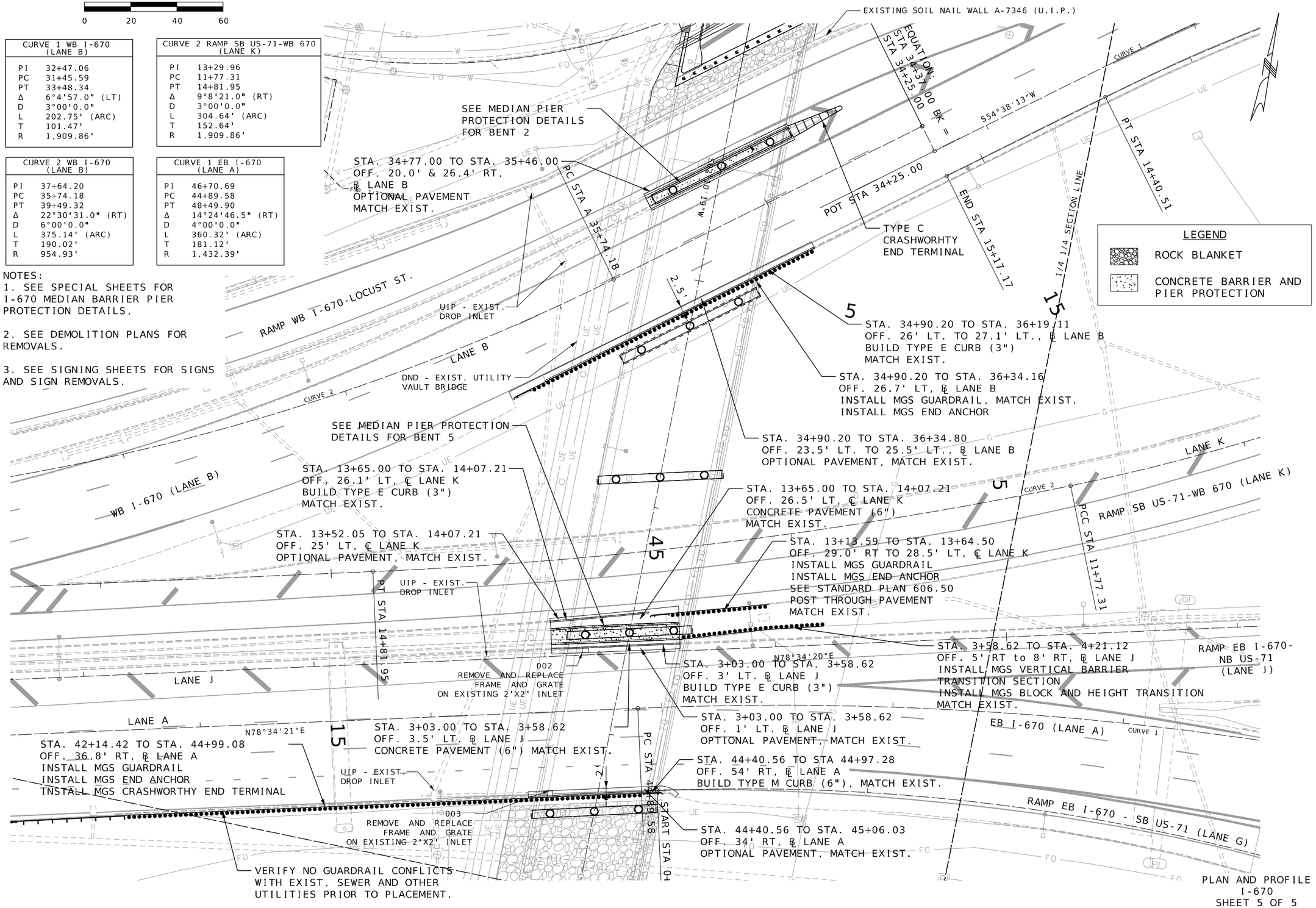
CURVE 2 WB I-670 (LANE B)	
PI	37+64.20
PC	35+74.18
PT	39+49.32
Δ	22°30'31.0" (RT)
D	6°00'0.0"
L	375.14' (ARC)
T	190.02'
R	954.93'

CURVE 1 EB I-670 (LANE A)	
PI	46+70.69
PC	44+89.58
PT	48+49.90
Δ	14°24'46.5" (RT)
D	4°00'0.0"
L	360.32' (ARC)
T	181.12'
R	1,432.39'

NOTES:
1. SEE SPECIAL SHEETS FOR I-670 MEDIAN BARRIER PIER PROTECTION DETAILS.

2. SEE DEMOLITION PLANS FOR REMOVALS.

3. SEE SIGNING SHEETS FOR SIGNS AND SIGN REMOVALS.



PLAN AND PROFILE
I-670
SHEET 5 OF 5

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	
3/28/2025	
ROUTE HOLMES	STATE MO
DISTRICT KC	SHEET NO. 8
COUNTY JACKSON	
JOB NO. JKU0024	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A9599	

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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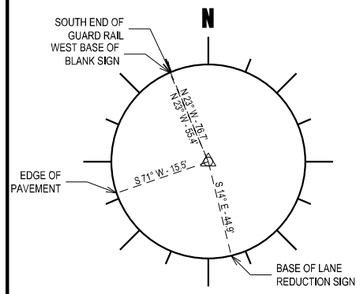
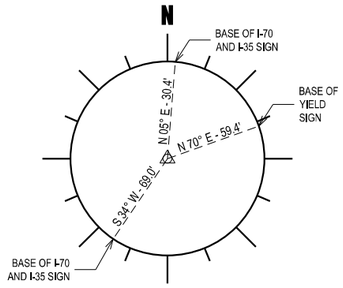
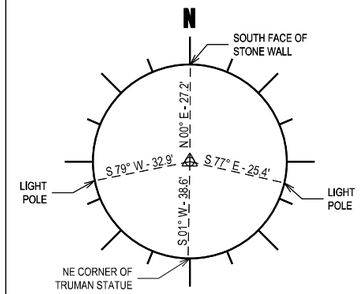


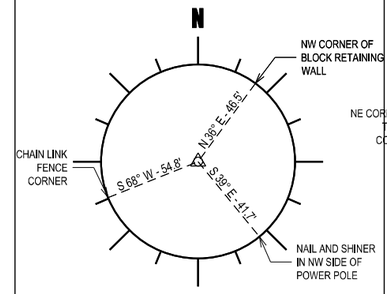
CP#100 - SET 5/8" REBAR WITH 2.5"
ALUMINUM CONTROL POINT CAP
N: 1067726.11 E: 2768464.12
ELEVATION=890.77
I-70



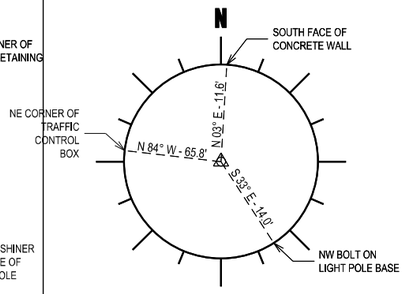
CP#101 - SET 5/8" REBAR WITH 2.5"
ALUMINUM CONTROL POINT CAP
N: 1071183.55 E: 2769067.25
ELEVATION=847.36
TROOST



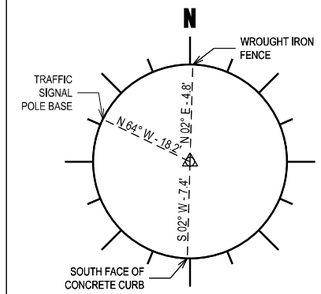
CP#102 - SET 5/8" REBAR WITH 2.5"
ALUMINUM CONTROL POINT CAP
N: 1066528.64 E: 2770737.52
ELEVATION=837.49
I-70



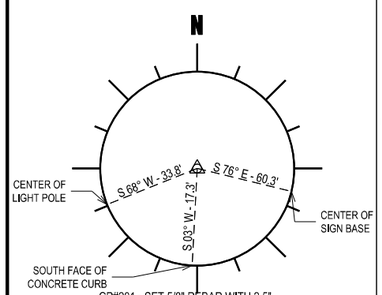
CP#103 - SET 5/8" REBAR WITH 2.5"
ALUMINUM CONTROL POINT CAP
N: 1065125.56 E: 2768429.13
ELEVATION=805.22
US-71



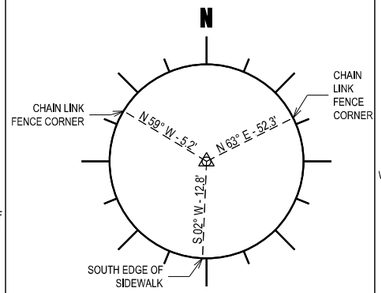
CP#104 - SET 5/8" REBAR WITH 2.5"
ALUMINUM CONTROL POINT CAP
N: 1066714.33 E: 2765095.84
ELEVATION=857.18
I-670



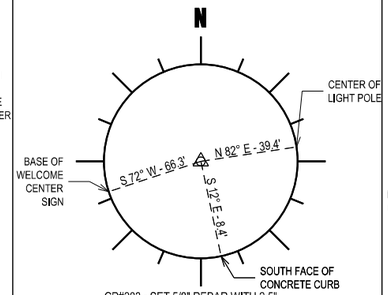
CP#200 - SET 5/8" REBAR WITH 2.5"
ALUMINUM CONTROL POINT CAP
N: 1066655.40 E: 2765667.76
ELEVATION=838.41
TRUMAN



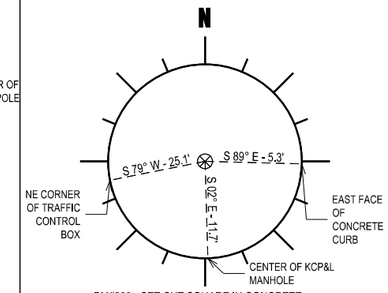
CP#201 - SET 5/8" REBAR WITH 2.5"
ALUMINUM CONTROL POINT CAP
N: 1066641.65 E: 2767188.92
ELEVATION=857.05
WB TRUMAN
STA. 4+26.58, 29.05'



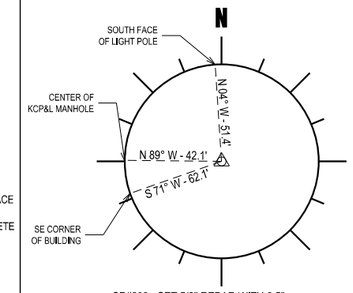
CP#202 - SET 5/8" REBAR WITH 2.5"
ALUMINUM CONTROL POINT CAP
N: 1066574.97 E: 2768567.69
ELEVATION=841.11
WB TRUMAN



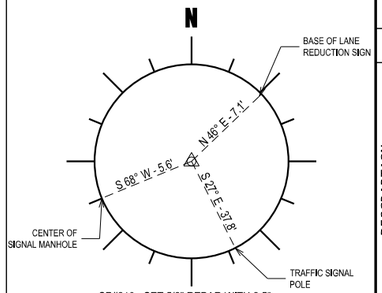
CP#203 - SET 5/8" REBAR WITH 2.5"
ALUMINUM CONTROL POINT CAP
N: 1066889.49 E: 2767173.81
ELEVATION=860.51
LANE B
STA. 40+18.75, 51.44' RT.



BM#300 - SET CUT SQUARE IN CONCRETE
AT SW CORNER OF HOLMES BRIDGE
N: 1066710.49 E: 2767592.97
ELEVATION=853.99
HOLMES
STA. 8+02.89, 25.35' RT.



CP#209 - SET 5/8" REBAR WITH 2.5"
ALUMINUM CONTROL POINT CAP
N: 1066417.04 E: 2767633.97
ELEVATION=846.20
HOLMES



CP#210 - SET 5/8" REBAR WITH 2.5"
ALUMINUM CONTROL POINT CAP
N: 1067229.07 E: 2767675.50
ELEVATION=872.99
HOLMES
STA. 3+81.54, 37.46' LT.

REFERENCE POINT
SHEET 1 OF 1

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	
3/28/2025	
ROUTE	STATE
HOLMES	MO
DISTRICT	SHEET NO.
KC	9
COUNTY	
JACKSON	
JOB NO.	
JKU0024	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
A9599	

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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ALL PROJECT COORDINATES HAVE BEEN PROJECTED FROM THE MISSOURI STATE PLANE COORDINATE (SPC) SYSTEM OF 1983 USING AN AVERAGE PROJECT PROJECTION (GRID TO GROUND) FACTOR. TO GET BACK TO STATE PLANE COORDINATES MULTIPY THE PROJECT COORDINATES BY THE AVERAGE GRID FACTOR AS SHOWN IN THE "REFERENCE CONTROL INFORMATION" PORTION OF THIS TABLE.

PROJECT COORDINATE INFORMATION

COORDINATE SYSTEM	STATE PLANE, MISSOURI WEST
HORIZONTAL DATUM	NAD 1983
VERTICAL DATUM	NAVD 1988
GEOID MODEL	JACKSON COUNTY
ELEVATIONS DETERMINED BY	GPS OBSERVATIONS
PROJECT PROJECTION FACTOR	1.00009584

REFERENCE CONTROL INFORMATION

COORDINATE SYSTEM	NAD 1983
CONTROL STATION	
DESIGNATION	OPUS SOLUTION
CORS_ID	
PID	
LATITUDE	39°05'55.44416"
LONGITUDE	94°34'20.16786"
NORTHING (M)	325412.3830
EASTING (M)	843748.6870
ZONE	WEST
PROJECT AVERAGE GRID FACTOR	0.99990417

EXAMPLE OF PROJECT COORDINATE TO S.P.C.

PROJECT NORTHING X AVERAGE GRID FACTOR
= STATE PLANE NORTHING
PROJECT EASTING X AVERAGE GRID FACTOR
= STATE PLANE EASTING

EXAMPLE: CONTROL POINT #CP100
N 1067726.11 X 0.99990417 = N 1067623.79
E 2768464.12 X 0.99990417 = E 2768198.82

LINEAR UNIT CONVERSION

1 METER = 3.280833333 US SURVEY FEET (USFT)

COORDINATE POINT LISTING

SHEET NO	STATION	LOCATION	OFFSET (USFT)	MODIFIED STATE PLANE (GROUND) NORTHING (US SURVEY FT)	EASTING (US SURVEY FT)	ELEVATION (US SURVEY FT)	DESCRIPTION	GPK POINT ID
PROJECT CONTROL POINTS								
	N/A	I-70	N/A	1067726.11	2768464.12	890.77	5/8" REBAR W/ 2.5" ALUMINUM CAP	GPS #100
	N/A	TROOST	N/A	1071183.55	2769067.25	847.36	5/8" REBAR W/ 2.5" ALUMINUM CAP	GPS #101
	N/A	I-70	N/A	1066528.64	2770737.52	837.49	5/8" REBAR W/ 2.5" ALUMINUM CAP	GPS #102
	N/A	US-71	N/A	1065125.56	2768429.13	805.22	5/8" REBAR W/ 2.5" ALUMINUM CAP	GPS #103
	N/A	I-670	N/A	1066714.33	2765095.84	857.18	5/8" REBAR W/ 2.5" ALUMINUM CAP	GPS #104
	N/A	TRUMAN	N/A	1066655.40	2765667.76	838.41	SECONDARY CONTROL	GPS #200
	4+26.58	WB TRUMAN	29.05	1066641.65	2767188.92	857.05	SECONDARY CONTROL	GPS #201
	N/A	WB TRUMAN	N/A	1066574.97	2768567.69	841.11	SECONDARY CONTROL	GPS #202
	40+18.75	LANE B	51.44	1066889.49	2767173.81	860.51	SECONDARY CONTROL	GPS #203
	N/A	HOLMES	N/A	1066417.04	2767633.97	846.20	SECONDARY CONTROL	GPS #209
	3+81.54	HOLMES	37.46 LT.	1067229.07	2767675.50	872.99	SECONDARY CONTROL	GPS #210
	8+02.89	HOLMES	25.35	1066710.49	2767592.97	853.99	BENCHMARK #300	BM #300
ALIGNMENTS								
HOLMES ST.								
	0+00.00			1067511.84	2767648.74		POB	HOLMES ST.
	9+19.25			1066593.25	2767613.90		PI	HOLMES ST.
	10+50.00			1066462.60	2767608.70		POE	HOLMES ST.
14TH ST.								
	0+00.00			1067083.82	2767443.86		POB	14TH ST.
	1+10.78			1067078.91	2767554.54		PI	14TH ST.
	2+11.41			1067149.73	2767639.72		PCC	14TH ST.
	3+40.62			1067242.80	2767728.96		PT	14TH ST.
	3+50.99			1067251.04	2767735.25		PCC	14TH ST.
	4+44.29			1067325.22	2767791.83		PI	14TH ST.
	5+35.92			1067377.35	2767869.20		POE	14TH ST.
I-670 LANE B								
	31+00.00			1067257.41	2767995.95		POB	LANE B
	31+22.80			1067247.47	2767975.43		PI	LANE B
	31+45.59			1067236.31	2767955.54		PT	LANE B
	32+47.06			1067186.69	2767867.03		PI	LANE B
	33+48.34			1067127.96	2767784.28		PT	LANE B
	34+25.00			1067083.59	2767721.77		PI	LANE B
	34+37.00			1067093.38	2767714.82		PI, STN. EQ.: STA 34+37.00 BK = 34+25.00 AHD	LANE B
	35+74.18			1067007.04	2767593.17		PI	LANE B
	37+64.20			1066897.06	2767438.20		PI	LANE B
	39+49.32			1066854.79	2767252.94		PT	LANE B
	42+23.19			1066793.86	2766985.94		POE	LANE B
I-670 LANE A								
	42+00.00			1066767.96	2767348.74		POB	LANE A
	44+89.58			1066825.33	2767632.58		PC	LANE A
	46+70.69			1066861.21	2767810.11		PI	LANE A
	48+49.90			1066851.78	2767990.98		POE	LANE A
I-670 LANE J								
	0+49.63			1066791.48	2767343.99		POB	LANE J
	7+74.050			1066935.01	2768054.05		POE	LANE J
I-670 LANE K								
	9+62.28			1067048.95	2767992.74		POB	LANE K
	10+70.33			1066987.68	2767903.73		PI	LANE K
	11+77.31			1066949.72	2767802.57		PT	LANE K
	13+29.96			1066896.10	2767659.65		PI	LANE K
	14+81.95			1066865.85	2767510.04		PT	LANE K
	18+83.43			1066786.31	2767116.51		PC	LANE K
	19+22.66			1066778.54	2767078.07		PI	LANE K
	19+61.88			1066772.09	2767039.37		POE	LANE K
I-670 EB								
	38+39.71			1066727.94	2766989.25		POB	EB
	42+00.00			1066799.32	2767342.40		POE	EB

COORDINATE POINT
SHEET 1 OF 1

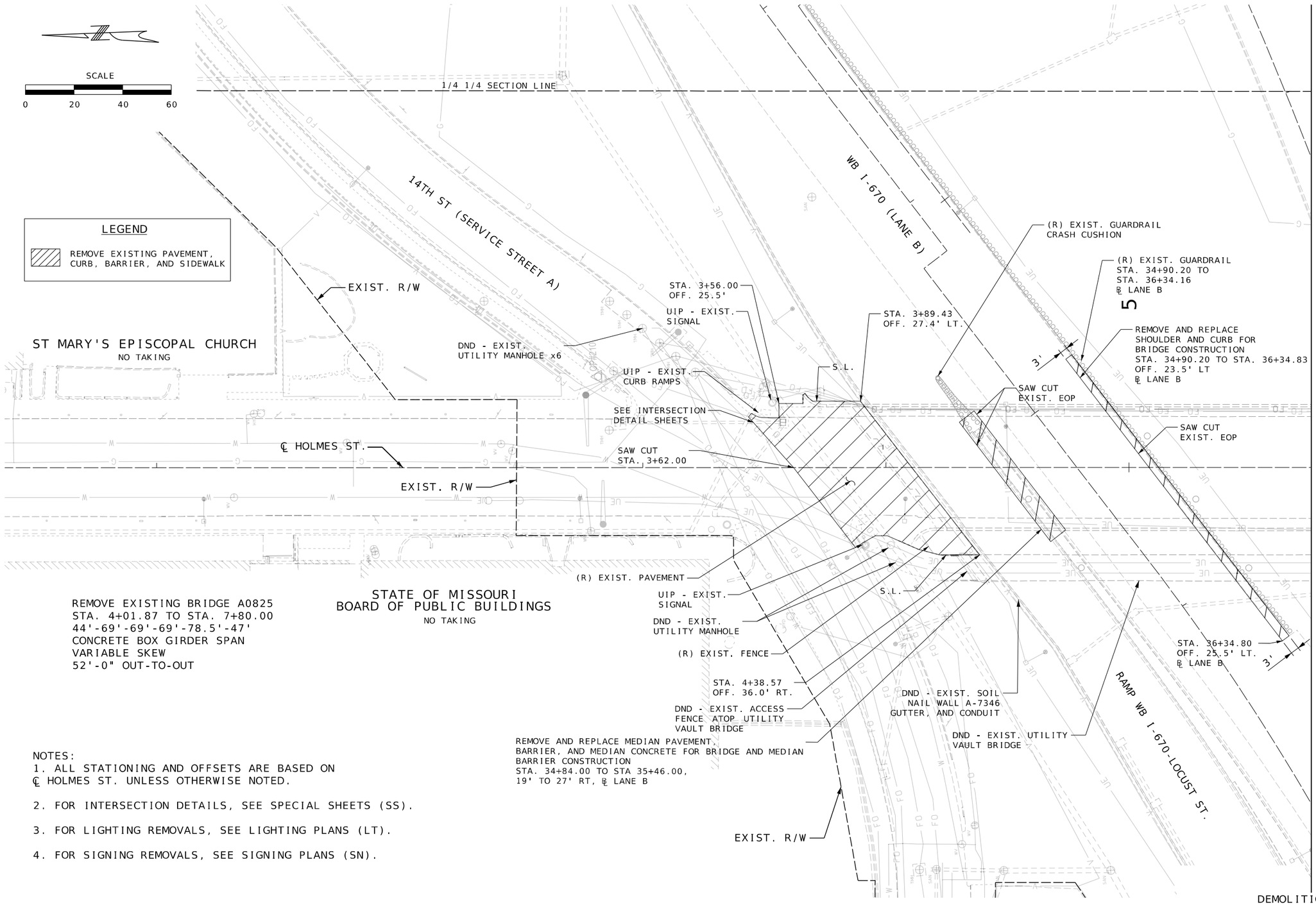
STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED 3/28/2025
ROUTE HOLMES | STATE MO
DISTRICT KC | SHEET NO. 10
COUNTY JACKSON
JOB NO. JKU0024
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9599

DESCRIPTION	DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



REMOVE EXISTING BRIDGE A0825
STA. 4+01.87 TO STA. 7+80.00
44'-69'-69'-69'-78.5'-47'
CONCRETE BOX GIRDER SPAN
VARIABLE SKEW
52'-0" OUT-TO-OUT

STATE OF MISSOURI
BOARD OF PUBLIC BUILDINGS
NO TAKING

NOTES:
1. ALL STATIONING AND OFFSETS ARE BASED ON ℄ HOLMES ST. UNLESS OTHERWISE NOTED.
2. FOR INTERSECTION DETAILS, SEE SPECIAL SHEETS (SS).
3. FOR LIGHTING REMOVALS, SEE LIGHTING PLANS (LT).
4. FOR SIGNING REMOVALS, SEE SIGNING PLANS (SN).

DEMOLITION PLAN
SPECIAL SHEETS
SHEET 1 OF 7

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	11
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
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MATCHLINE - STA. 5+75.00

RAMP SB US-71-WB 670 (LANE K)
RAMP EB I-670 NB US-71 (LANE J)
EB I-670 (LANE A)
1/4 1/4 SECTION LINE
1/4 1/4 SECTION LINE
DND- EXIST. FIBER
JTB PROPERTIES LLC
NO TAKING
WB TRUMAN RD
EB TRUMAN RD
10
(R) EXIST. GUARDRAIL STA. 3+50.51 TO STA. 4+21.12 ℄ LANE J
EXIST. R/W
END PAVEMENT AND CURB REMOVAL STA. 45+04.71 OFF. 39.1' RT. ℄ LANE A
EXIST. FIBER ON BRIDGE TO BE RELOCATED BY OTHERS
(R) EXIST. FENCE
STA. 7+23.43 OFF. 27.8' LT.
FENCE STA. 8+23.59 OFF. 44.1' LT.
DND - EXIST. DRIVE
FENCE STA. 7+91.17 OFF. 30.3' LT.
STA. 3+58.62 OFF. 1.0' LT. ℄ LANE J
DND - EXIST. MANHOLE x7
U.I.P. - EXIST. SIGNAL
(R) EXIST. GUARDRAIL STA.13+13.59 TO STA. 13+64.50 ℄ LANE K
R 11.5'
S.L.
POT STA 9+19.24
END STA 10+50.00
CP#209
STA. 13+52.05 OFF. 25.0' LT. ℄ LANE K
SAW CUT
BEGIN RADIUS STA. 44+97.27 OFF. 34.0' RT. ℄ LANE A
DND - EXIST. GAS
℄ HOLMES ST.
SAW CUT FULL WIDTH STA. 8+20.00
(R) EXIST. CURB AND PAVEMENT
(R) EXIST. PAVEMENT
SAW CUT
2.5' MIN.
DND - EXIST. DRIVE
STA. 8+11.31 OFF. 26.3' RT.
R 38'
S.L.
STA. 8+11.31 OFF. 30.4' RT.
STA. 3+03.00 OFF. 1.0' LT. ℄ LANE J
STA. 7+91.67 OFF. 35.9' RT.
REMOVE MEDIAN PAVEMENT AND BARRIER FOR BARRIER AND MEDIAN CONSTRUCTION
(R) EXIST. CONCRETE SLOPE PROTECTION
DND - EXIST. ACCESS FENCE ATOP UTILITY VAULT BRIDGE
STA. 14+07.21 OFF. 25.0' LT. ℄ LANE K
DND - EXIST. UTILITY VAULT BRIDGE
STA. 7+38.96 OFF. 35.8' RT.
BEGIN PAVEMENT AND CURB REMOVAL STA. 44+40.56 OFF. 34.0' RT. ℄ LANE A
(R) EXIST. GUARDRAIL STA. 42+14.44 TO STA. 45+02.08
JTB PROPERTIES LLC
NO TAKING
EXIST. R/W
WB TRUMAN RD
EB TRUMAN RD

LEGEND

REMOVE EXISTING PAVEMENT, CURB, BARRIER, AND SIDEWALK

SCALE
0 20 40 60

DEMOLITION PLAN
SPECIAL SHEETS
SHEET 2 OF 7

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	12
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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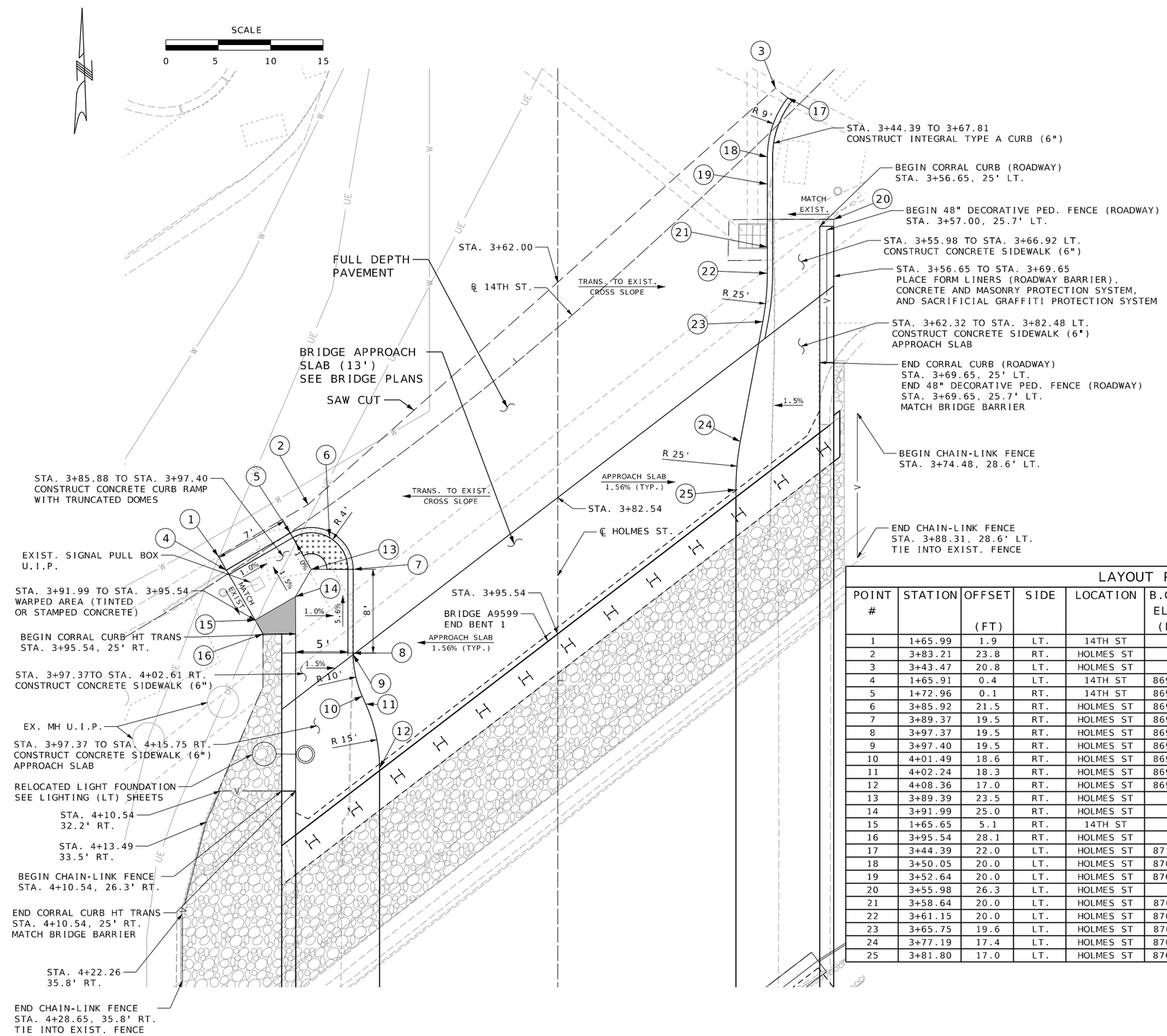


NOTES:

1. TINTED OR STAMPED CONCRETE SHALL MEET MATERIAL SPECIFICATIONS PER SECTIONS 608.3.2 AND 1056.10. ENGINEER IN FIELD SHALL DETERMINE APPROVED TINTING COLOR.

2. SEE BRIDGE PLANS FOR CORRAL CURB DETAILS. SEE SPECIAL SHEETS (SS) FOR CORRAL CURB HEIGHT TRANSITION DETAILS.

LAYOUT POINTS

POINT #	STATION	OFFSET (FT)	SIDE	LOCATION	B.O.C. ELEV. (FT)	E.O.P. ELEV. (FT)	RADIUS (FT)	REMARKS
1	1+65.99	1.9	LT.	14TH ST	--	--	--	SAW CUT, MATCH EXIST.
2	3+83.21	23.8	RT.	HOLMES ST	--	--	--	SAW CUT, MATCH EXIST.
3	3+43.47	20.8	LT.	HOLMES ST	--	--	--	SAW CUT, MATCH EXIST.
4	1+65.91	0.4	LT.	14TH ST	869.54	869.14	--	MATCH EXISTING
5	1+72.96	0.1	RT.	14TH ST	869.47	869.47	4	BEGIN RADIUS
6	3+85.92	21.5	RT.	HOLMES ST	869.57	869.57	4	
7	3+89.37	19.5	RT.	HOLMES ST	869.47	869.47	--	END RADIUS
8	3+97.37	19.5	RT.	HOLMES ST	869.73	869.23	--	END CURB RAMP
9	3+97.40	19.5	RT.	HOLMES ST	869.73	869.23	10	BEGIN RADIUS
10	4+01.49	18.6	RT.	HOLMES ST	869.63	869.13	10	END RADIUS
11	4+02.24	18.3	RT.	HOLMES ST	869.62	869.12	15	BEGIN RADIUS
12	4+08.36	17.0	RT.	HOLMES ST	869.48	868.98	15	END RADIUS
13	3+89.39	23.5	RT.	HOLMES ST	--	--	4	CENTER
14	3+91.99	25.0	RT.	HOLMES ST	--	--	--	
15	1+65.65	5.1	RT.	14TH ST	--	--	--	
16	3+95.54	28.1	RT.	HOLMES ST	--	--	--	
17	3+44.39	22.0	LT.	HOLMES ST	871.08	871.08	9	BEGIN RADIUS. MATCH EXIST.
18	3+50.05	20.0	LT.	HOLMES ST	870.90	870.90	9	END RADIUS
19	3+52.64	20.0	LT.	HOLMES ST	870.74	870.74	--	BEGIN CURB HEIGHT TRANS.
20	3+55.98	26.3	LT.	HOLMES ST	--	--	--	SAW CUT, MATCH EXIST.
21	3+58.64	20.0	LT.	HOLMES ST	870.81	870.31	--	END CURB HEIGHT TRANS.
22	3+61.15	20.0	LT.	HOLMES ST	870.90	870.40	25	BEGIN RADIUS
23	3+65.75	19.6	LT.	HOLMES ST	870.81	870.31	25	END RADIUS
24	3+77.19	17.4	LT.	HOLMES ST	870.38	869.88	25	BEGIN RADIUS
25	3+81.80	17.0	LT.	HOLMES ST	870.24	869.74	25	END RADIUS

INTERSECTION DETAILS
SPECIAL SHEETS
SHEET 3 OF 7

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

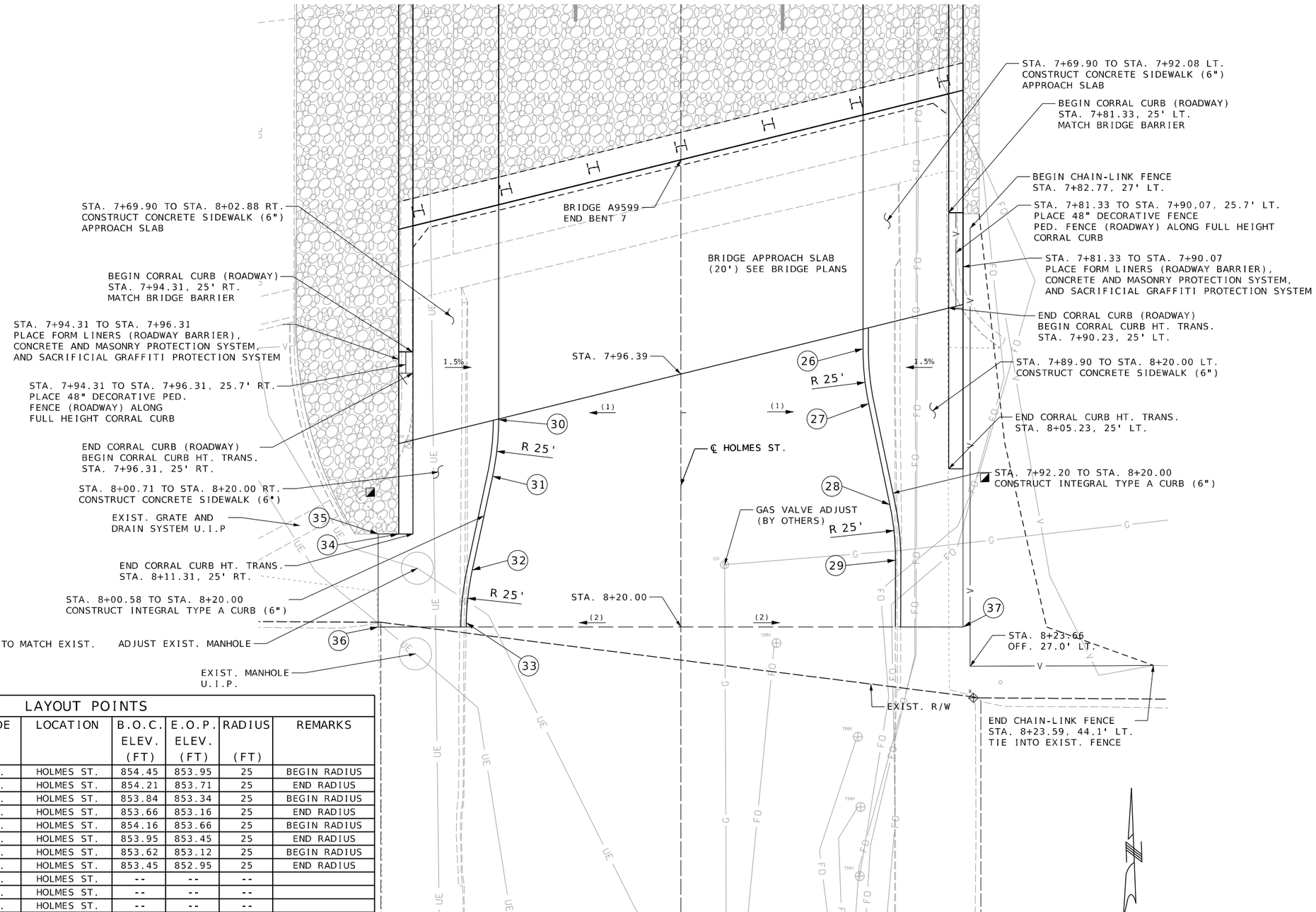
DATE PREPARED	
3/28/2025	
ROUTE	STATE
HOLMES	MO
DISTRICT	SHEET NO.
KC	13
COUNTY	
JACKSON	
JOB NO.	
JKU0024	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
A9599	

DESCRIPTION

DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



NOTES:
1. BEGIN CROSS SLOPE TRANSITION TO MATCH EXIST.
2. MATCH EXIST. CROSS SLOPE

LAYOUT POINTS

POINT #	STATION	OFFSET (FT)	SIDE	LOCATION	B.O.C. ELEV. (FT)	E.O.P. ELEV. (FT)	RADIUS (FT)	REMARKS
26	7+94.03	17.0	LT.	HOLMES ST.	854.45	853.95	25	BEGIN RADIUS
27	7+99.15	17.5	LT.	HOLMES ST.	854.21	853.71	25	END RADIUS
28	8+08.59	19.5	LT.	HOLMES ST.	853.84	853.34	25	BEGIN RADIUS
29	8+14.19	20.0	LT.	HOLMES ST.	853.66	853.16	25	END RADIUS
30	8+13.77	17.0	RT.	HOLMES ST.	854.16	853.66	25	BEGIN RADIUS
31	8+05.93	17.6	RT.	HOLMES ST.	853.95	853.45	25	END RADIUS
32	8+14.68	19.5	RT.	HOLMES ST.	853.62	853.12	25	BEGIN RADIUS
33	8+19.59	20.0	RT.	HOLMES ST.	853.45	852.95	25	END RADIUS
34	8+11.31	26.3	RT.	HOLMES ST.	--	--	--	
35	8+11.31	28.2	RT.	HOLMES ST.	--	--	--	
36	8+20.00	28.2	RT.	HOLMES ST.	--	--	--	
37	8+20.00	26.3	LT.	HOLMES ST.	--	--	--	

SCALE
0 5 10 15

INTERSECTION DETAILS
SPECIAL SHEETS
SHEET 4 OF 7

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	14
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION
DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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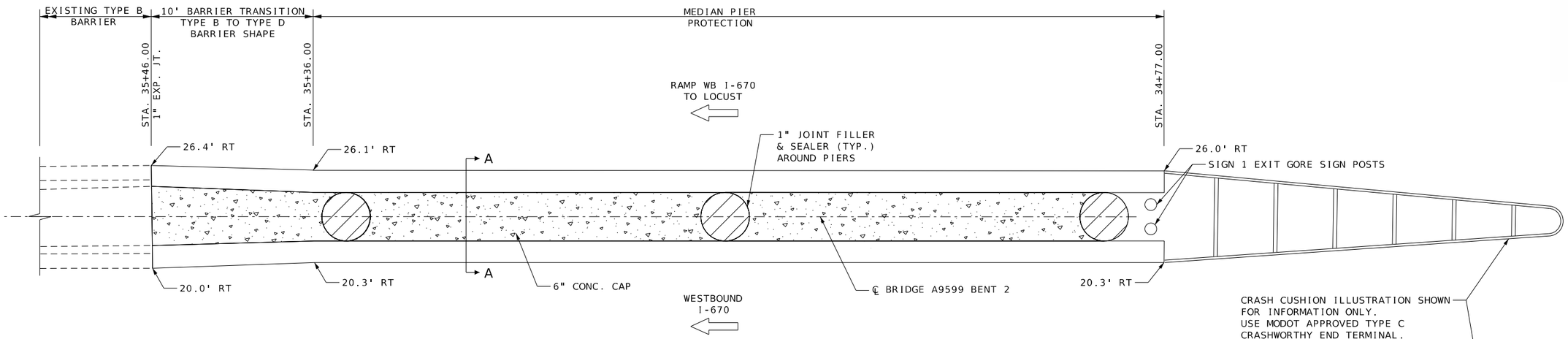
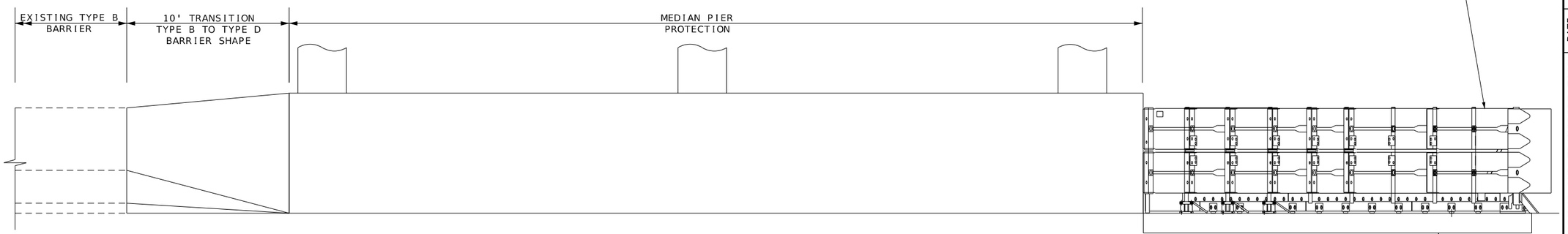
NOTES:
ALL STATIONS AND OFFSETS
SHOWN FROM ℄ I-670 LANE B



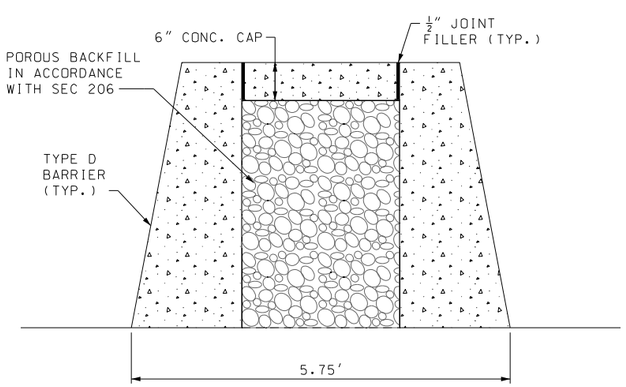
PLAN VIEW

CRASH CUSHION ILLUSTRATION SHOWN FOR INFORMATION ONLY. USE MODOT APPROVED TYPE C CRASHWORTHY END TERMINAL.



ELEVATION VIEW
(LOOKING NORTH)

CRASH CUSHION PAVEMENT ANCHORAGE IN FRONT OF CONCRETE PIER PROTECTION PER MANUFACTURER REQUIREMENTS. THIS WORK IS SUBSIDIARY TO THE TYPE C CRASHWORTHY END TERMINAL BID ITEM.



NOT TO SCALE

SECTION A-A

MEDIAN BARRIER
PIER PROTECTION
BENT 2
SPECIAL SHEETS
SHEET 5 OF 7

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	15
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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715 KIRK DRIVE
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CERTIFICATE OF AUTHORITY
NO. 001270

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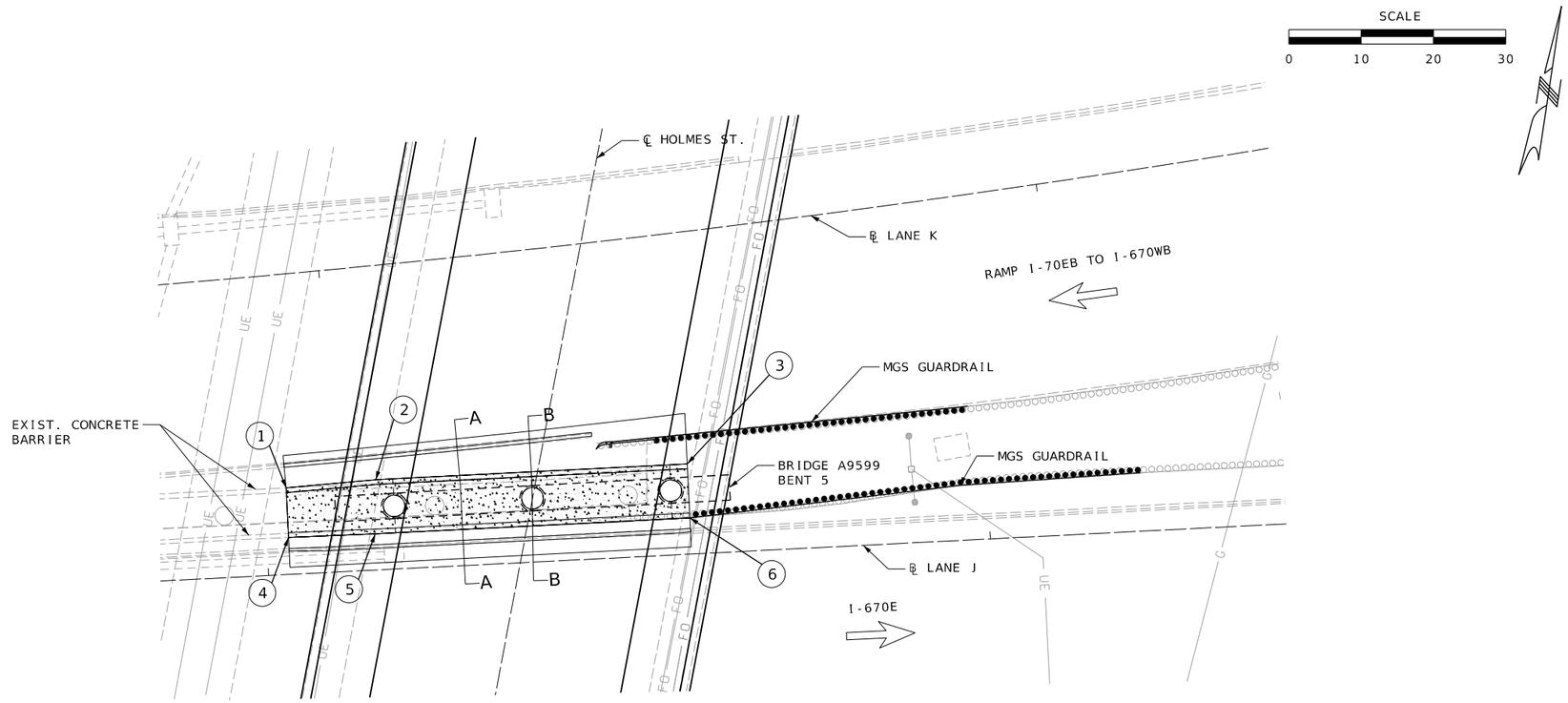
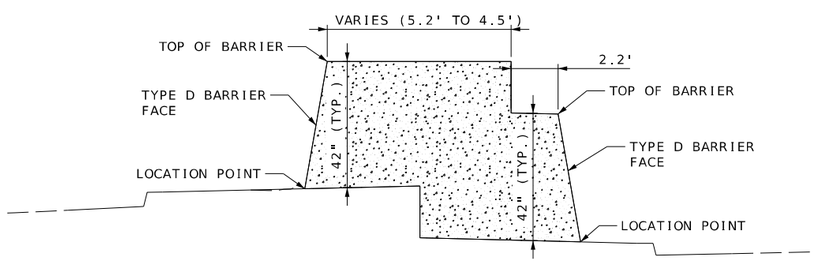
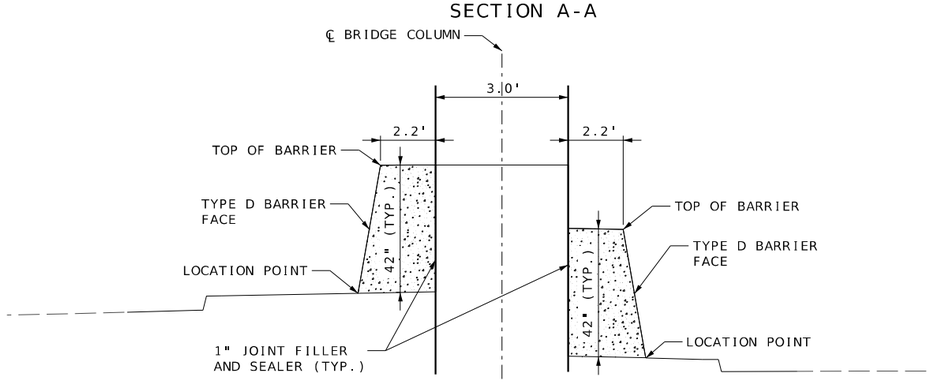




SECTION A-A



NOT TO SCALE

SECTION B-B

BARRIER POINTS					
POINT #	STATION	OFFSET (FT)	SIDE	LOCATION	REMARKS
1	3+03.00	12.0	LT	LANE J	MATCH EXIST JOINT, BEGIN CONCRETE MEDIAN BARRIER, BEGIN BARRIER TAPER
2	3+15.62	12.5	LT	LANE J	END BARRIER TAPER
3	3+58.62	12.5	LT	LANE J	END CONCRETE MEDIAN BARRIER
4	3+03.00	5.1	LT	LANE J	MATCH EXIST JOINT, BEGIN CONCRETE MEDIAN BARRIER, BEGIN BARRIER TAPER
5	3+15.00	5.0	LT	LANE J	END BARRIER TAPER
6	3+58.62	5.0	LT	LANE J	END CONCRETE MEDIAN BARRIER

MEDIAN BARRIER
PIER PROTECTION
BENT 5
SPECIAL SHEETS
SHEET 6 OF 7

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	16
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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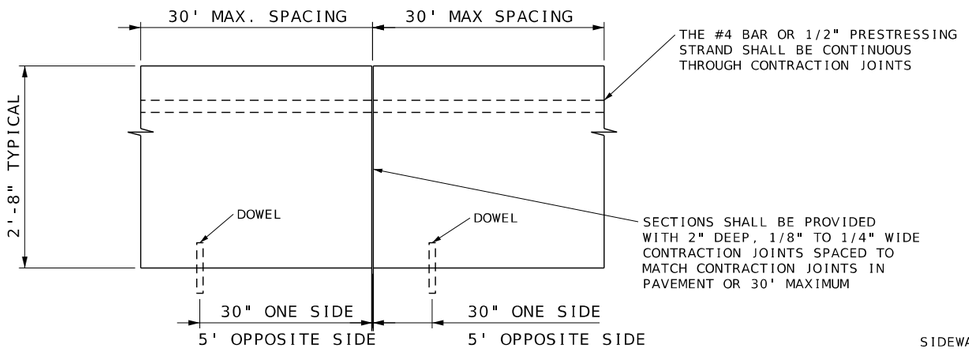
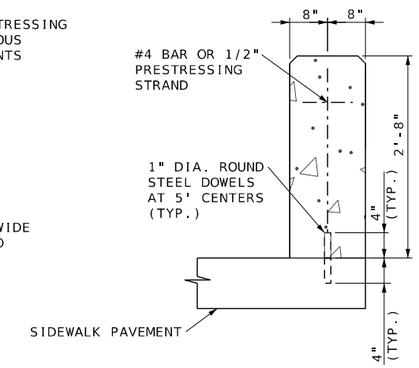


PLAN VIEW



TYPICAL VIEW

CORRAL CURB NOTES:

ALL TOP AND END EDGES SHALL BE 3/8" BEVEL, 1/2" RADIUS OR ALTERNATE AS APPROVED BY THE ENGINEER.

EXPANSION JOINTS SHALL BE PROVIDED IN THE BARRIER TO MATCH EXPANSION JOINTS IN PAVEMENT.

#8 REINFORCING BARS WITH AN EXOPY ANCHOR SYSTEM MAY BE SUBSTITUTED FOR SMOOTH #1 DIAMETER ROUND STEEL DOWELS.

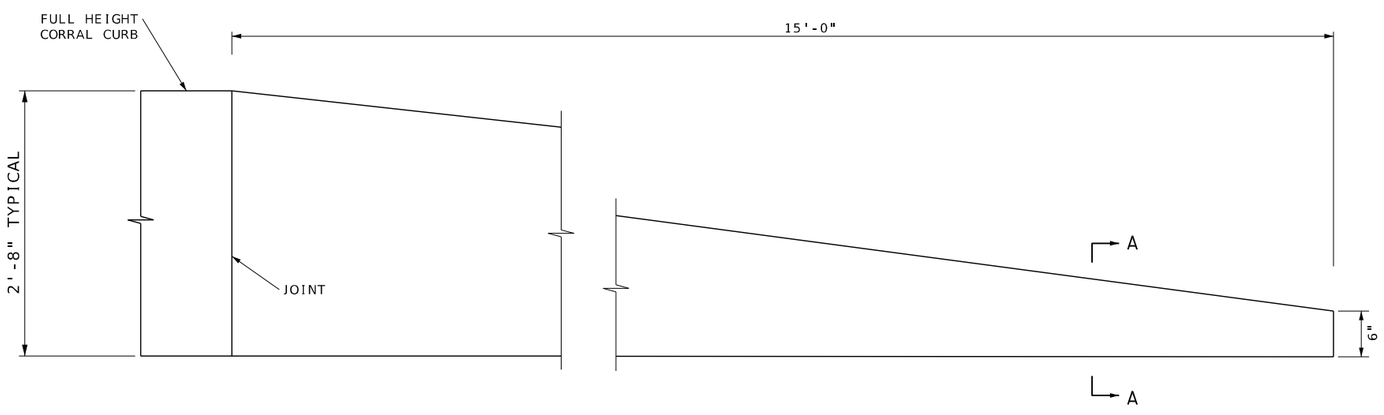
TOP OF CORRAL CURB SHALL BE BUILT PARALLEL TO GRADE.

PAYMENT FOR ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE, WILL BE CONSIDERED COMPLETELY COVERED BY THE CONTRACT UNIT PRICE FOR CORRAL CURB PER LINEAR FOOT AND CONCRETE TRAFFIC BARRIER TRANSITION PER EACH.

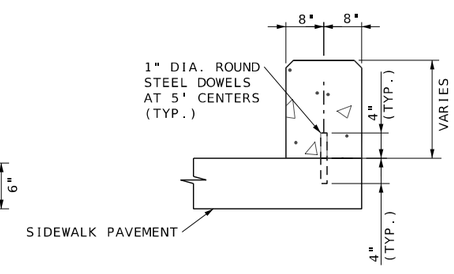
CONCRETE IN THE CORRAL CURB SHALL BE CLASS B OR B-1.

MEASUREMENT OF CORRAL CURB IS TO THE NEAREST LINEAR FOOT, MEASURED ALONG THE OUTSIDE TOP EDGE OF CORRAL CURB.

FORM LINER RELIEF NOT SHOWN FOR CLARITY. SEE BRIDGE PLANS.



ELEVATION



SECTION A-A

CORRAL CURB HEIGHT TRANSITION

NO SCALE

NOT TO SCALE

CORRAL CURB
HEIGHT TRANSITION
SPECIAL SHEETS
SHEET 7 OF 7

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	
3/28/2025	
ROUTE	STATE
HOLMES	MO
DISTRICT	SHEET NO.
KC	17
COUNTY	
JACKSON	
JOB NO.	
JKU0024	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
A9599	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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SPACING AND TAPER LENGTHS FOR WORK ZONE SIGNS, CHANNELIZERS AND CONCRETE BARRIER

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

TAPER LENGTHS AND END TREATMENTS FOR CONCRETE BARRIER				
PERMANENT POSTED SPEED MPH	MINIMUM LANE TAPER LENGTH (3)			END TREATMENT (4)
	10'	11'	12'	
< 40	160'	168'	176'	BARRIER HEIGHT TRANSITION
> 40	160'	168'	176'	APPROVED CRASH CUSHION

TAPER LENGTHS AND SPACING FOR CHANNELIZERS							
PERMANENT POSTED SPEED MPH	MINIMUM LANE TAPER LENGTH (L)			MINIMUM SHOULDER TAPER LENGTH (T1) BASED ON 10' SHOULDER	BUFFER LENGTH FT.	MAXIMUM CHANNELIZER SPACING	
	10'	11'	12'			THROUGH TAPER	THROUGH WORK AREA
0-35	205'	225'	245'	70'	280'	35'	40'
40-45	450'	495'	540'	150'	400'	40'	80'
50-55	550'	605'	660'	185'	560'	50'	80'
60-70	700'	770'	840'	235'	840'	60'	120'

NOTES:
(1) SPACING BETWEEN SIGNS AND SPACING BETWEEN FIRST SIGN AND BEGINNING OF LANE TAPER OR SIGNED CONDITION.

(2) SPACING MAY BE ADJUSTED AS NECESSARY TO MEET FIELD CONDITIONS.

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

(4) CONCRETE BARRIER MAY BE INSTALLED AT 8:1 FLARE RATE FROM THE SHOULDER POINT TO THE LIMITS OF THE CLEAR ZONE WHERE THE SIDE SLOPE IS 6:1 OR FLATTER.

(5) THE SA DIMENSION IS THE DISTANCE FROM THE TRANSITION OR POINT OF RESTRICTION TO THE FIRST SIGN.

THE SB DIMENSION IS THE DISTANCE BETWEEN THE FIRST AND SECOND SIGNS.

THE SC DIMENSION IS THE DISTANCE BETWEEN THE SECOND AND THIRD SIGNS.

(THE "FIRST SIGN" IS THE SIGN IN A THREE-SIGN SERIES THAT IS CLOSEST TO THE TEMPORARY TRAFFIC CONTROL ZONE. THE "THIRD SIGN" IS THE SIGN THAT IS FURTHEST UPSTREAM FROM THE TEMPORARY TRAFFIC CONTROL ZONE.)

GENERAL NOTES:
SEE STANDARD PLAN 616.10 FOR DETAILS AND ITEMS NOT SHOWN.

EXISTING SIGNS SHALL BE COVERED DURING WORKING HOURS ONLY IF IN CONFLICT WITH TRAFFIC CONTROL PLANS.

CONES ALLOWABLE FOR DAYTIME OPERATIONS ONLY.

LOCATE FLASHING ARROW PANEL AT BEGINNING OF TAPER WHEN FEASIBLE, ARROW PANELS ARE ALWAYS LOCATED BEHIND CHANNELIZERS OR CONES.

TEMPORARY TRAFFIC BARRIERS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS FOR CLEAR DISTANCE BEHIND BARRIER AND FIXED OBJECT ATTACHMENT.

FOR THE I-670 WORK ZONE SPEED LIMIT, USE 5 M.P.H. LESS THAN THE NORMAL POSTED SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.

REMOVE OR COVER ALL CONFLICTING SIGNS AND PAVEMENT MARKINGS.

COORDINATE WITH KCATA IN ADVANCE OF NEW STAGE IMPLEMENTATION OR SHORT-TERM IMPACTS THAT MAY AFFECT BUS ROUTES OR BUS STOPS.

COORDINATE WITH MODOT AND LOCAL JURISDICTIONS IN ADVANCE OF THE NEW STAGE IMPLEMENTATION OR SHORT-TERM IMPACTS THAT MAY REQUIRE SIGNAL TIMING ADJUSTMENTS TO IMPROVE INTERSECTION CAPACITY.

TYPICAL APPLICATIONS
TEMPORARY TRAFFIC
CONTROL
SHEET 1 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED
3/28/2025

ROUTE	STATE
HOLMES	MO
DISTRICT	SHEET NO.
KC	18

COUNTY
JACKSON

JOB NO.
JKU0024

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9599

DESCRIPTION	DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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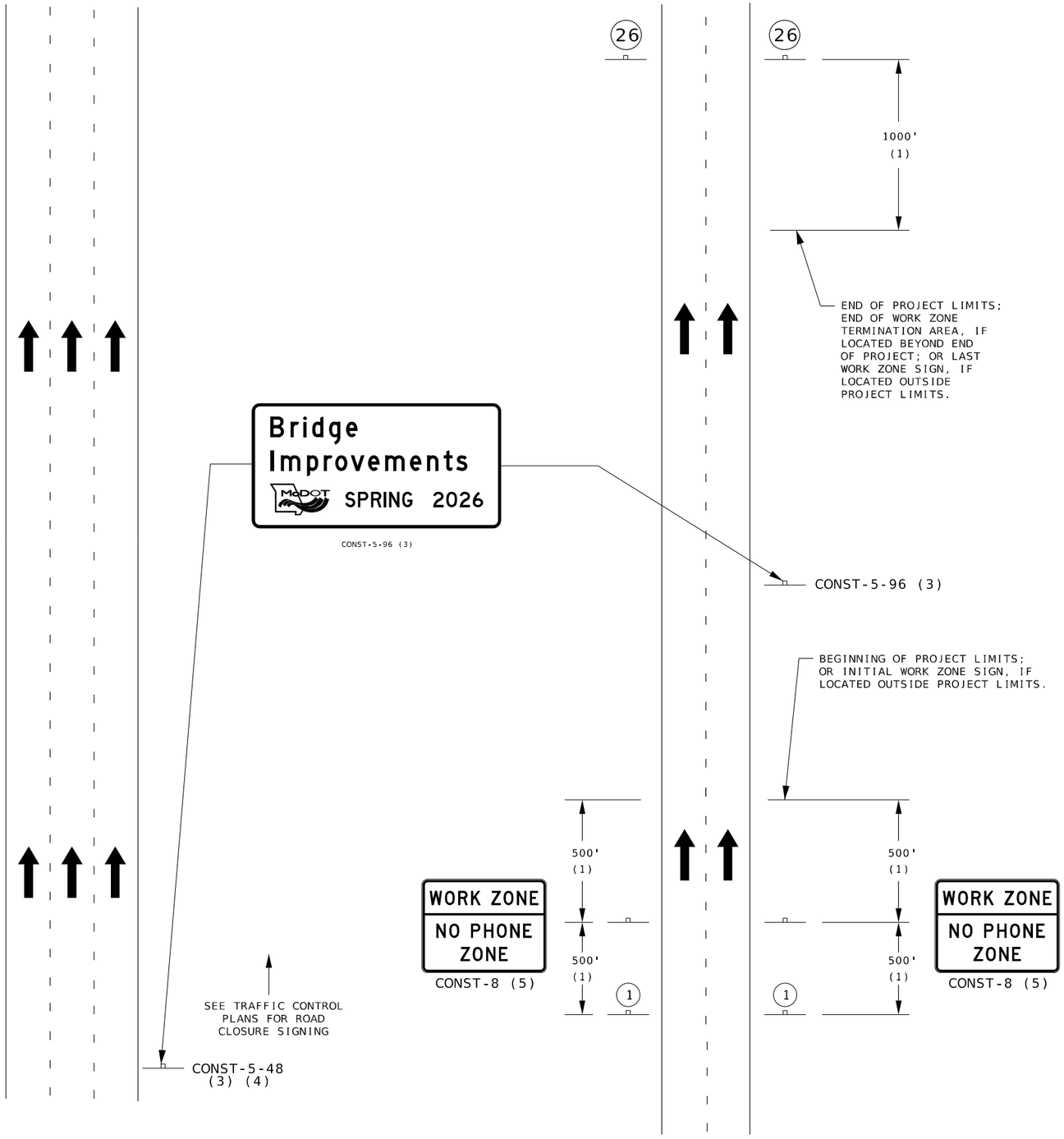


NOTES:
SIGN GO20-2 IS USED ON ALL PROJECTS WHERE SIGN GO20-1 IS USED.

OTHER SIGNS SUCH AS DETOUR OR ALTERNATE ROUTE SIGNING MAY BE USED OUTSIDE THE PROJECT LIMITS.

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

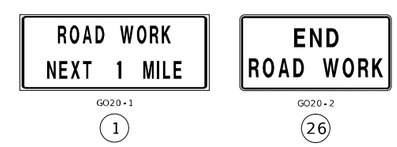
(1) DISTANCE MAY BE ADJUSTED ACCORDING TO FIELD CONDITIONS. WHERE TRAFFIC BACKUPS ARE EXPECTED BEYOND THE ADVANCE WARNING AREA, ADDITIONAL SIGNING MAY BE NEEDED.

(2) SIGN CONST-7-72 OR CONST-7-48 IS PLACED 500 FEET BEFORE THE BEGINNING OF PROJECT LIMITS OR THE ROAD WORK AHEAD SIGN OR ROAD WORK NEXT XX MILES SIGN, IF USED, WHEN THESE SIGNS ARE LOCATED OUTSIDE THE PROJECT LIMITS.

(3) CONST-5-96 OR CONST-5-48 SIGN IS PLACED IN A VISIBLE AREA WITHIN THE PROJECT LIMITS PROVIDED ITS PLACEMENT DOES NOT DISRUPT A SEQUENCE OF SIGNS. IF A VISIBLE LOCATION WITHIN THE PROJECT IS NOT AVAILABLE, THE SIGN MAY BE PLACED 500 FEET BEFORE SIGN CONST-7-72 OR CONST-7-48.

(4) THE "POINT OF PRESENCE" SIGN IS AVAILABLE IN TWO SIZES DEPENDING ON ROADWAY CONDITIONS. THE 48 IN. X 36 IN. SIGN IS USED ON LOW VOLUME ROUTES THAT CARRY 400 AADT OR LESS, ON PROJECTS THAT HAVE A DURATION OF 4 WEEKS OR LESS OR IN URBAN AREAS WHERE THERE IS INSUFFICIENT RIGHT OF WAY FOR AN EIGHT FOOT WIDE SIGN. THE 96 IN. X 48 IN. VERSION OF THE SIGN IS USED IN ALL OTHER APPLICATIONS, BUT CAN ALSO BE USED IN PLACE OF THE 48 IN. X 36 IN. SIGN IF ADDED EMPHASIS IS DEEMED NECESSARY.

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



TYPICAL APPLICATIONS
TEMPORARY TRAFFIC
CONTROL
SHEET 2 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	19
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION	DATE

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

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NO. 001270

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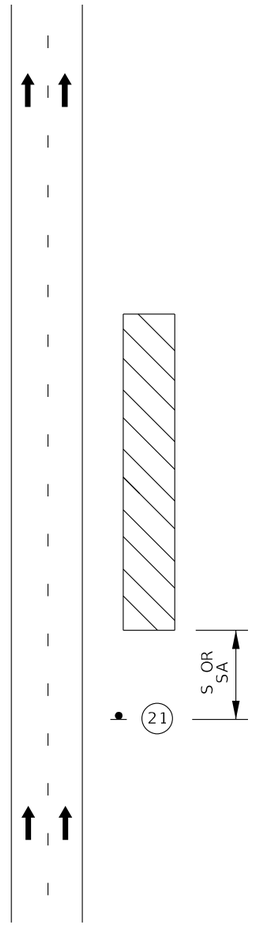


WORK BEYOND THE SHOULDER

NOTES:

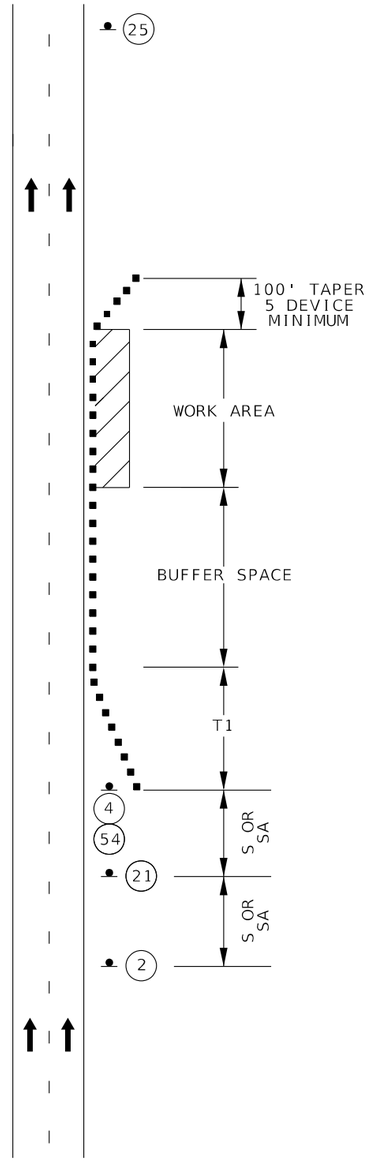
ONLY APPLICABLE WHEN WORK IS WITHIN THE CLEAR ZONE.

SEE TRAFFIC CONTROL SHEET 1 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

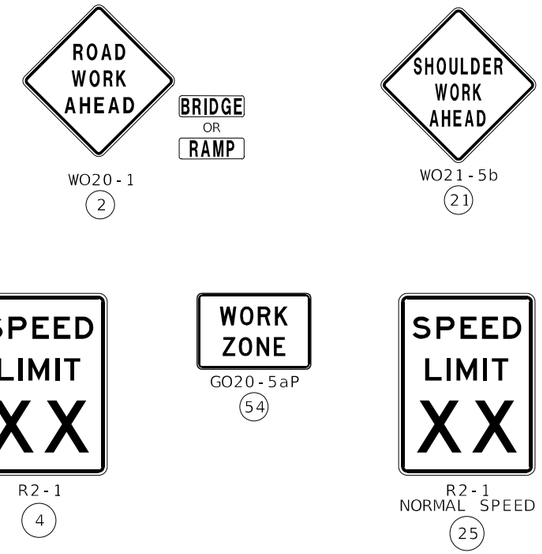
SEE TRAFFIC CONTROL SHEET 1 FOR WORK ZONE SPEED LIMIT GUIDELINES.

ON MULTI-LANE, DIVIDED HIGHWAYS SIGNS ADVISING OF SHOULDER WORK OR THE CONDITION OF THE SHOULDER SHOULD BE PLACED ONLY ON THE SIDE OF THE AFFECTED SHOULDER.

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



WORK ON THE SHOULDER WITH NO TRAVELWAY ENCROACHMENT



NOTES:

SEE TRAFFIC CONTROL SHEET 1 FOR WORK ZONE SPEED LIMIT GUIDELINES.

SEE TRAFFIC CONTROL SHEET 1 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

SIGN 2 NOT REQUIRED IF SHOULDER WORK IS LOCATED WITHIN THE LIMITS OF AN ACTIVITY AREA WHERE ANOTHER SIGN 2 IS ALREADY USED.

PROVIDE SIGNS ON LEFT AND RIGHT SIDE OF DIVIDED HIGHWAYS.

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

WHEN PAVED SHOULDERS HAVING A WIDTH OF 8 FEET OR MORE ARE CLOSED, AT LEAST ONE ADVANCE WARNING SIGN SHALL BE USED. IN ADDITION, CHANNELIZING DEVICES SHALL BE USED TO CLOSE THE SHOULDER IN ADVANCE TO DELINEATE THE BEGINNING OF THE WORK SPACE AND DIRECT VEHICULAR TRAFFIC TO REMAIN WITHIN THE TRAVELED WAY.

MOUNTED ADVANCED WARNING RAIL SYSTEM (AWRS) ON THE ROAD WORK AHEAD SIGNS (W020-1) WHEN INSTALLED FOR MORE THAN 3 CONSECUTIVE DAYS.

TYPICAL APPLICATIONS
TEMPORARY TRAFFIC
CONTROL
SHEET 3 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	20
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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CERTIFICATE OF AUTHORITY
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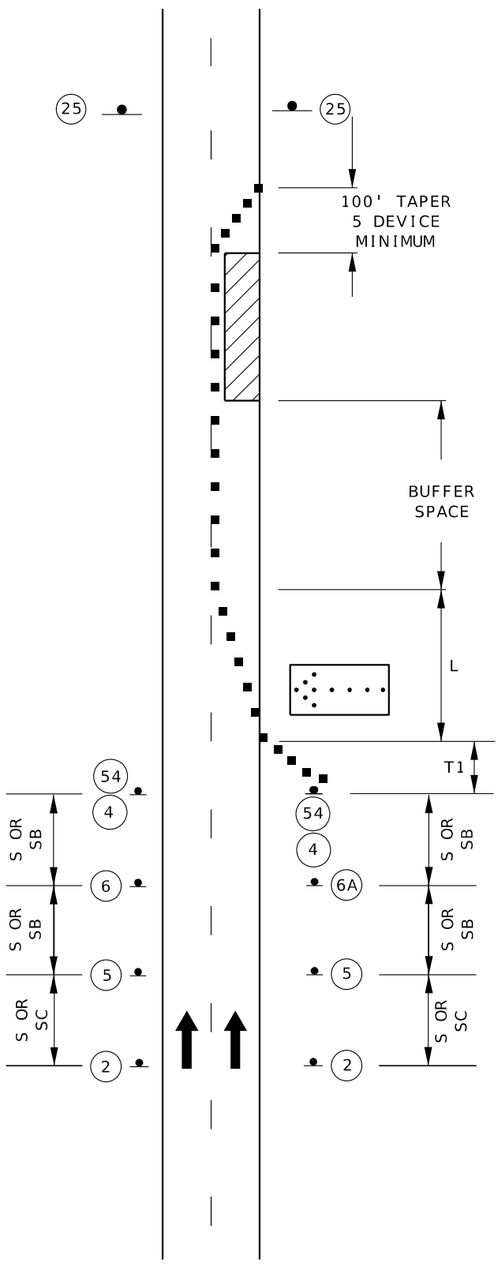
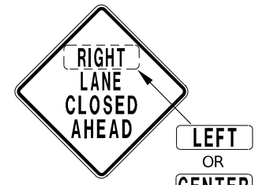


STATIONARY LANE CLOSURE
ON A DIVIDED HIGHWAY

NO SCALE

WO25-6

WO20-1
(2)

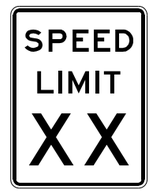


WO20-5
(5)

WO20-6a
(6)

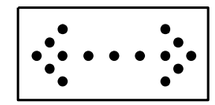
WO4-1a
(6A)

R2-1
(4)



R2-1
(NORMAL SPEED)
(25)

GO20-5aP
(54)



FLASHING
ARROW PANEL

CHANNELIZERS

NOTES:

SEE TRAFFIC CONTROL SHEET 1 FOR WORK ZONE SPEED LIMIT GUIDELINES.

SEE TRAFFIC CONTROL SHEET 1 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

REMOVE AND/OR MODIFY ANY EXISTING PAVEMENT MARKING AS NEEDED.

TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM CLOSURES.

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

WHEN A SIDE ROAD INTERSECTS THE HIGHWAY WITHIN THE TTC ZONE ADDITIONAL TTC DEVICES SHALL BE PLACED AS NEEDED.

REVIEW EPG TA-34a LANE CLOSURE WITH WIDTH AND LANE RESTRICTIONS - DE/CM FOR A LANE CLOSURE WITH WIDTH RESTRICTIONS.

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

MOUNTED ADVANCED WARNING RAIL SYSTEM (AWRS) ON THE ROAD WORK AHEAD SIGNS (W020-1) WHEN INSTALLED FOR MORE THAN 3 CONSECUTIVE DAYS.

TYPICAL APPLICATIONS
TEMPORARY TRAFFIC
CONTROL
SHEET 4 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	21
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION	DATE

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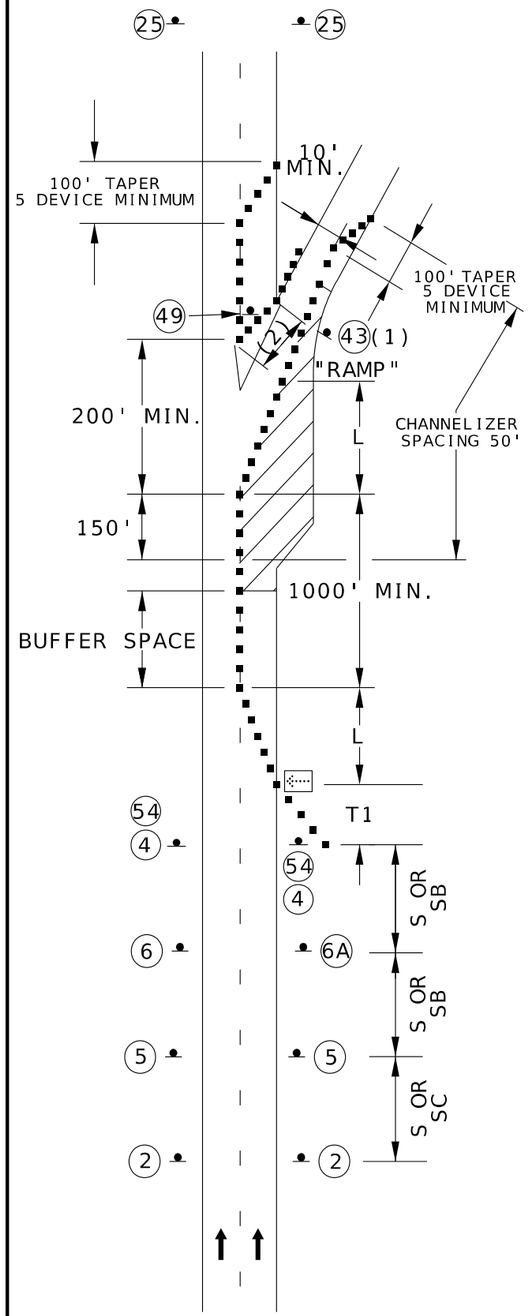
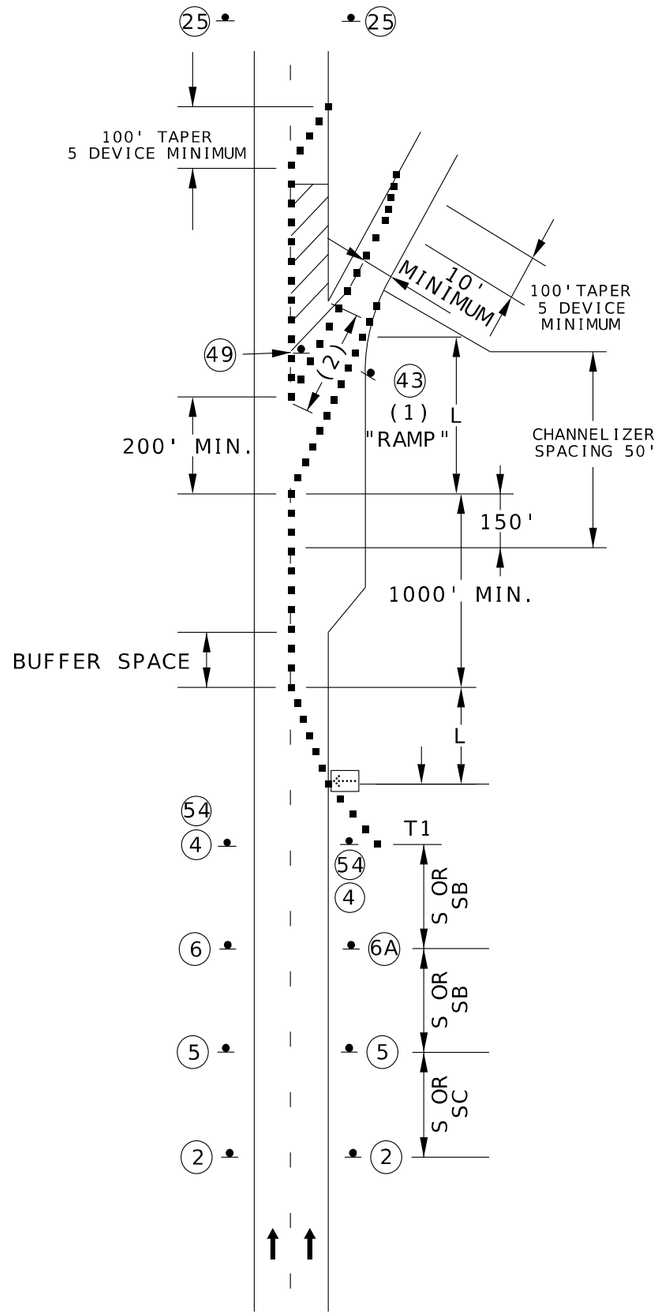
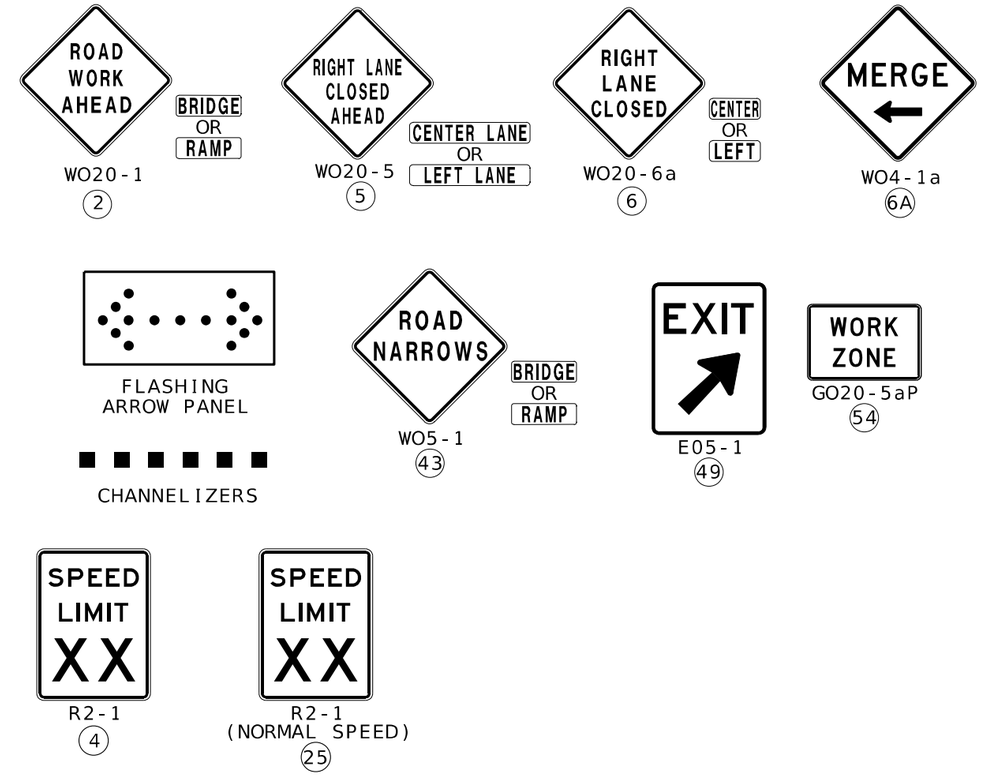
CERTIFICATE OF AUTHORITY
NO. 001270

021_TC_04_JKU0024_I1.dgn 10:22:48 AM 3/28/2025





WORK IN THE VICINITY
OF AN EXIT RAMP
NO SCALE



NOTES:

SEE TRAFFIC CONTROL SHEET 1 FOR WORK ZONE SPEED LIMIT GUIDELINES.

SEE TRAFFIC CONTROL SHEET 1 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

REMOVE AND/OR MODIFY EXISTING PAVEMENT MARKING AS NEEDED.

TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM LANE CLOSURES.

1.) SIGN 43 REQUIRED WHEN RAMP WIDTH IS REDUCED

2.) FIVE CHANNELIZER DEVICE MINIMUM

MOUNTED ADVANCED WARNING RAIL SYSTEM (AWRS) ON THE ROAD WORK AHEAD SIGNS (W020-1) WHEN INSTALLED FOR MORE THAN 3 CONSECUTIVE DAYS.

TYPICAL APPLICATIONS
TEMPORARY TRAFFIC
CONTROL
SHEET 5 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	22
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

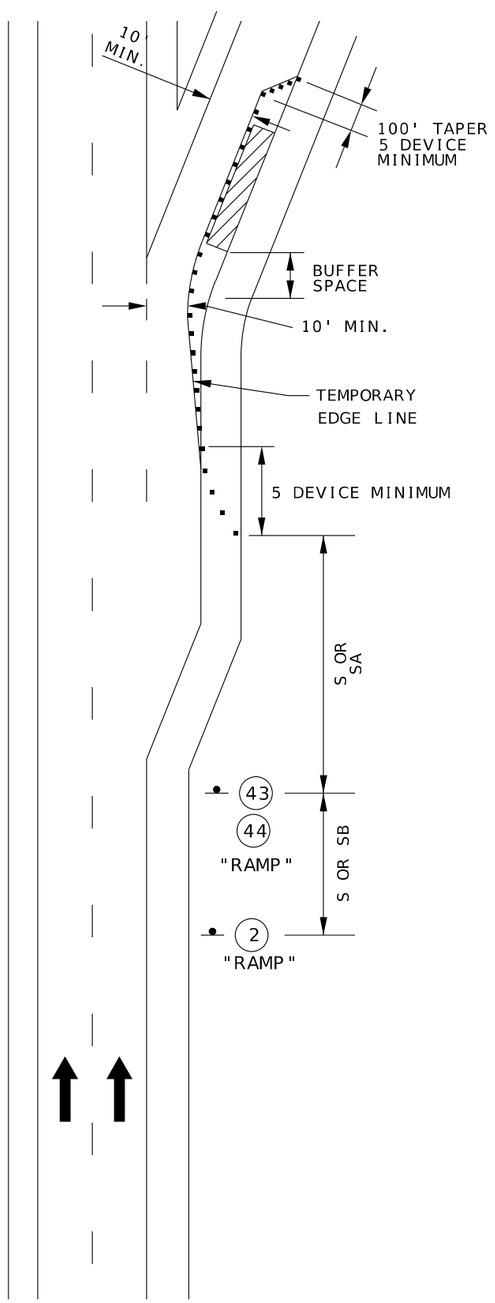
DESCRIPTION

DATE

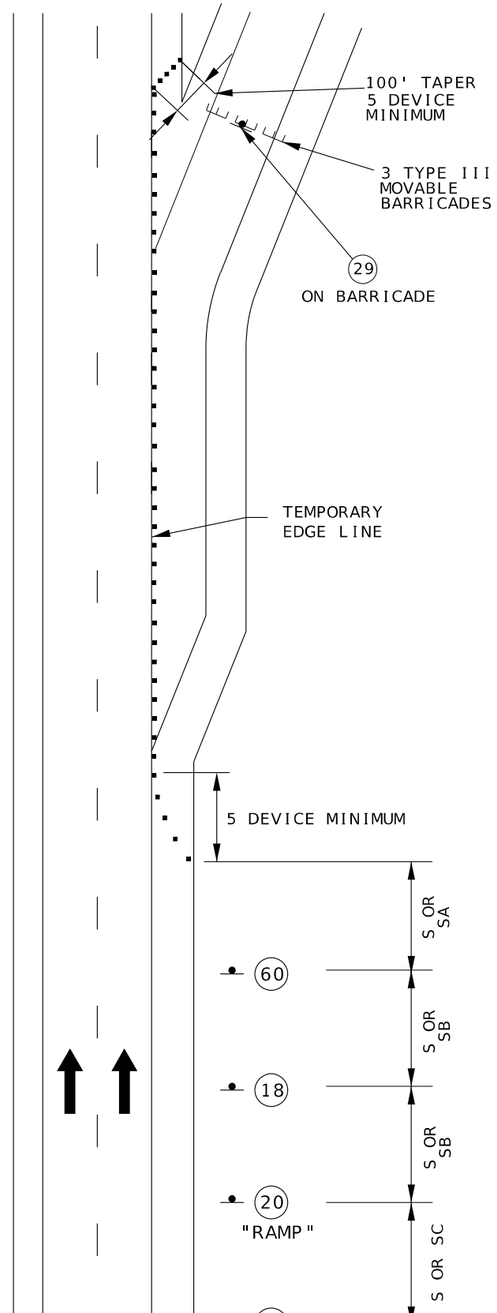
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

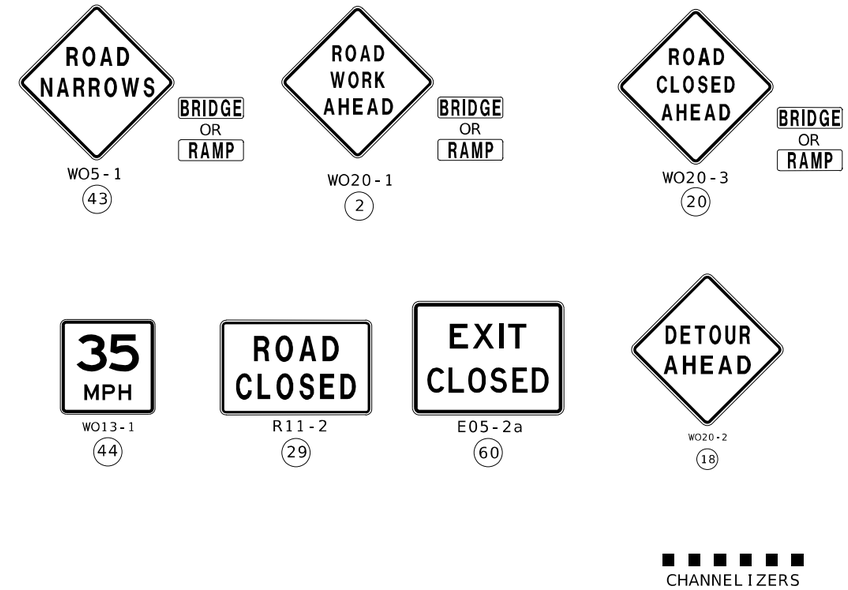
022_TC_05_JKU0024_I1.dgn 10:22:52 AM 3/28/2025



PARTIAL EXIT RAMP CLOSURE



FULL EXIT RAMP CLOSURE



NOTES:

SEE TRAFFIC CONTROL SHEET 1 FOR WORK ZONE SPEED LIMIT GUIDELINES.

SEE TRAFFIC CONTROL SHEET 1 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

TEMPORARY PAVEMENT MARKING OPTIONAL FOR SHORT TERM OPERATIONS.

MOUNTED ADVANCED WARNING RAIL SYSTEM (AWRS) ON THE ROAD WORK AHEAD SIGNS (W020-1) WHEN INSTALLED FOR MORE THAN 3 CONSECUTIVE DAYS.

TYPICAL APPLICATIONS
TEMPORARY TRAFFIC
CONTROL
SHEET 6 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	23
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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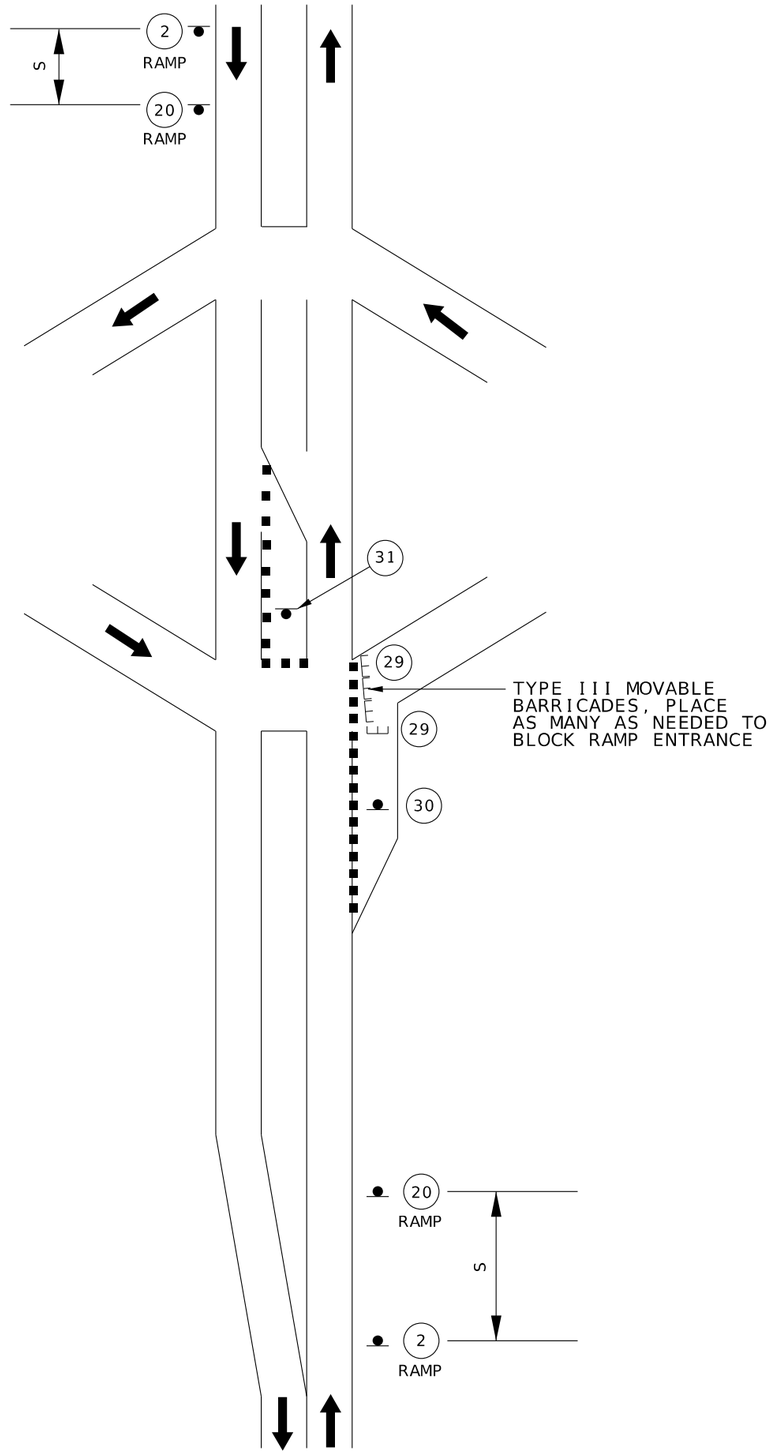
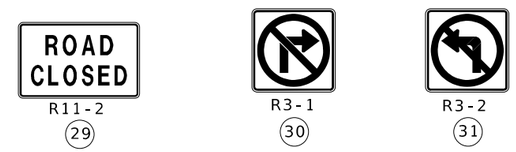


ON-RAMP CLOSURE



NOTES:

SEE TRAFFIC CONTROL SHEET 1 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

SIGN 2 NOT REQUIRED IF SHOULDER WORK IS LOCATED WITHIN THE LIMITS OF AN ACTIVITY AREA WHERE ANOTHER SIGN 2 IS ALREADY USED.

PROVIDE SIGNS ON LEFT AND RIGHT SIDE OF DIVIDED HIGHWAYS.

TYPICAL APPLICATIONS
TEMPORARY TRAFFIC
CONTROL
SHEET 7 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	24
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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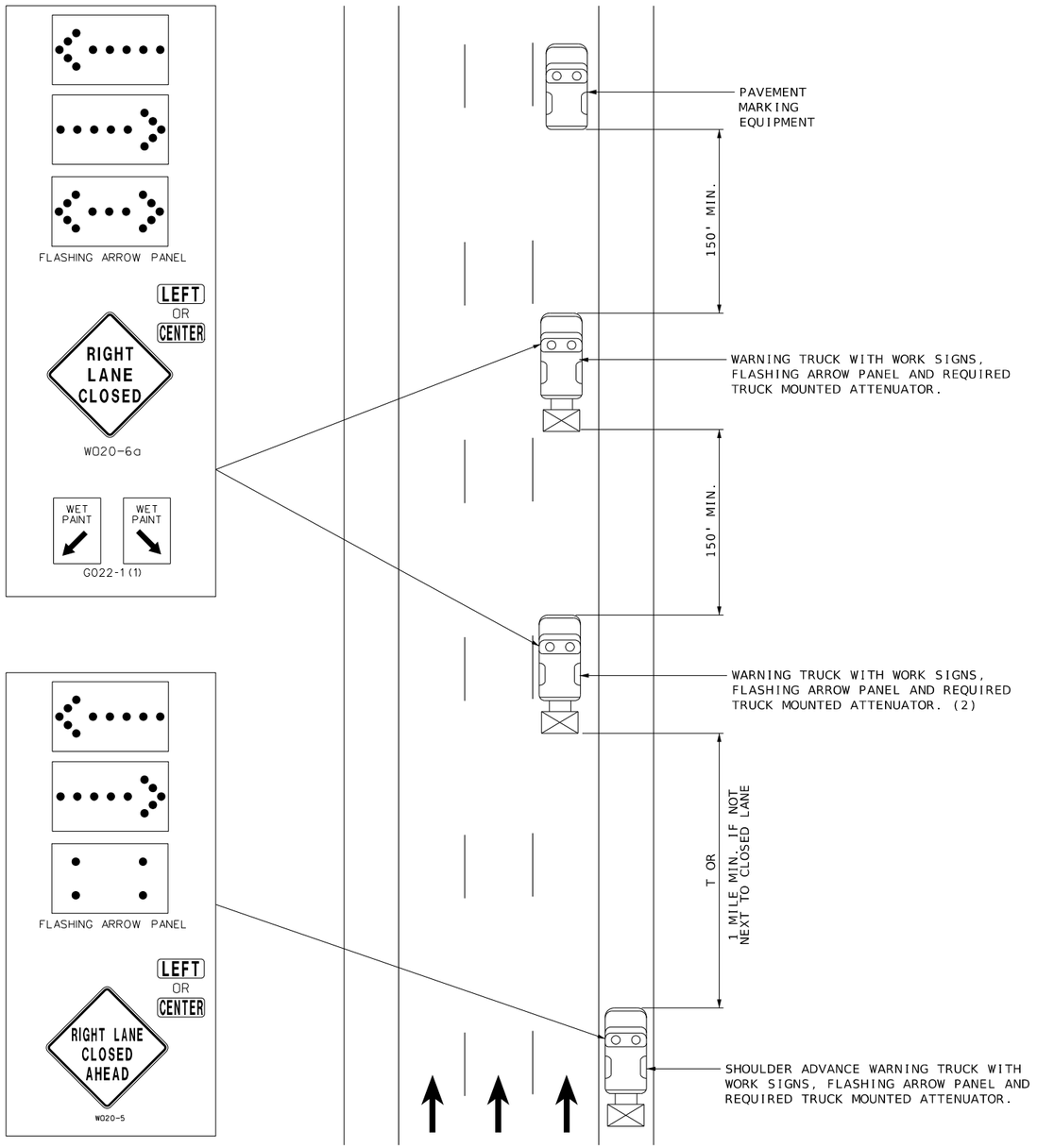
NOT TO SCALE



STRIPING ON MULTI-LANE HIGHWAY

NOTES:

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

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

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

VEHICLE-MOUNTED SIGNS SHALL BE MOUNTED IN A MANNER SUCH THAT THEY ARE NOT OBSCURED BY EQUIPMENT OR SUPPLIES. SIGN LEGENDS ON VEHICLE-MOUNTED SIGNS SHALL BE COVERED OR TURNED FROM VIEW WHEN WORK IS NOT IN PROGRESS.

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

FLASHING ARROW PANELS SHALL, AS A MINIMUM, BE TYPE B, WITH A SIZE OF 60 X 30 INCHES.

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

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

(2) WARNING TRUCK IS POSITIONED AT THE NO TRACK POINT OF THE PAVEMENT MARKING MATERIAL, OR SPACING SHOWN, WHICH EVER IS GREATER.

SPEED	SPACING
PERMANENT POSTED (MPH)	LENGTH T (FT)
≤ 35	245
40-45	540
50-55	660
60-70	840

TYPICAL APPLICATIONS
TEMPORARY TRAFFIC
CONTROL
SHEET 8 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

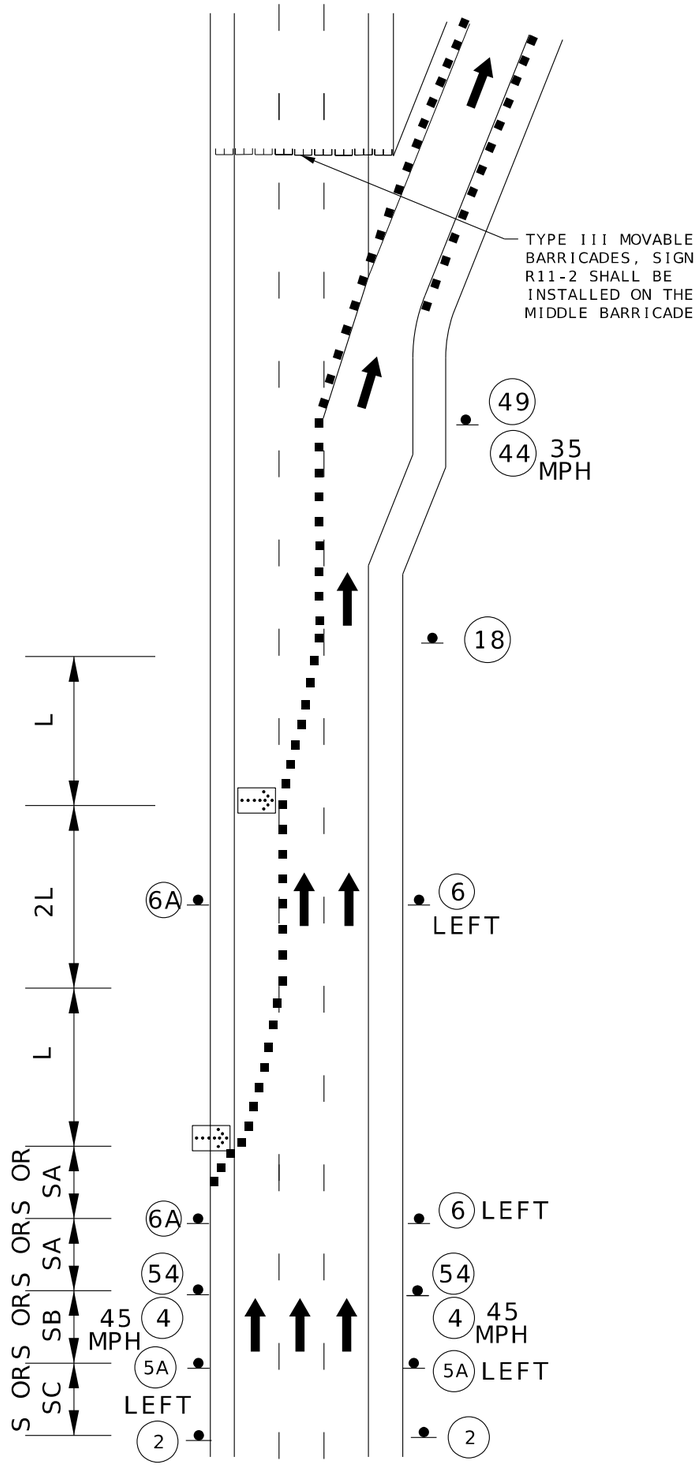
DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	25
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

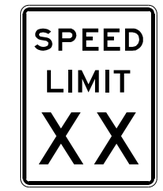
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



HIGHWAY CLOSURE

WO20-1
(2)



R2-1
(4)

SEE PLAN VIEW ON THIS SHEET FOR SPEEDS

GO20-5aP
(54)

WO20-5a
(5A)

WO20-6a
(6)

WO4-1a
(6A)

ON BARRICADE

R11-2
(29)

WO20-2
(18)

E05-1
(49)

WO13-1
(44)

NOTES:

SEE TRAFFIC CONTROL SHEET 1 FOR WORK ZONE SPEED LIMIT GUIDELINES.

SEE TRAFFIC CONTROL SHEET 1 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

SIGN 2 NOT REQUIRED IF SHOULDER WORK IS LOCATED WITHIN THE LIMITS OF AN ACTIVITY AREA WHERE ANOTHER SIGN 2 IS ALREADY USED.

PROVIDE SIGNS ON LEFT AND RIGHT SIDE OF DIVIDED HIGHWAYS.

HIGHWAY CLOSURE
TEMPORARY TRAFFIC CONTROL
SHEET 9 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	26
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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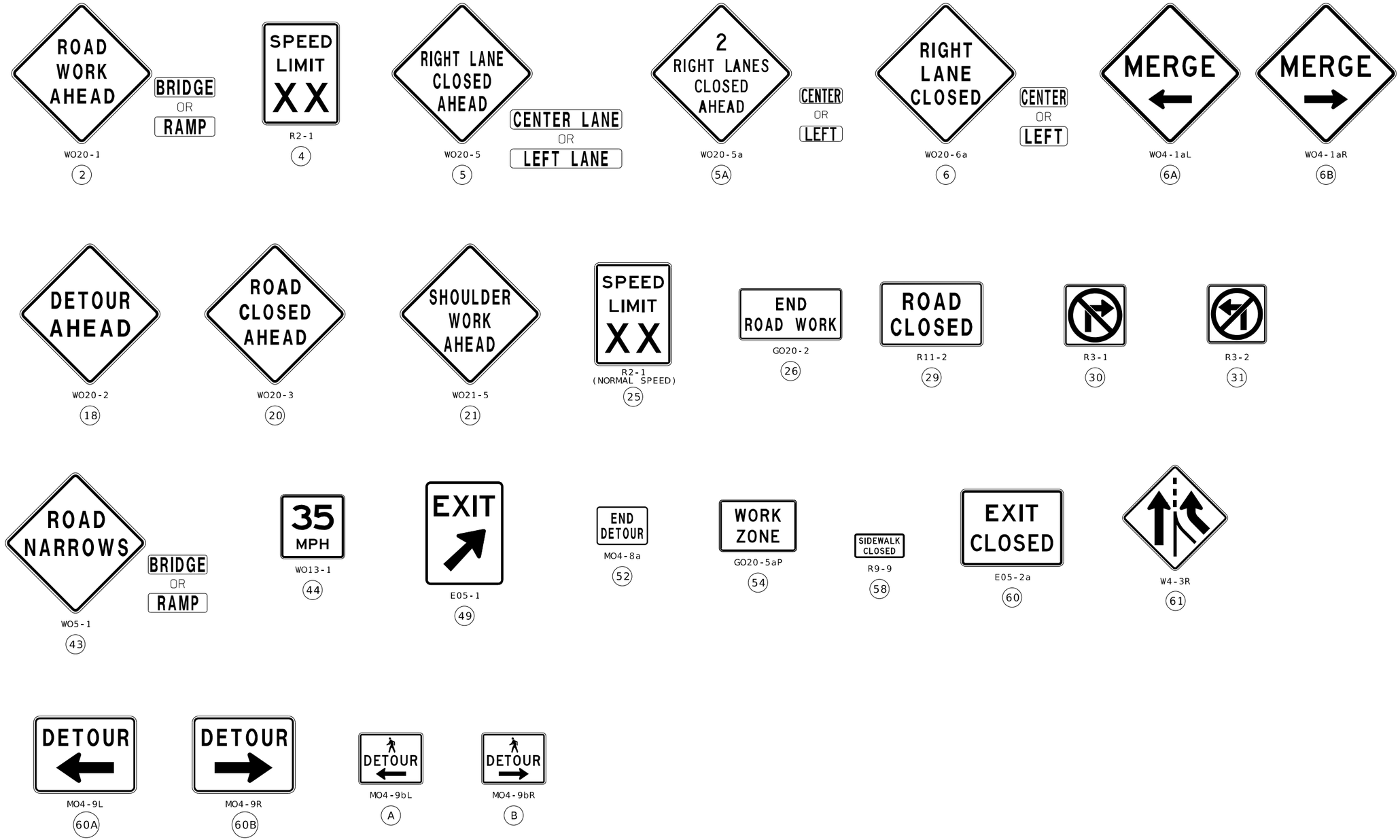

SIGN LEGEND
TEMPORARY TRAFFIC
CONTROL
SHEET 10 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	27
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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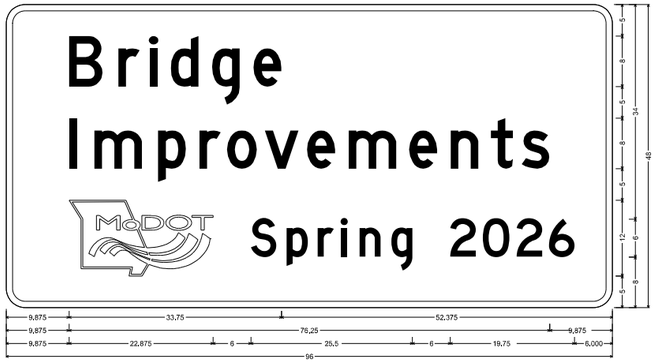
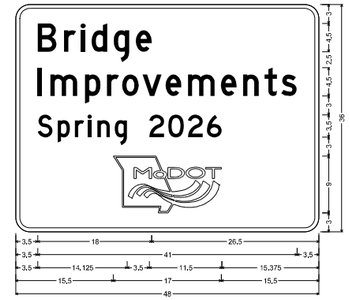


CONST-5-96 SHF-FLAT SHEET:
3,000" Radius, 1,000" Border, White on, Blue;
"Bridge", D; "Improvements", D; "Spring 2026", D;
Table of letter and object lefts

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						
☛	S	p	r	i	n	g	2	0	2	6							
9,875	38,750	43,000	48,375	51,250	53,500	58,875	70,250	75,500	80,750	86,000							

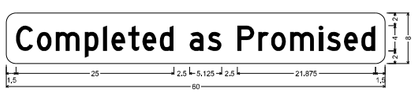


CONST-5-48 SHF-FLAT SHEET:
2,250" Radius, 0,625" Border, White on, Blue;
"Bridge", D 85% spacing; "Improvements", D 85% spacing; "Spring 2026", D;
Table of letter and object lefts

B	r	i	d	g	e												
3,500	7,625	10,250	12,000	15,500	19,000												
I	m	p	r	o	v	e	m	e	n	t	s						
3,500	5,500	11,000	14,500	16,875	20,125	23,750	27,250	32,500	36,000	39,375	42,000						
S	p	r	i	n	g	2	0	2	6								
3,500	6,000	9,000	10,875	12,625	15,625	21,125	24,125	27,250	30,250								
☛																	
15,500																	

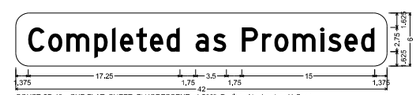
CONST-8 SHR-4L1: 2,250" Radius, 0,625" Border, 0,375" Indent, Black on Orange;
{WORK ZONE} D; {NO PHONE} D; {ZONE} D;
Table of letter and object lefts,

W	O	R	K	Z	O	N	E	
3,000	8,875	14,000	19,000	25,750	31,500	36,625	41,625	
☛								
1,000								
N	O	P	H	O	N	E		
5,625	10,625	19,000	23,875	28,875	34,125	39,000		
Z	O	N	E					
14,875	19,625	24,750	29,750					



CONST-6P-50 SHF-FLAT SHEET FLUORESCENT:
1,500" Radius, No border, Yellow;
"Completed as Promised" Black, D 65% spacing;
Table of letter and object lefts

C	o	m	p	l	e	t	e	d	a	s	
1,500	4,875	7,875	12,375	15,375	18,625	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			



CONST-6P-42 SHF-FLAT SHEET FLUORESCENT: 1,500" Radius, No border, Yellow;
{Completed as Promised} Black D 65% spacing;
Table of letter and object lefts,

C	o	m	p	l	e	t	e	d	a	s	
1,375	3,625	5,750	8,875	10,875	11,750	13,625	15,125	17,000	20,375	22,250	
	P	r	o	m	i	s	e	d			
	25,625	27,875	29,250	31,250	34,500	35,250	37,125	39,000			

SPECIAL SIGN DETAILS
TEMPORARY TRAFFIC
CONTROL
SHEET 11 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	28
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

CONSTRUCTION SEQUENCE

STAGE 1A

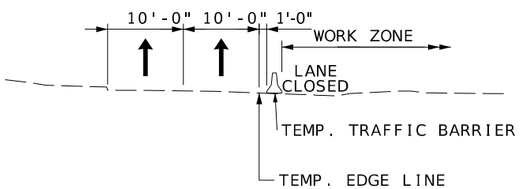
REMOVE EXISTING HOLMES ST. BRIDGE OVER I-670. SCHEDULE FOR REMOVAL OF BRIDGE SHALL ADHERE TO JOB SPECIAL PROVISIONS AND COORDINATED WITH ENGINEER FOR ADVANCE PUBLIC NOTIFICATION.

REMOVE EXISTING STRIPING ALONG I-670 AND INSTALL TEMPORARY STRIPING FOR LONG TERM LANE CLOSURES.

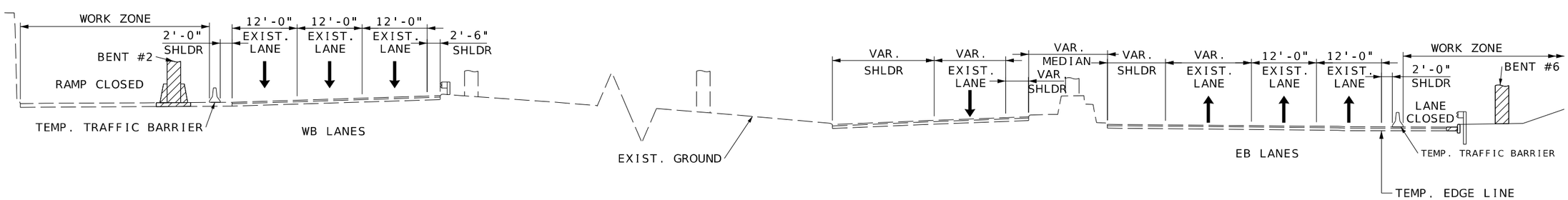
STAGE 1B

BEGIN CONSTRUCTION OF HOLMES ST. BRIDGE END BENTS 1 AND 7.

CONSTRUCT HOLMES ST. BRIDGE INTERMEDIATE BENTS 2 AND 6.



EXIST. 14TH ST.
(FACING EAST)
STAGE 1A THROUGH STAGE 2



EXIST. WB & EB I-670 ROADWAY
(FACING EAST)
STAGE 1B

TRAFFIC CONTROL

STAGE 1A

HOLMES ST:
SET UP HOLMES ST VEHICULAR AND PEDESTRIAN DETOURS.
CLOSE SIDEWALKS NORTH AND SOUTH OF THE BRIDGE.
CLOSE HOLMES ST. NORTH AND SOUTH OF THE BRIDGE.
CLOSE RAMP I-670 WB TO LOCUST ST.
COVER CONFLICTING SIGNS,TRAFFIC SIGNALS, AND PAVEMENT MARKINGS.
CLOSE RIGHT LANE EB 14TH STREET AND LEFT LANE WB TRUMAN RD APPROACHING HOLMES ST.

WB AND EB I-670:
CLOSE WB AND EB I-670 AND RELATED RAMPS USING WEEKEND OR OVERNIGHT CLOSURES ACCORDING TO JOB SPECIAL PROVISIONS.
TRAFFIC TO DETOUR VIA ALT ROUTES USING ADVANCE CMS AND COORDINATING WITH KC SCOUT FOR REGIONAL DMS MESSAGING.

STAGE 1B

EB I-670:
PLACE TEMP. BARRIER TO CLOSE AUXILARY LANE UNDER HOLMES STREET FOR ADJACENT BENT CONSTRUCTION.

WB I-670:
CLOSURE OF I-670 TO LOCUST ST. RAMP CONTINUES.

HOLMES ST:
CLOSURE OF SIDEWALK AND HOLMES ST. CONTINUES.

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	29
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

STAGE 1 NOTES
TRAFFIC CONTROL
SHEET 12 OF 28

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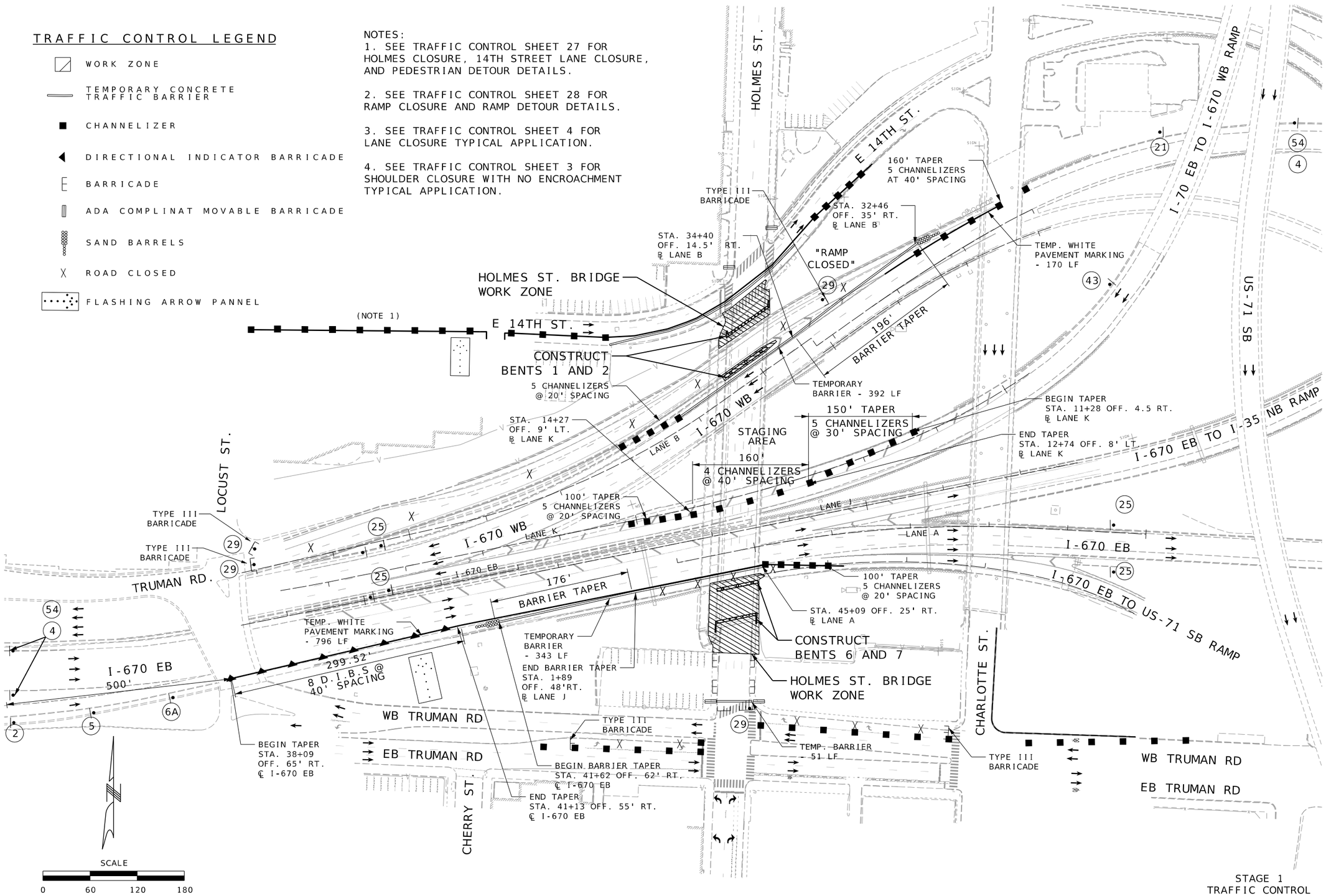
TRAFFIC CONTROL LEGEND

- WORK ZONE
- TEMPORARY CONCRETE TRAFFIC BARRIER
- CHANNELIZER
- DIRECTIONAL INDICATOR BARRICADE
- BARRICADE
- ADA COMPLINAT MOVABLE BARRICADE
- SAND BARRELS
- ROAD CLOSED
- FLASHING ARROW PANNEL

NOTES:
1. SEE TRAFFIC CONTROL SHEET 27 FOR HOLMES CLOSURE, 14TH STREET LANE CLOSURE, AND PEDESTRIAN DETOUR DETAILS.
2. SEE TRAFFIC CONTROL SHEET 28 FOR RAMP CLOSURE AND RAMP DETOUR DETAILS.
3. SEE TRAFFIC CONTROL SHEET 4 FOR LANE CLOSURE TYPICAL APPLICATION.
4. SEE TRAFFIC CONTROL SHEET 3 FOR SHOULDER CLOSURE WITH NO ENCROACHMENT TYPICAL APPLICATION.



STAGE 1
TRAFFIC CONTROL
SHEET 13 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	30
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION | DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

030_TC_013_JKU0024_I60.dgn 10:40:31 AM 3/28/2025

CONSTRUCTION SEQUENCE

STAGE 2

COMPLETE HOLMES STREET BRIDGE END BENTS 1 AND 7.

CONSTRUCT HOLMES STREET BRIDGE INTERMEDIATE BENTS 3, 4, AND 5.

CONSTRUCT HOLMES STREET BRIDGE SUPERSTRUCTURE AND ROADWAY ITEMS.

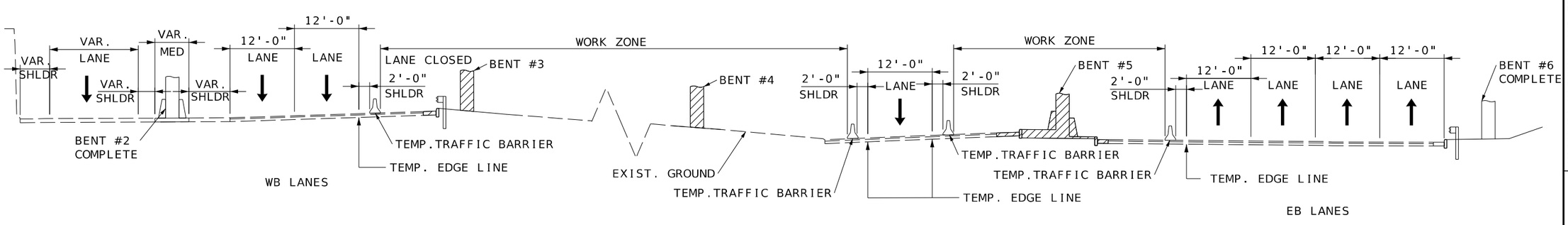
TRAFFIC CONTROL

STAGE 2

EB I-670:
RELOCATE TEMP. BARRIER FROM STAGE 1 TO CLOSE MEDIAN
I-670 SHOULDER. PLACE ADDITIONAL TEMP. BARRIER AS NEEDED.
SHIFT I-670 TRAFFIC TO FOUR 12' LANES.

WB I-670:
OPEN RAMP I-670 WB TO LOCUST ST.
PLACE TEMP. BARRIER TO CLOSE INSIDE I-670 WB SHOULDER.
SHIFT TRAFFIC TO TWO 12' THROUGH LANES.

HOLMES ST:
CLOSURE OF SIDEWALK AND HOLMES ST. CONTINUES.
CLOSURE OF RIGHT LANE EB 14TH STREET AND LEFT LANE
WB TRUMAN RD APPROACHING HOLMES ST. CONTINUES.



EXIST. WB & EB I-670 ROADWAY
(FACING EAST)
STAGE 2

STAGE 2 NOTES
TRAFFIC CONTROL
SHEET 14 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	31
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION	DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

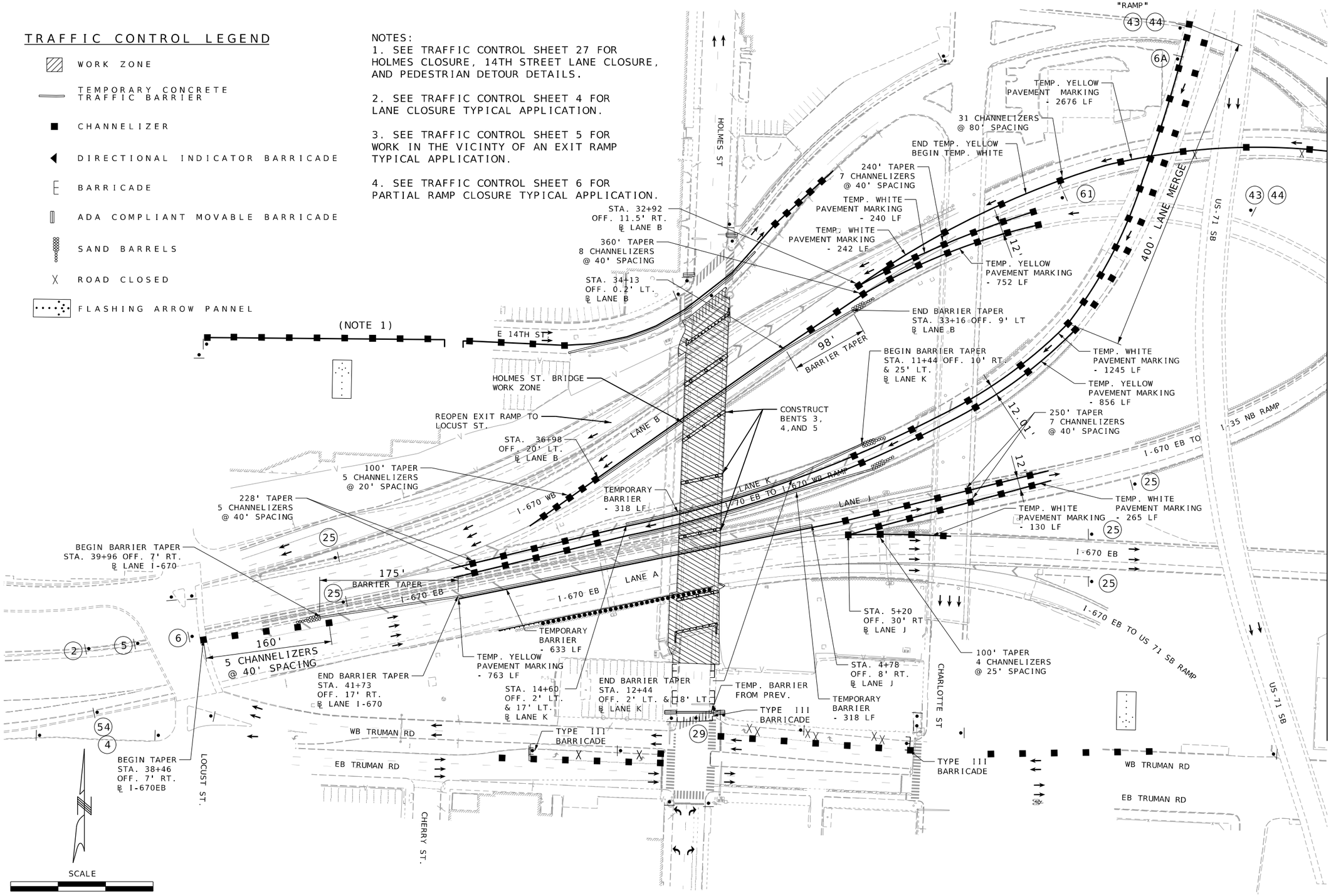
031_TC_014_JKU0024_I10.dgn 10:24:05 AM 3/28/2025

TRAFFIC CONTROL LEGEND

- WORK ZONE
- TEMPORARY CONCRETE TRAFFIC BARRIER
- CHANNELIZER
- DIRECTIONAL INDICATOR BARRICADE
- BARRICADE
- ADA COMPLIANT MOVABLE BARRICADE
- SAND BARRELS
- ROAD CLOSED
- FLASHING ARROW PANNEL

NOTES:

1. SEE TRAFFIC CONTROL SHEET 27 FOR HOLMES CLOSURE, 14TH STREET LANE CLOSURE, AND PEDESTRIAN DETOUR DETAILS.
2. SEE TRAFFIC CONTROL SHEET 4 FOR LANE CLOSURE TYPICAL APPLICATION.
3. SEE TRAFFIC CONTROL SHEET 5 FOR WORK IN THE VICINTY OF AN EXIT RAMP TYPICAL APPLICATION.
4. SEE TRAFFIC CONTROL SHEET 6 FOR PARTIAL RAMP CLOSURE TYPICAL APPLICATION.



STAGE 2
TRAFFIC CONTROL
SHEET 15 OF 28

SEE TRAFFIC CONTROL SHEET 16

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

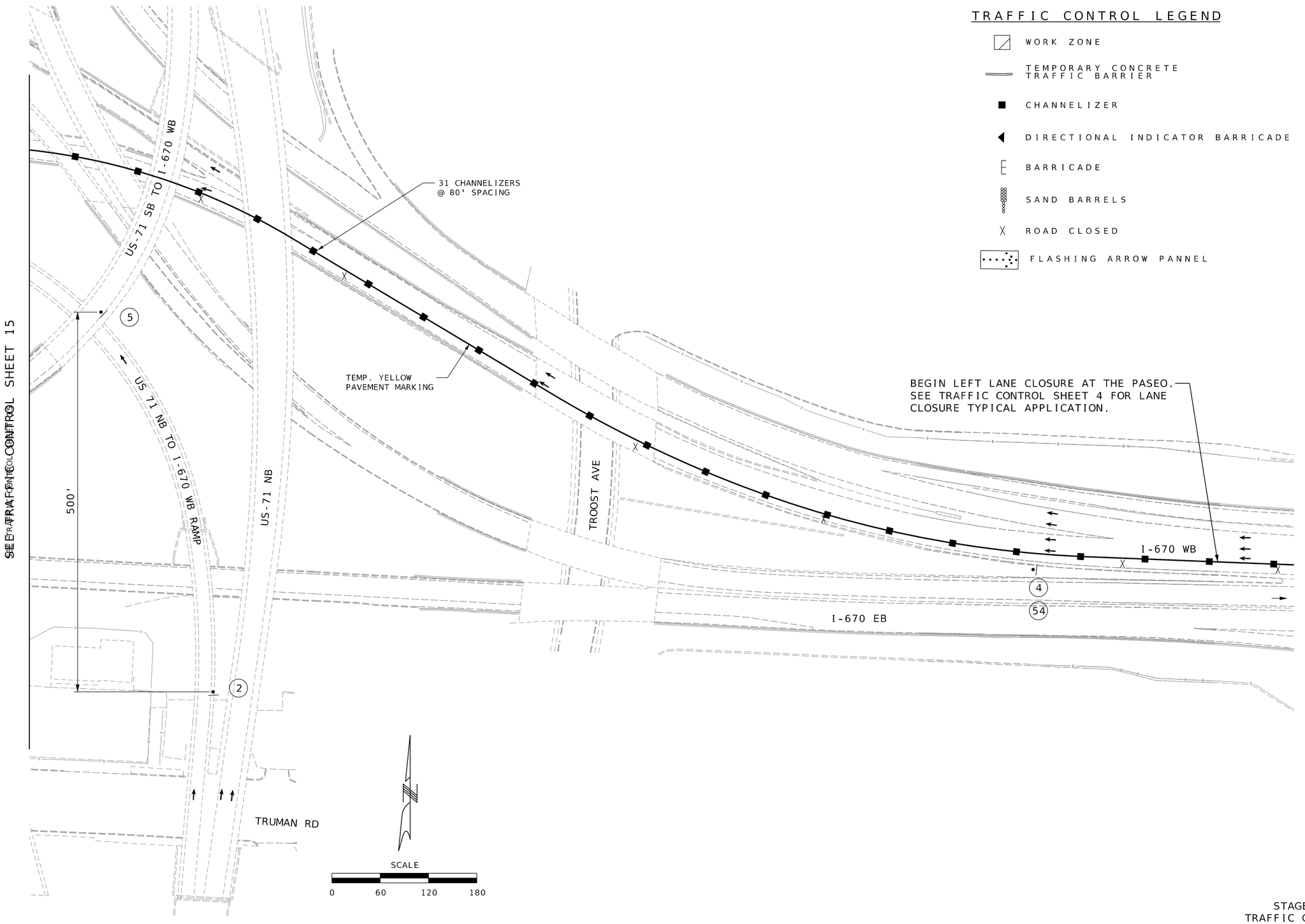
DATE PREPARED	
3/28/2025	
ROUTE	STATE
HOLMES	MO
DISTRICT	SHEET NO.
KC	32
COUNTY	
JACKSON	
JOB NO.	
JKU0024	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
A9599	

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

032-033_TC_015-016_JKU0024_I60.dgn 10:24:36 AM 3/28/2025



TRAFFIC CONTROL LEGEND

- WORK ZONE
- TEMPORARY CONCRETE TRAFFIC BARRIER
- CHANNELIZER
- DIRECTIONAL INDICATOR BARRICADE
- BARRICADE
- SAND BARRELS
- ROAD CLOSED
- FLASHING ARROW PANNEL

STAGE 2
TRAFFIC CONTROL
SHEET 16 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

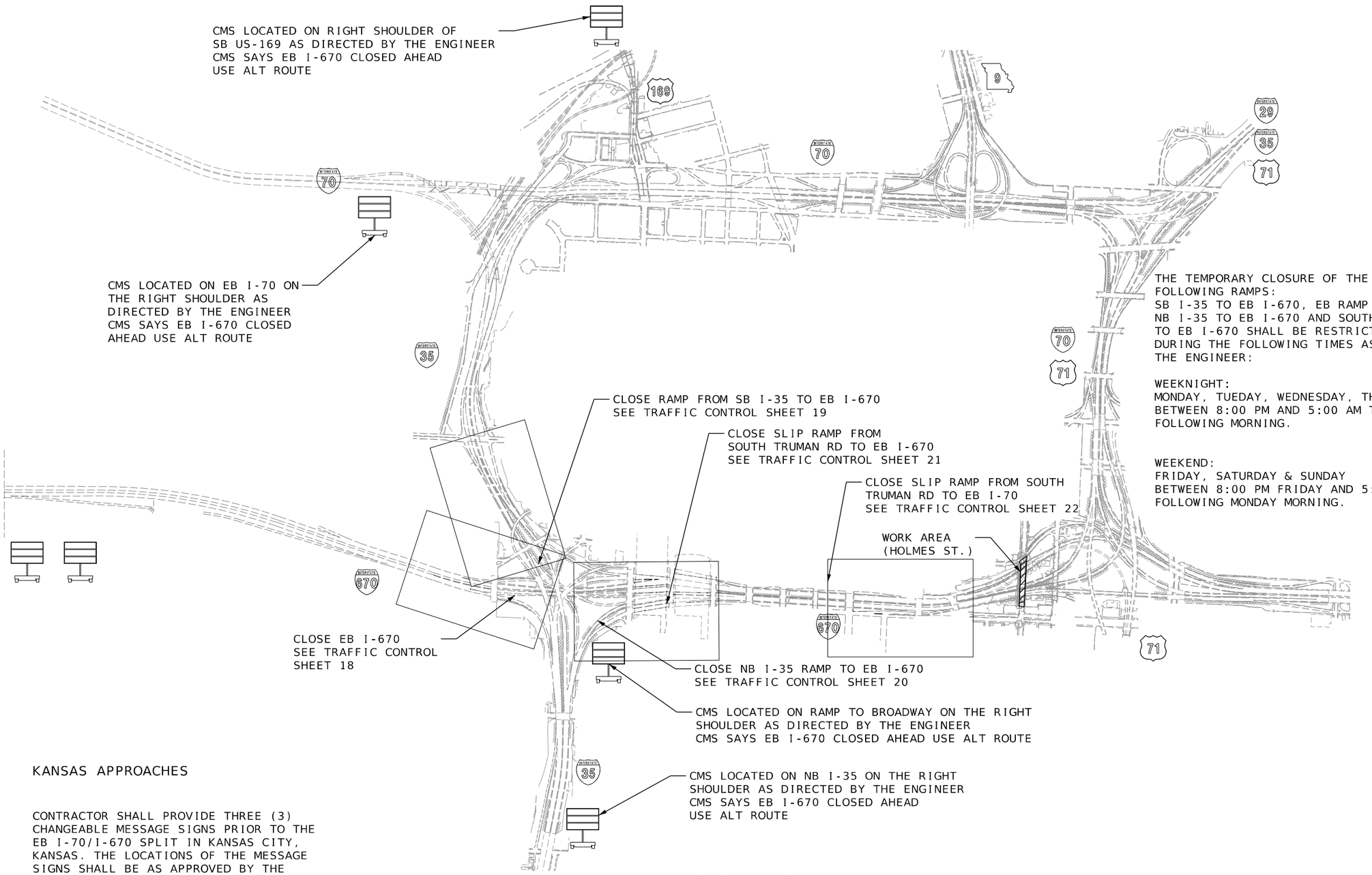
DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	33
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

032-033_TC_015-016_JKU0024_I60.dgn 10:43:36 AM 3/28/2025



THE TEMPORARY CLOSURE OF THE FOLLOWING RAMPS:
SB I-35 TO EB I-670, EB RAMP FROM WYOMING, NB I-35 TO EB I-670 AND SOUTH TRUMAN ROAD TO EB I-670 SHALL BE RESTRICTED TO OCCUR DURING THE FOLLOWING TIMES AS APPROVED BY THE ENGINEER:

WEEKNIGHT:
MONDAY, TUEDAY, WEDNESDAY, THURSDAY
BETWEEN 8:00 PM AND 5:00 AM THE FOLLOWING MORNING.

WEEKEND:
FRIDAY, SATURDAY & SUNDAY
BETWEEN 8:00 PM FRIDAY AND 5:00 AM THE FOLLOWING MONDAY MORNING.

KANSAS APPROACHES

CONTRACTOR SHALL PROVIDE THREE (3) CHANGEABLE MESSAGE SIGNS PRIOR TO THE EB I-70/I-670 SPLIT IN KANSAS CITY, KANSAS. THE LOCATIONS OF THE MESSAGE SIGNS SHALL BE AS APPROVED BY THE ENGINEER.

CONTRACTOR SHALL OBTAIN A PERMIT FROM KDOT FOR THIS WORK.

TRAFFIC CONTROL

1. PHASE 1 THE CLOSURE OF EB I-670 FOR THE REMOVAL OF THE EXISTING HOLMES ST. BRIDGE SHALL BE RESTRICTED TO OCCUR OVER A MAXIMUM PERIOD OF ONE WEEKEND.

TRAFFIC CONTROL
EB WEEKEND CLOSURE
SHEET 17 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	34
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

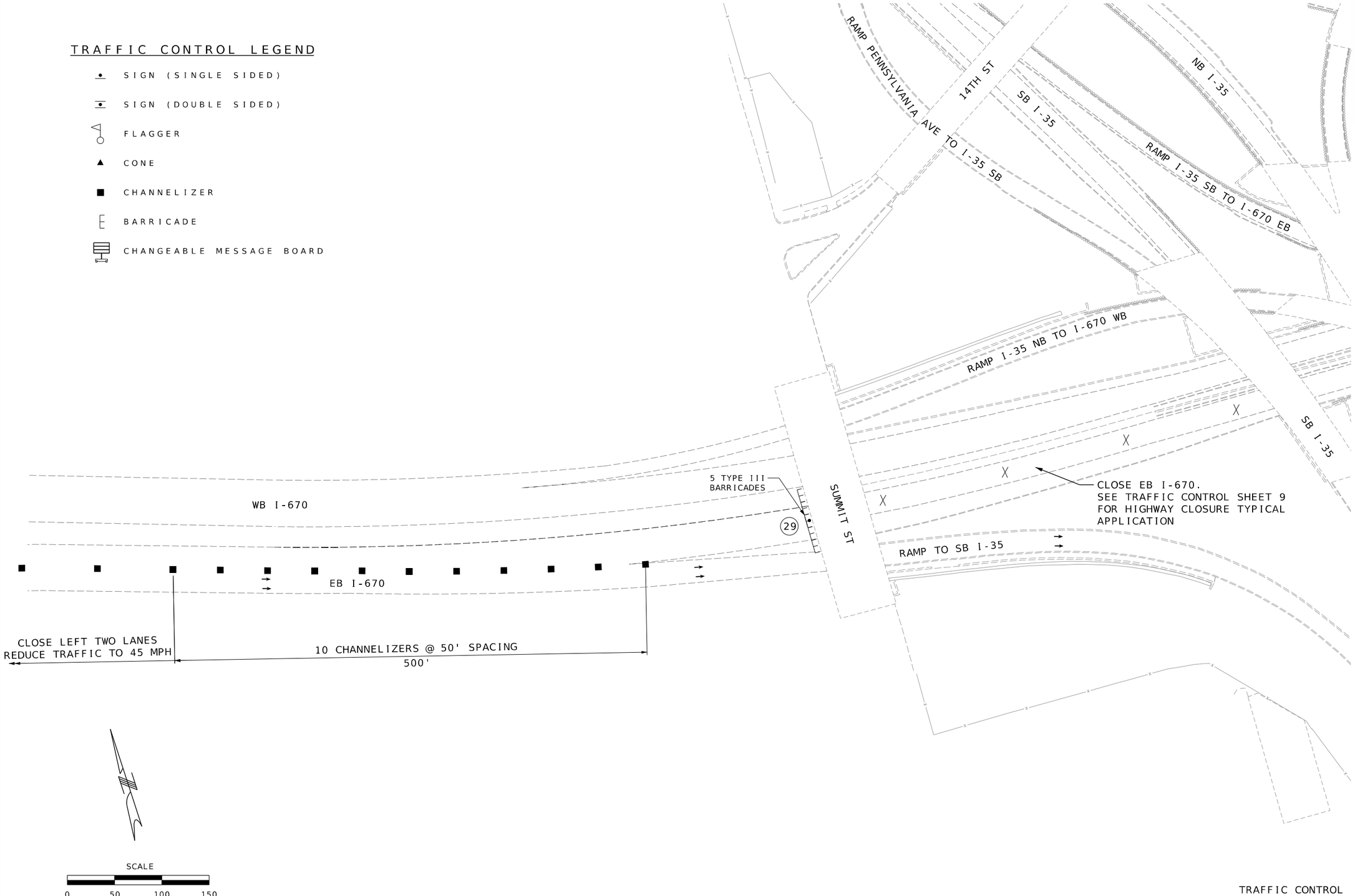
DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

TRAFFIC CONTROL LEGEND

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



TRAFFIC CONTROL
I-670 EB CLOSURE
SHEET 18 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	35
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

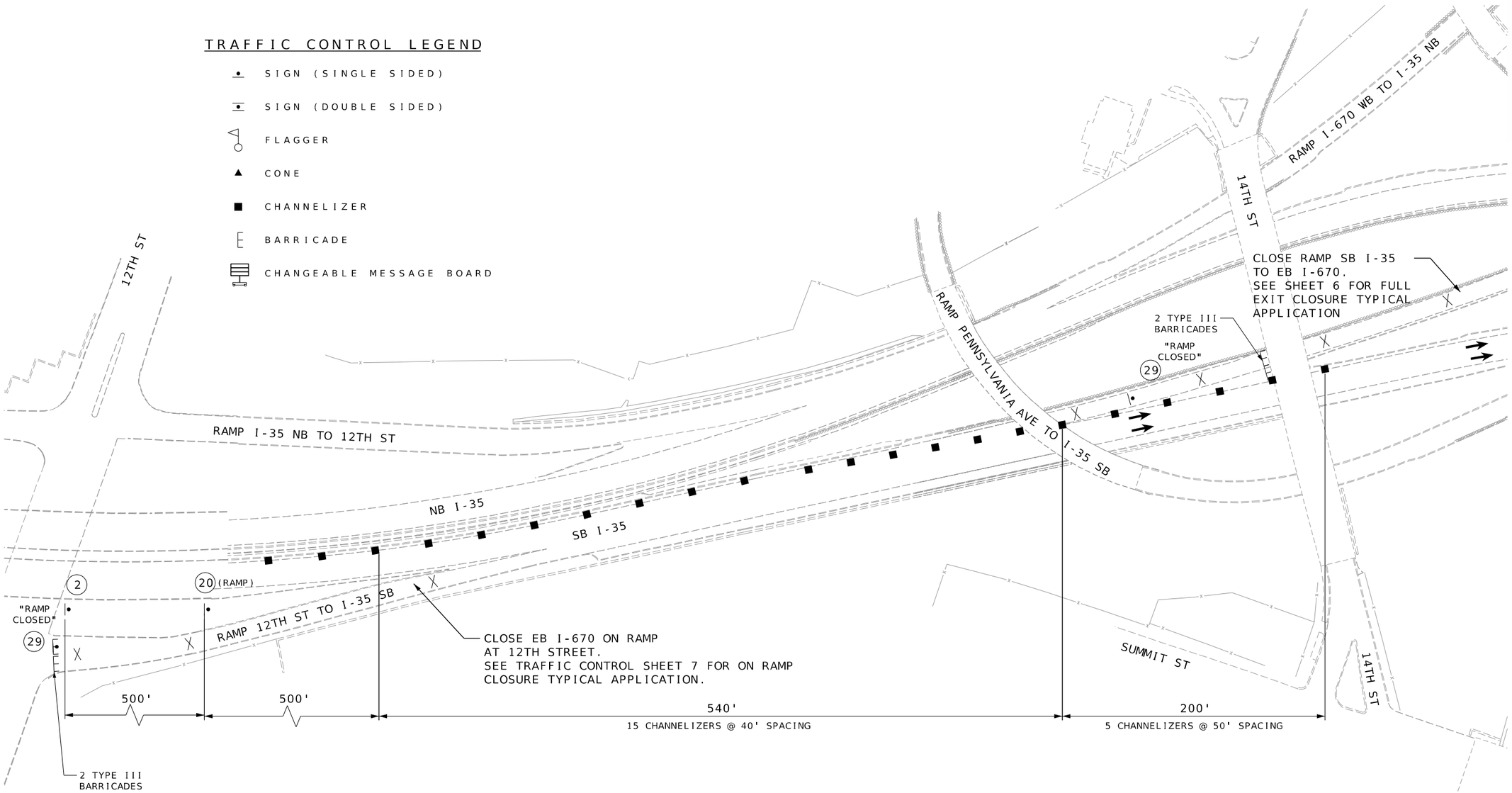
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

034-43_TC_017-026_JKU0024_I1000.dgn 10:24:45 AM 3/28/2025

TRAFFIC CONTROL LEGEND

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



SCALE

0 50 100 150

TRAFFIC CONTROL
I-670 EB CLOSURE
SHEET 19 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	36
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

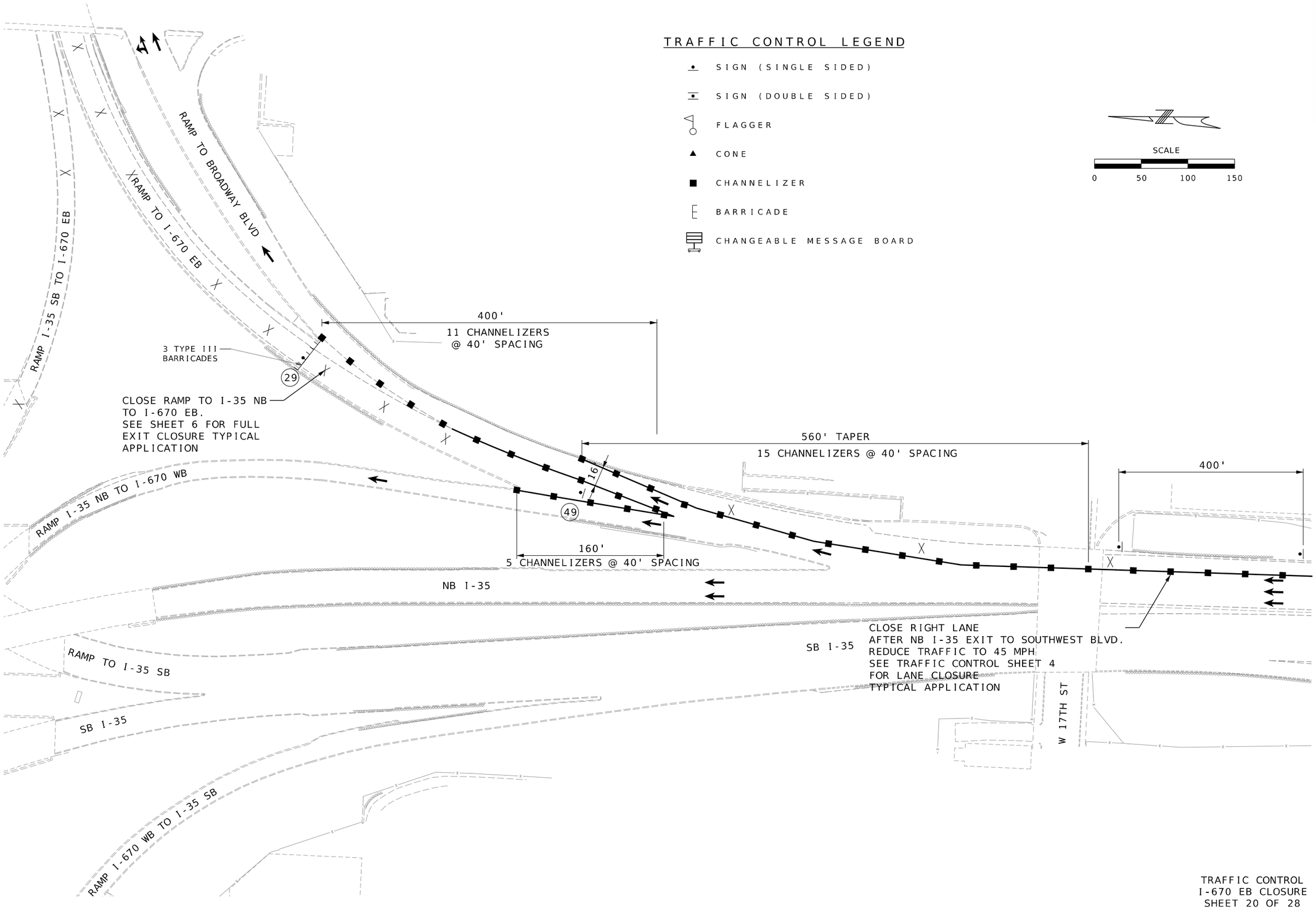
034-43_TC_017-026_JKU0024_I1000.dgn 10:24:45 AM 3/28/2025

TRAFFIC CONTROL LEGEND

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

SCALE

0 50 100 150



TRAFFIC CONTROL
I-670 EB CLOSURE
SHEET 20 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

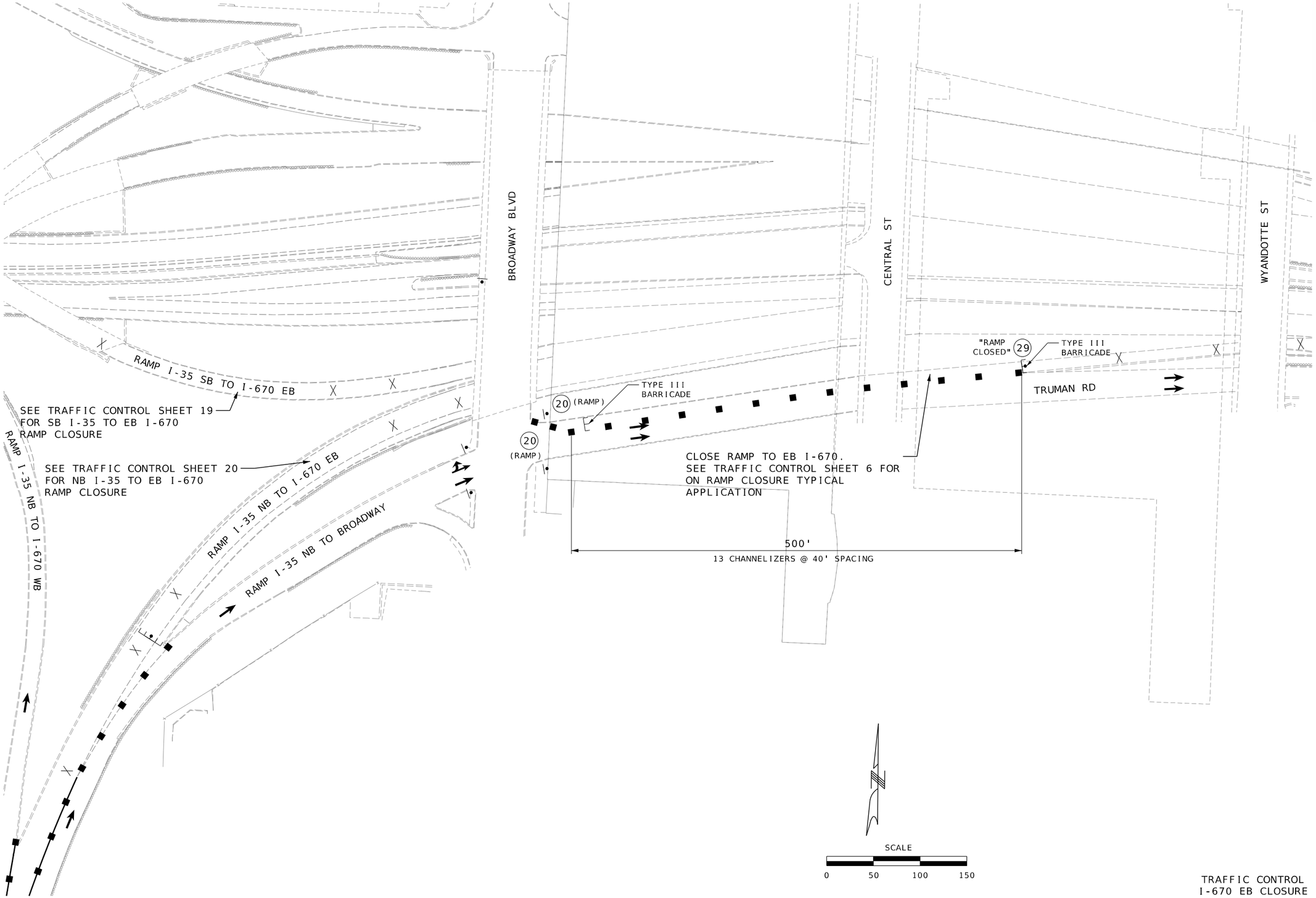
DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	37
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

034-43_TC_017-026_JKU0024_I1000.dgn 10:24:45 AM 3/28/2025



TRAFFIC CONTROL
I-670 EB CLOSURE
SHEET 21 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

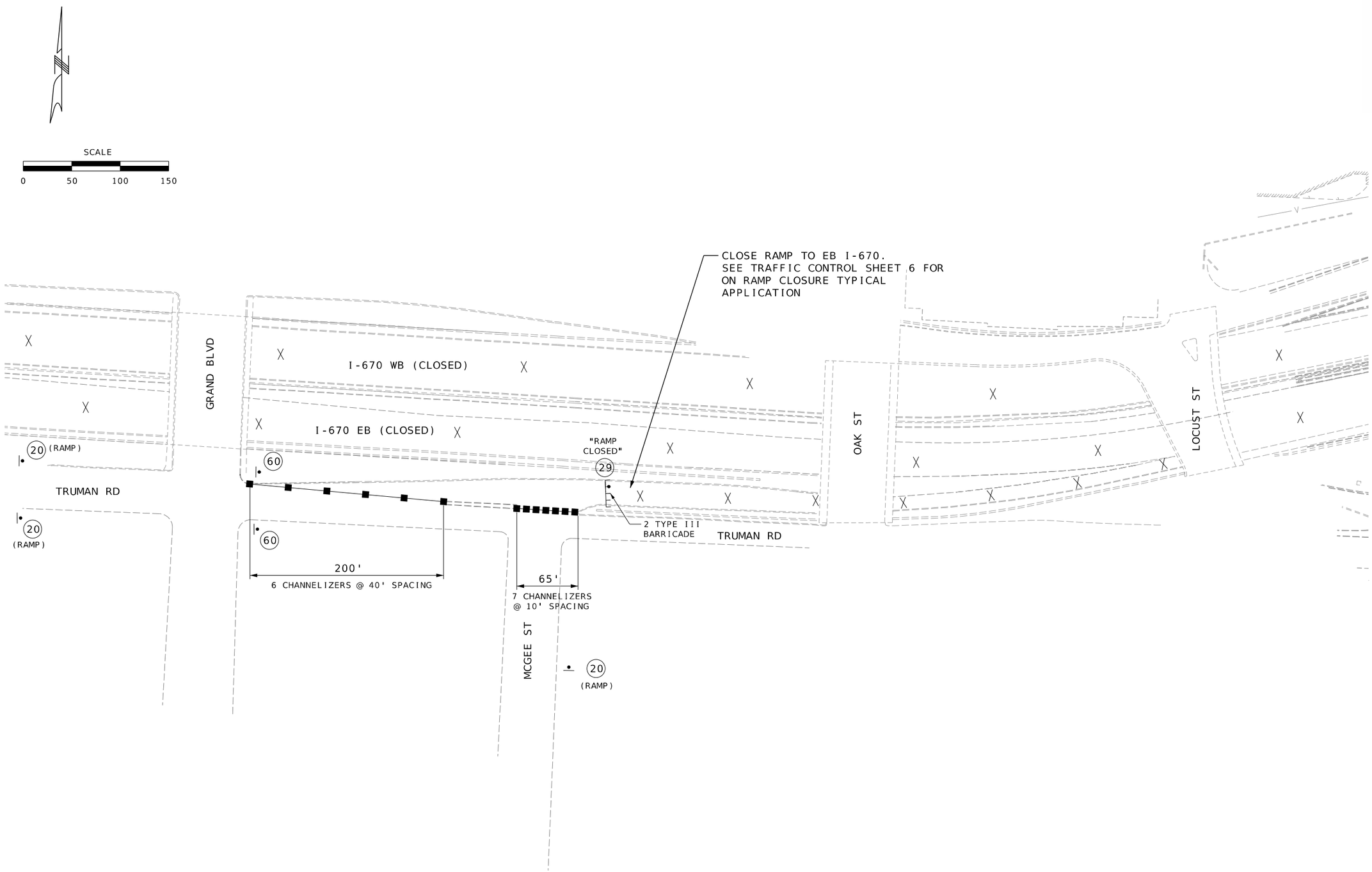
DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	38
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

034-43_TC_017-026_JKU0024_I1000.dgn 10:24:46 AM 3/28/2025



TRAFFIC CONTROL
I-670 EB CLOSURE
SHEET 22 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

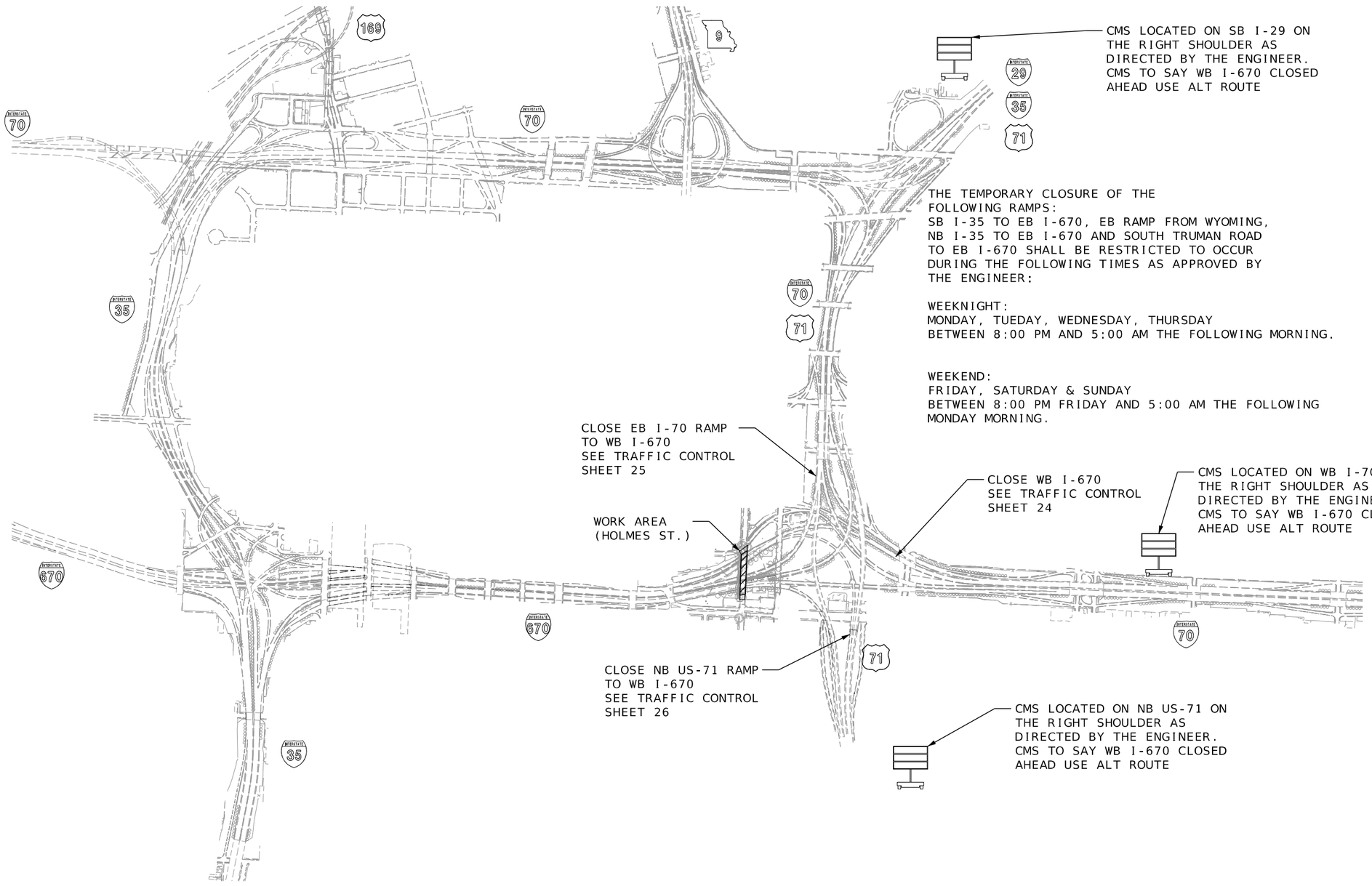
DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	39
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

034-43_TC_017-026_JKU0024_I1000.dgn 10:24:46 AM 3/28/2025



THE TEMPORARY CLOSURE OF THE FOLLOWING RAMPS:
SB I-35 TO EB I-670, EB RAMP FROM WYOMING,
NB I-35 TO EB I-670 AND SOUTH TRUMAN ROAD
TO EB I-670 SHALL BE RESTRICTED TO OCCUR
DURING THE FOLLOWING TIMES AS APPROVED BY
THE ENGINEER:

WEEKNIGHT:
MONDAY, TUEDAY, WEDNESDAY, THURSDAY
BETWEEN 8:00 PM AND 5:00 AM THE FOLLOWING MORNING.

WEEKEND:
FRIDAY, SATURDAY & SUNDAY
BETWEEN 8:00 PM FRIDAY AND 5:00 AM THE FOLLOWING
MONDAY MORNING.

TRAFFIC CONTROL
WB WEEKEND CLOSURE
SHEET 23 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

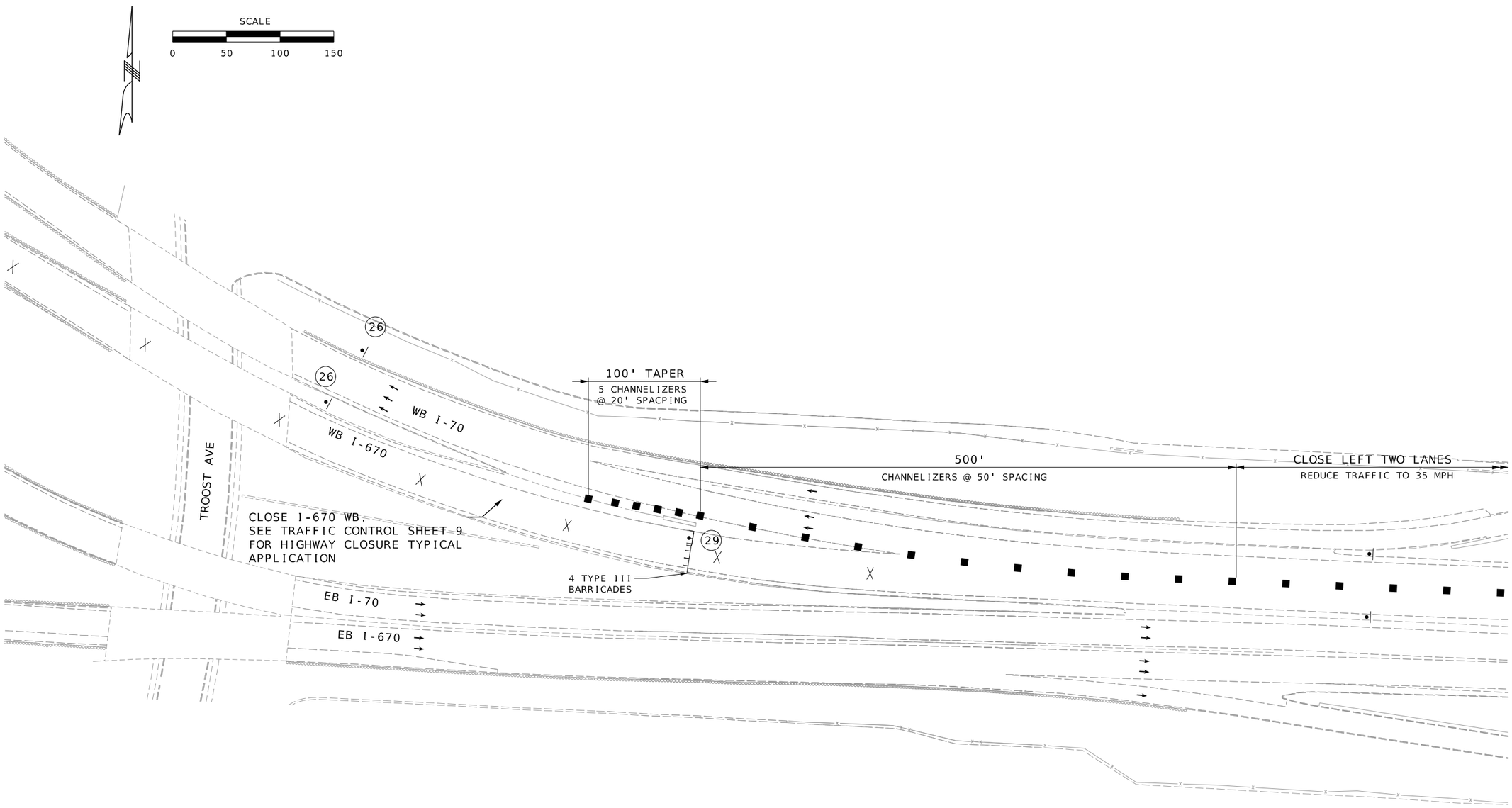
DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	40
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

034-43_TC_017-026_JKU0024_I1000.dgn 10:24:47 AM 3/28/2025



TRAFFIC CONTROL
I-670 WB CLOSURE
SHEET 24 OF 28

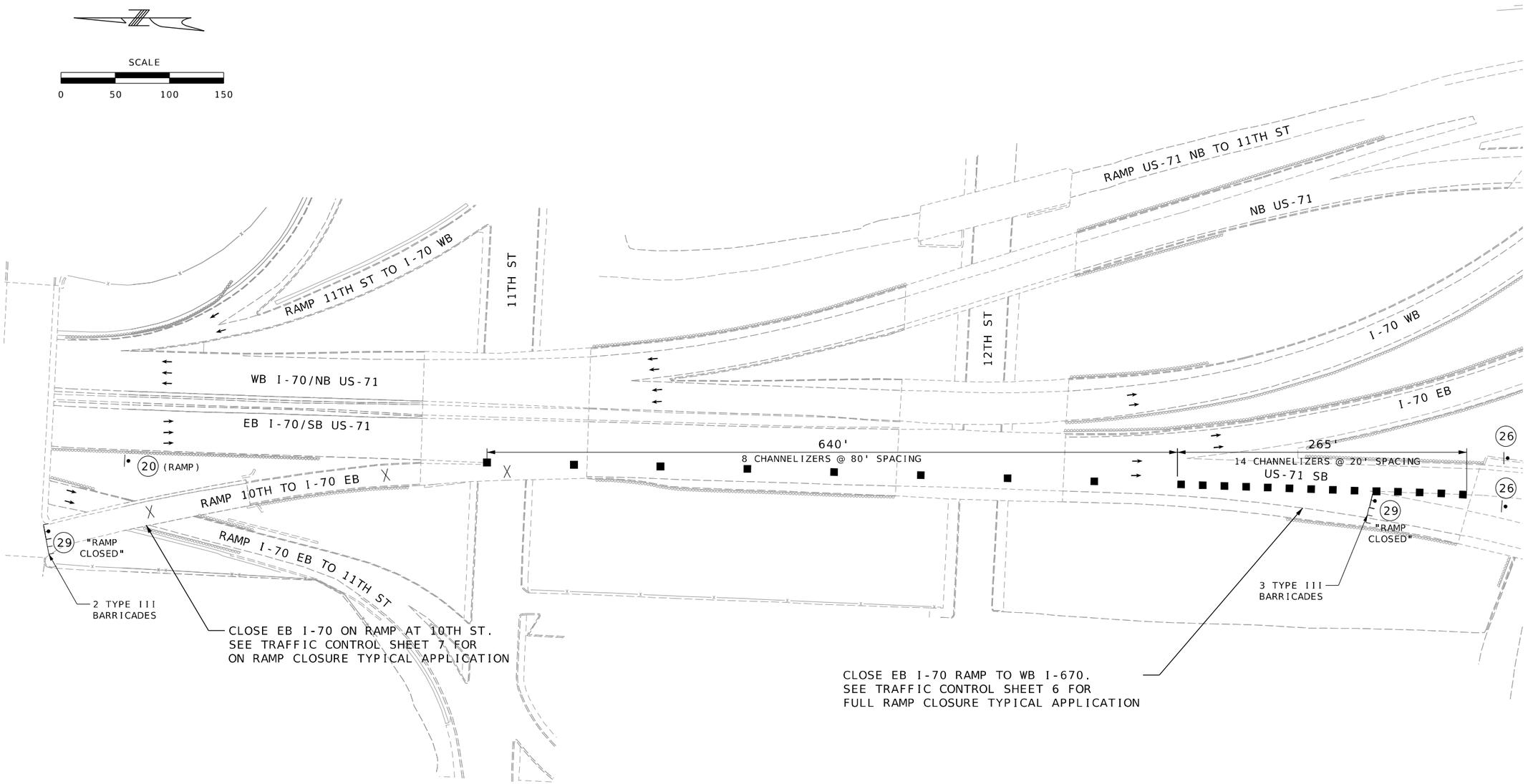
STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	41
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



TRAFFIC CONTROL
I-670 WB CLOSURE
SHEET 25 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

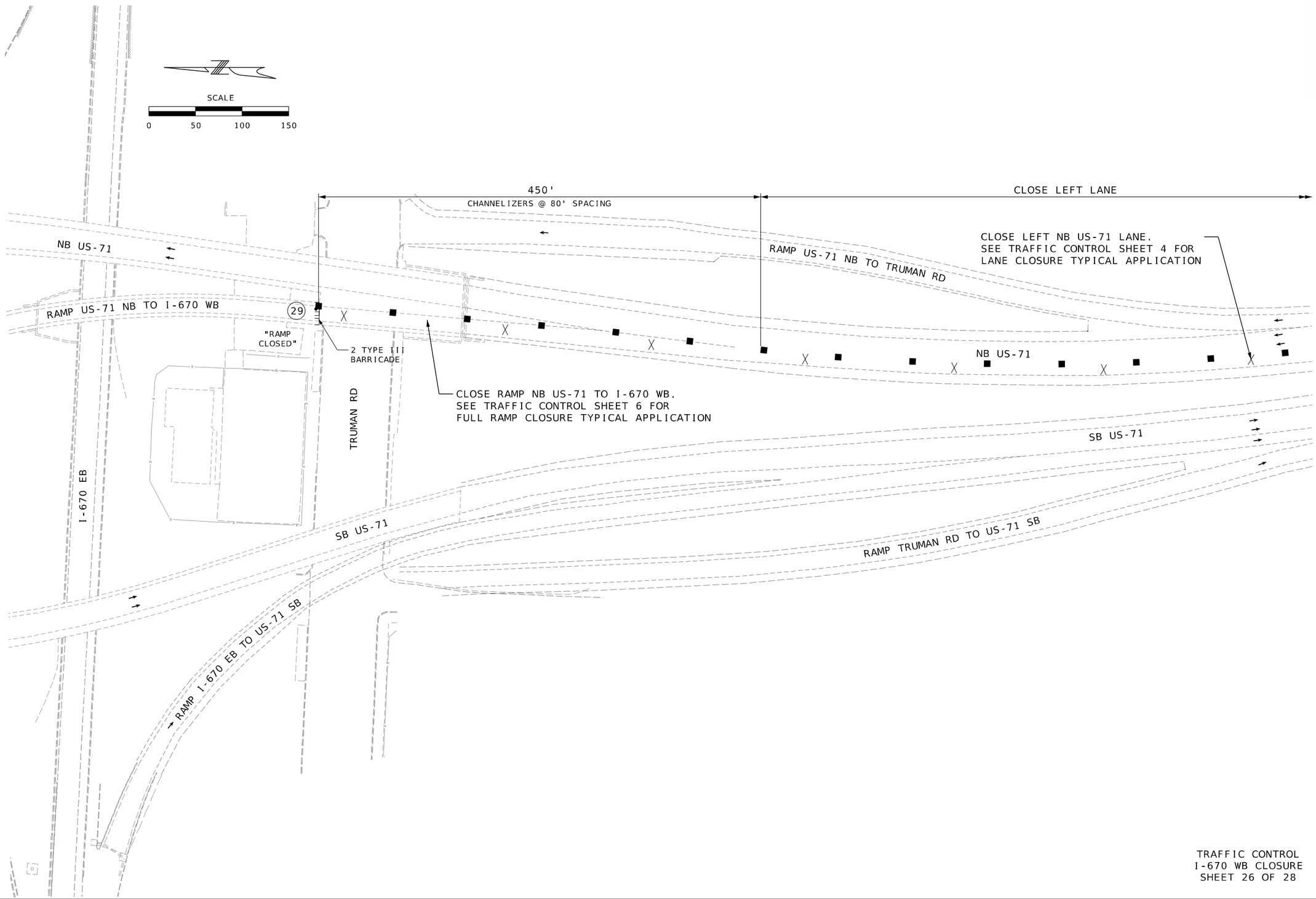
DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	42
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

034-43_TC_017-026_JKU0024_I1000.dgn 10:24:48 AM 3/28/2025



TRAFFIC CONTROL
I-670 WB CLOSURE
SHEET 26 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	43
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

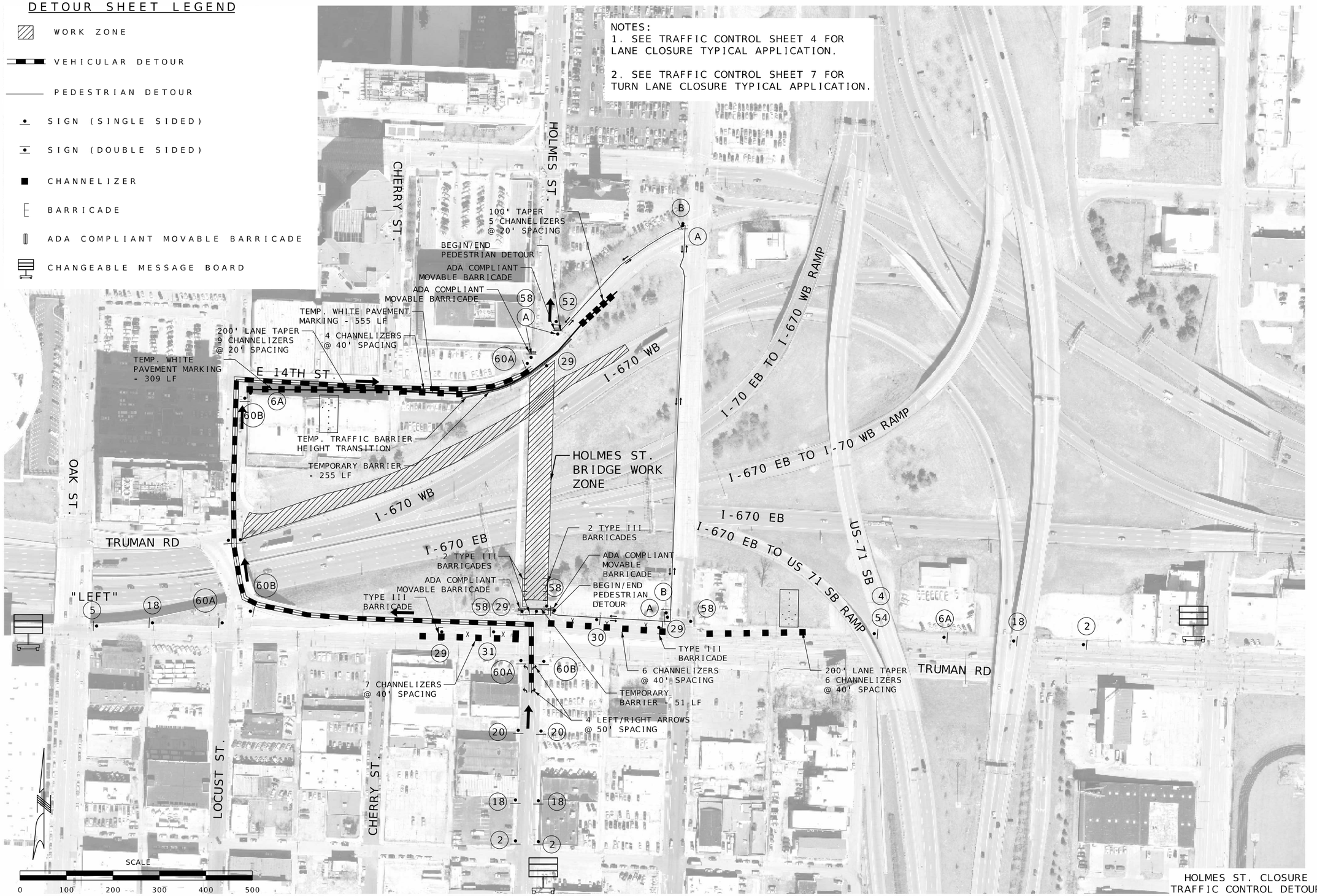
HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

034-43_TC_017-026_JKU0024_I1000.dgn 10:24:48 AM 3/28/2025

DETOUR SHEET LEGEND

- WORK ZONE
- VEHICULAR DETOUR
- PEDESTRIAN DETOUR
- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- CHANNELIZER
- BARRICADE
- ADA COMPLIANT MOVABLE BARRICADE
- CHANGEABLE MESSAGE BOARD

NOTES:
1. SEE TRAFFIC CONTROL SHEET 4 FOR LANE CLOSURE TYPICAL APPLICATION.
2. SEE TRAFFIC CONTROL SHEET 7 FOR TURN LANE CLOSURE TYPICAL APPLICATION.



HOLMES ST. CLOSURE
TRAFFIC CONTROL DETOUR
SHEET 27 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

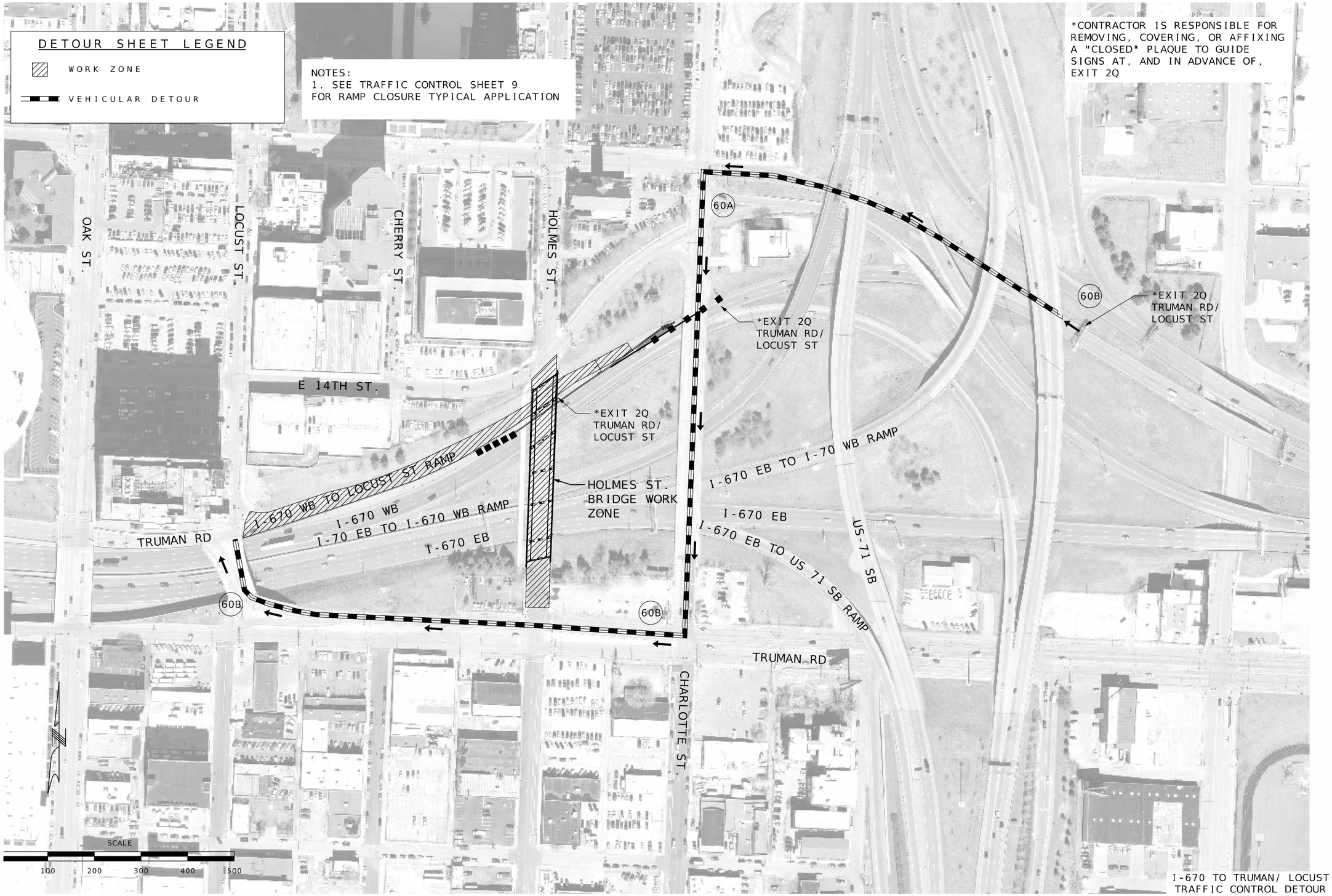
DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	44
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

044_TC_027_JKU0024_I100.dgn 10:45:19 AM 3/28/2025



I-670 TO TRUMAN/ LOCUST
TRAFFIC CONTROL DETOUR
SHEET 28 OF 28

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	45
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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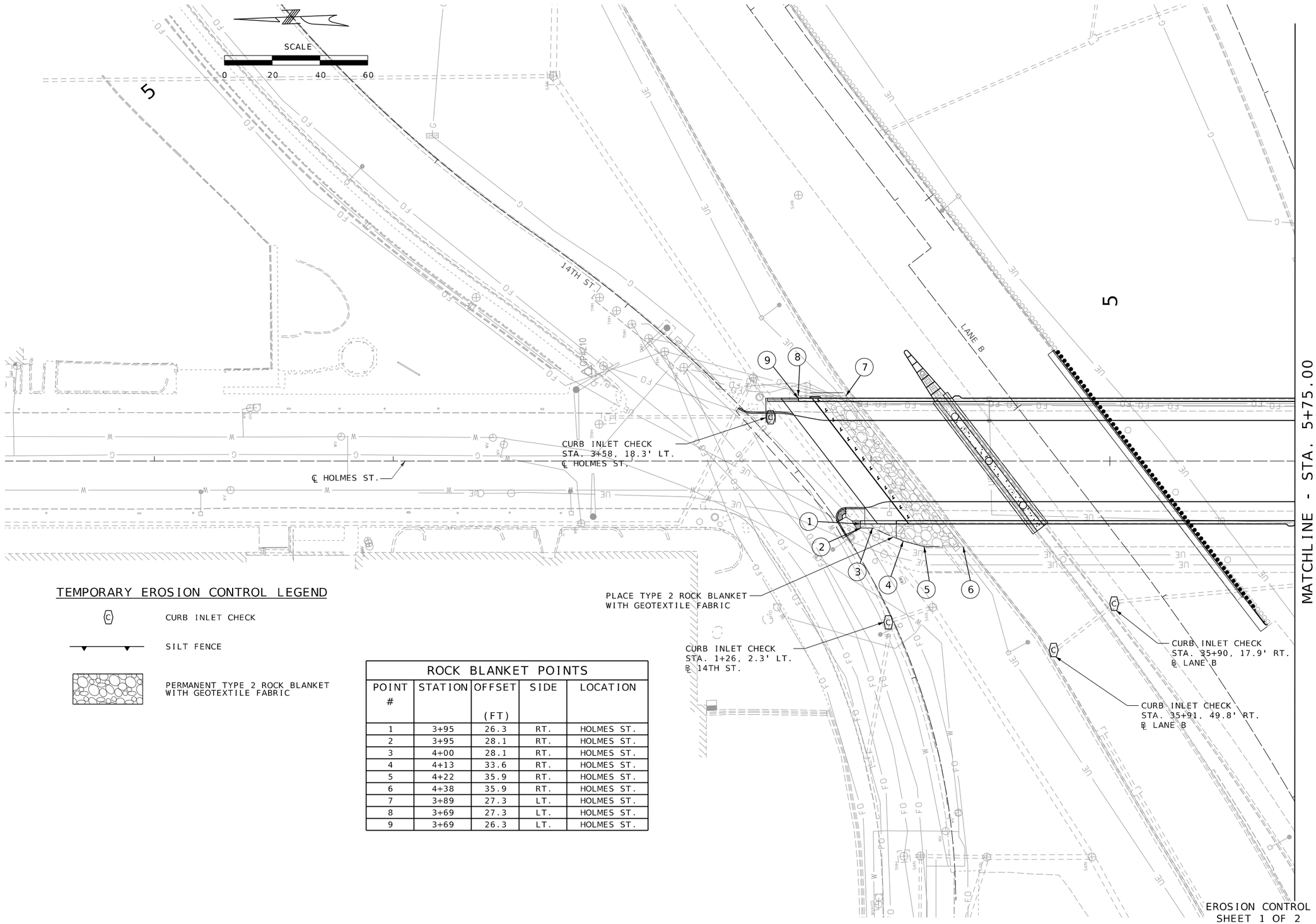


TEMPORARY EROSION CONTROL LEGEND

- CURB INLET CHECK
- SILT FENCE
- PERMANENT TYPE 2 ROCK BLANKET WITH GEOTEXTILE FABRIC

ROCK BLANKET POINTS

POINT #	STATION	OFFSET (FT)	SIDE	LOCATION
1	3+95	26.3	RT.	HOLMES ST.
2	3+95	28.1	RT.	HOLMES ST.
3	4+00	28.1	RT.	HOLMES ST.
4	4+13	33.6	RT.	HOLMES ST.
5	4+22	35.9	RT.	HOLMES ST.
6	4+38	35.9	RT.	HOLMES ST.
7	3+89	27.3	LT.	HOLMES ST.
8	3+69	27.3	LT.	HOLMES ST.
9	3+69	26.3	LT.	HOLMES ST.

EROSION CONTROL
SHEET 1 OF 2

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

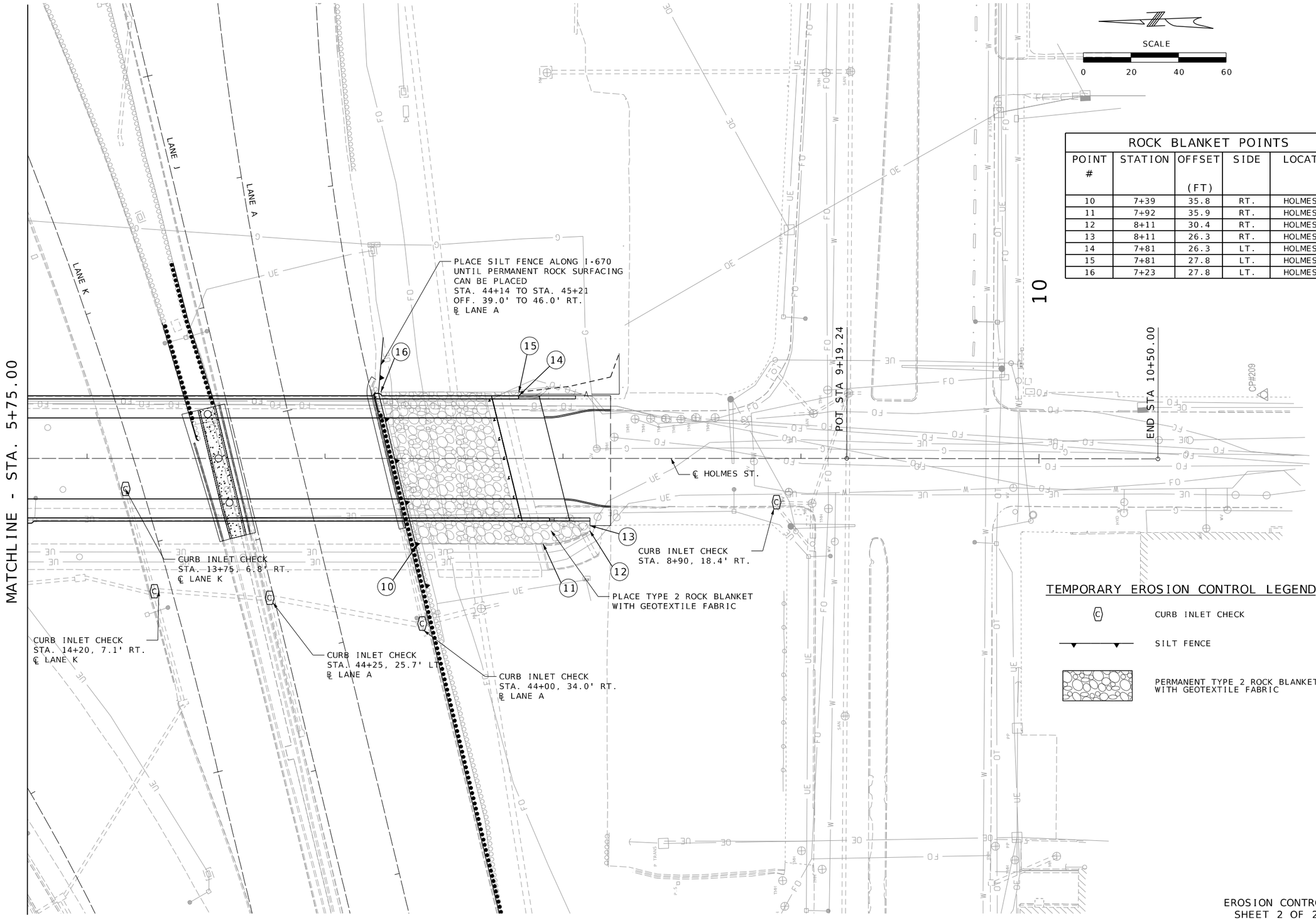
DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	46
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

046-047_EC_01-02_JKU0024_I20.dgn 10:26:03 AM 3/28/2025



ROCK BLANKET POINTS

POINT #	STATION	OFFSET (FT)	SIDE	LOCATION
10	7+39	35.8	RT.	HOLMES ST.
11	7+92	35.9	RT.	HOLMES ST.
12	8+11	30.4	RT.	HOLMES ST.
13	8+11	26.3	RT.	HOLMES ST.
14	7+81	26.3	LT.	HOLMES ST.
15	7+81	27.8	LT.	HOLMES ST.
16	7+23	27.8	LT.	HOLMES ST.

TEMPORARY EROSION CONTROL LEGEND

- CURB INLET CHECK
- SILT FENCE
- PERMANENT TYPE 2 ROCK BLANKET WITH GEOTEXTILE FABRIC

EROSION CONTROL
SHEET 2 OF 2

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

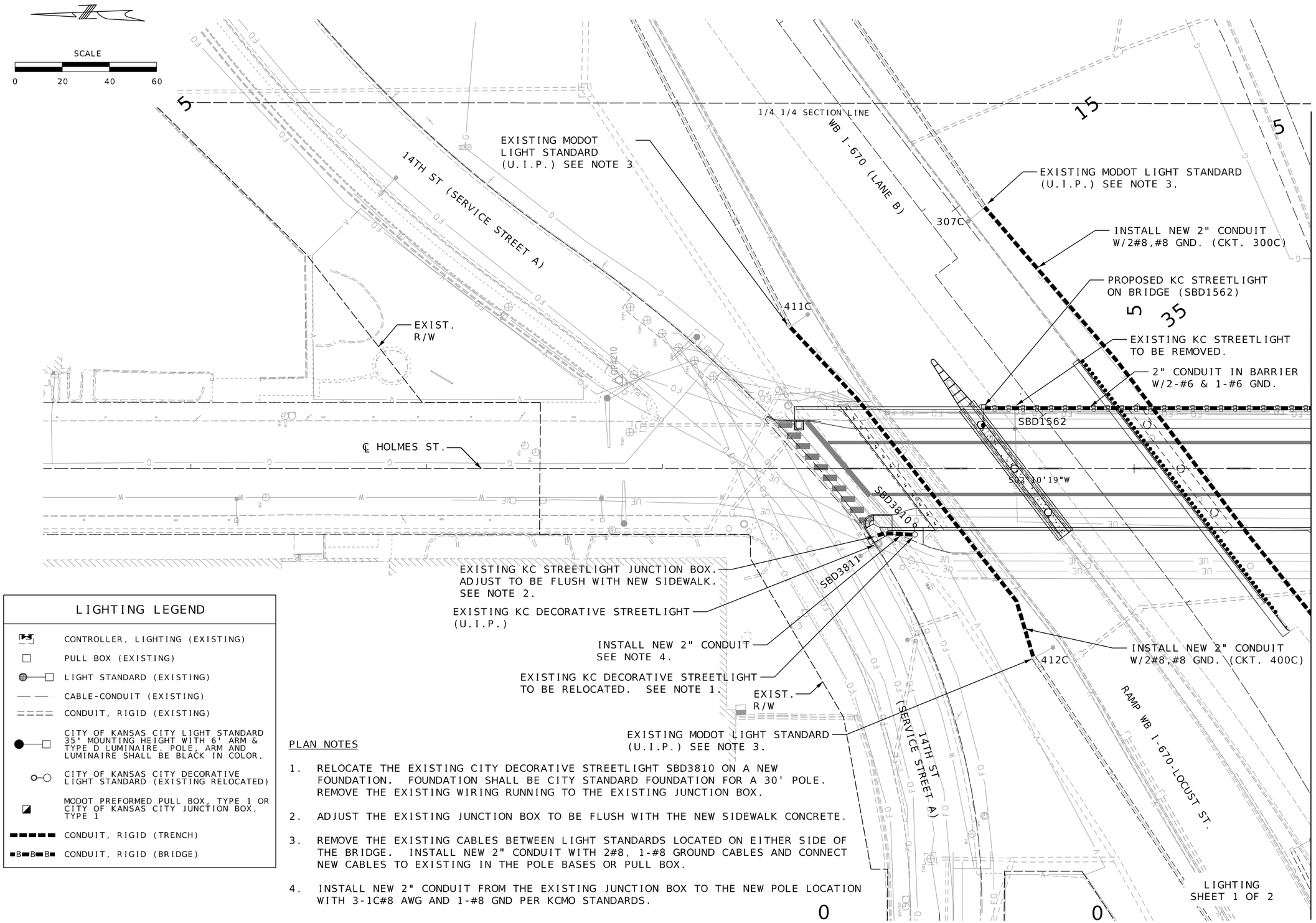
DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	47
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

046-047_EC_01-02_JKU0024_I20.dgn 10:26:05 AM 3/28/2025



LIGHTING LEGEND

- CONTROLLER, LIGHTING (EXISTING)
- PULL BOX (EXISTING)
- LIGHT STANDARD (EXISTING)
- CABLE-CONDUIT (EXISTING)
- CONDUIT, RIGID (EXISTING)
- CITY OF KANSAS CITY LIGHT STANDARD 35' MOUNTING HEIGHT WITH 6' ARM & TYPE D LUMINAIRE. POLE, ARM AND LUMINAIRE SHALL BE BLACK IN COLOR.
- CITY OF KANSAS CITY DECORATIVE LIGHT STANDARD (EXISTING RELOCATED)
- MODOT PREFORMED PULL BOX, TYPE 1 OR CITY OF KANSAS CITY JUNCTION BOX, TYPE 1
- CONDUIT, RIGID (TRENCH)
- CONDUIT, RIGID (BRIDGE)

PLAN NOTES

1. RELOCATE THE EXISTING CITY DECORATIVE STREETLIGHT SBD3810 ON A NEW FOUNDATION. FOUNDATION SHALL BE CITY STANDARD FOUNDATION FOR A 30' POLE. REMOVE THE EXISTING WIRING RUNNING TO THE EXISTING JUNCTION BOX.
2. ADJUST THE EXISTING JUNCTION BOX TO BE FLUSH WITH THE NEW SIDEWALK CONCRETE.
3. REMOVE THE EXISTING CABLES BETWEEN LIGHT STANDARDS LOCATED ON EITHER SIDE OF THE BRIDGE. INSTALL NEW 2" CONDUIT WITH 2#8, 1-#8 GROUND CABLES AND CONNECT NEW CABLES TO EXISTING IN THE POLE BASES OR PULL BOX.
4. INSTALL NEW 2" CONDUIT FROM THE EXISTING JUNCTION BOX TO THE NEW POLE LOCATION WITH 3-1C#8 AWG AND 1-#8 GND PER KCMO STANDARDS.

STATE OF MISSOURI
PAUL D. HUNTER
NUMBER E-29901
REGISTERED PROFESSIONAL ENGINEER
3/28/25

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	48
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

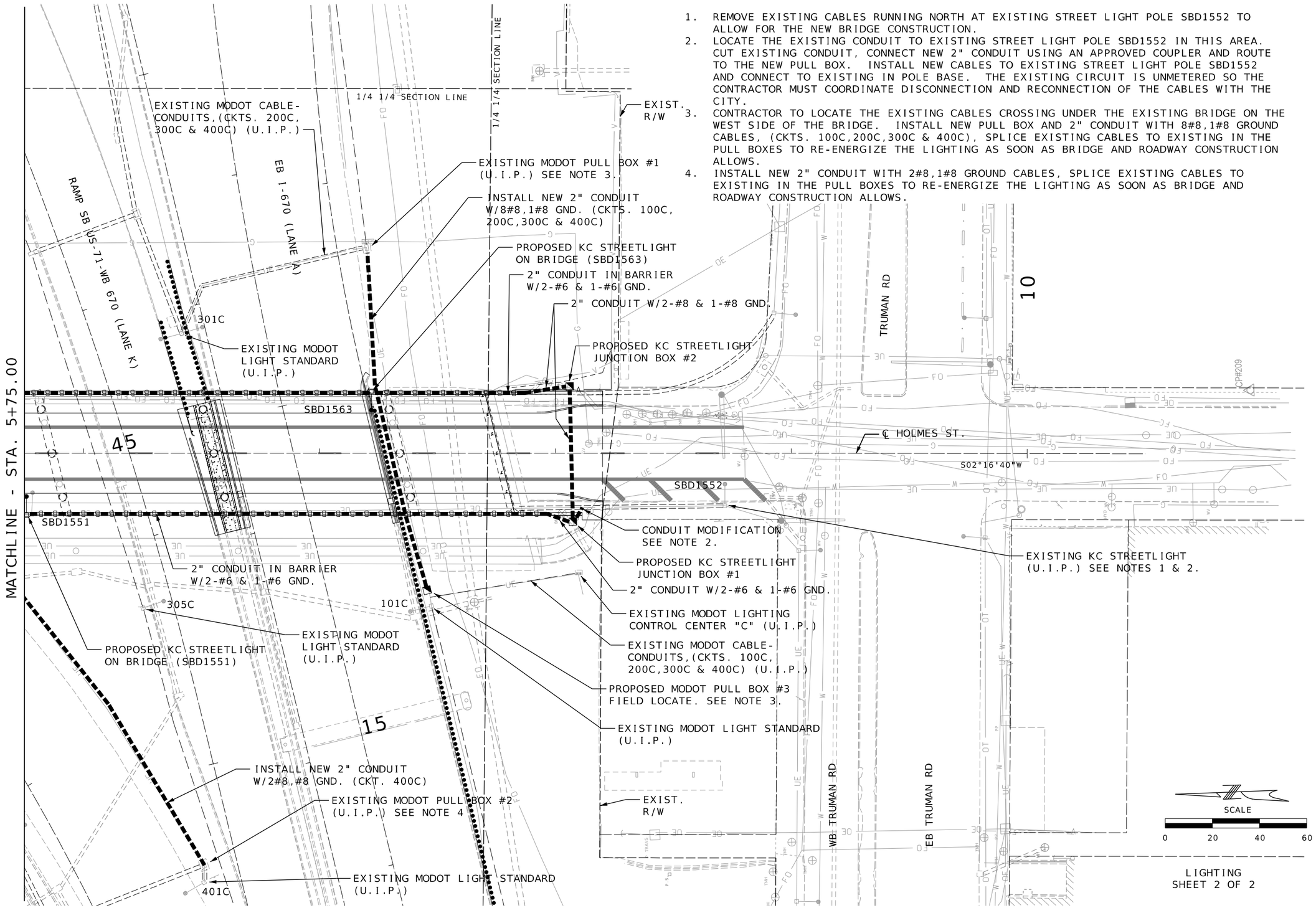
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

048-049_LT_01-02_JKU0024_I20.dgn 10:52:17 AM 3/28/2025

PLAN NOTES

1. REMOVE EXISTING CABLES RUNNING NORTH AT EXISTING STREET LIGHT POLE SBD1552 TO ALLOW FOR THE NEW BRIDGE CONSTRUCTION.
2. LOCATE THE EXISTING CONDUIT TO EXISTING STREET LIGHT POLE SBD1552 IN THIS AREA. CUT EXISTING CONDUIT, CONNECT NEW 2" CONDUIT USING AN APPROVED COUPLER AND ROUTE TO THE NEW PULL BOX. INSTALL NEW CABLES TO EXISTING STREET LIGHT POLE SBD1552 AND CONNECT TO EXISTING IN POLE BASE. THE EXISTING CIRCUIT IS UNMETERED SO THE CONTRACTOR MUST COORDINATE DISCONNECTION AND RECONNECTION OF THE CABLES WITH THE CITY.
3. CONTRACTOR TO LOCATE THE EXISTING CABLES CROSSING UNDER THE EXISTING BRIDGE ON THE WEST SIDE OF THE BRIDGE. INSTALL NEW PULL BOX AND 2" CONDUIT WITH 8#8,1#8 GROUND CABLES, (CKTS. 100C,200C,300C & 400C), SPLICE EXISTING CABLES TO EXISTING IN THE PULL BOXES TO RE-ENERGIZE THE LIGHTING AS SOON AS BRIDGE AND ROADWAY CONSTRUCTION ALLOWS.
4. INSTALL NEW 2" CONDUIT WITH 2#8,1#8 GROUND CABLES, SPLICE EXISTING CABLES TO EXISTING IN THE PULL BOXES TO RE-ENERGIZE THE LIGHTING AS SOON AS BRIDGE AND ROADWAY CONSTRUCTION ALLOWS.



LIGHTING
SHEET 2 OF 2

STATE OF MISSOURI
PAUL D. HUNTER
NUMBER E-29901
RESTRICTED PROFESSIONAL ENGINEER
3/28/25

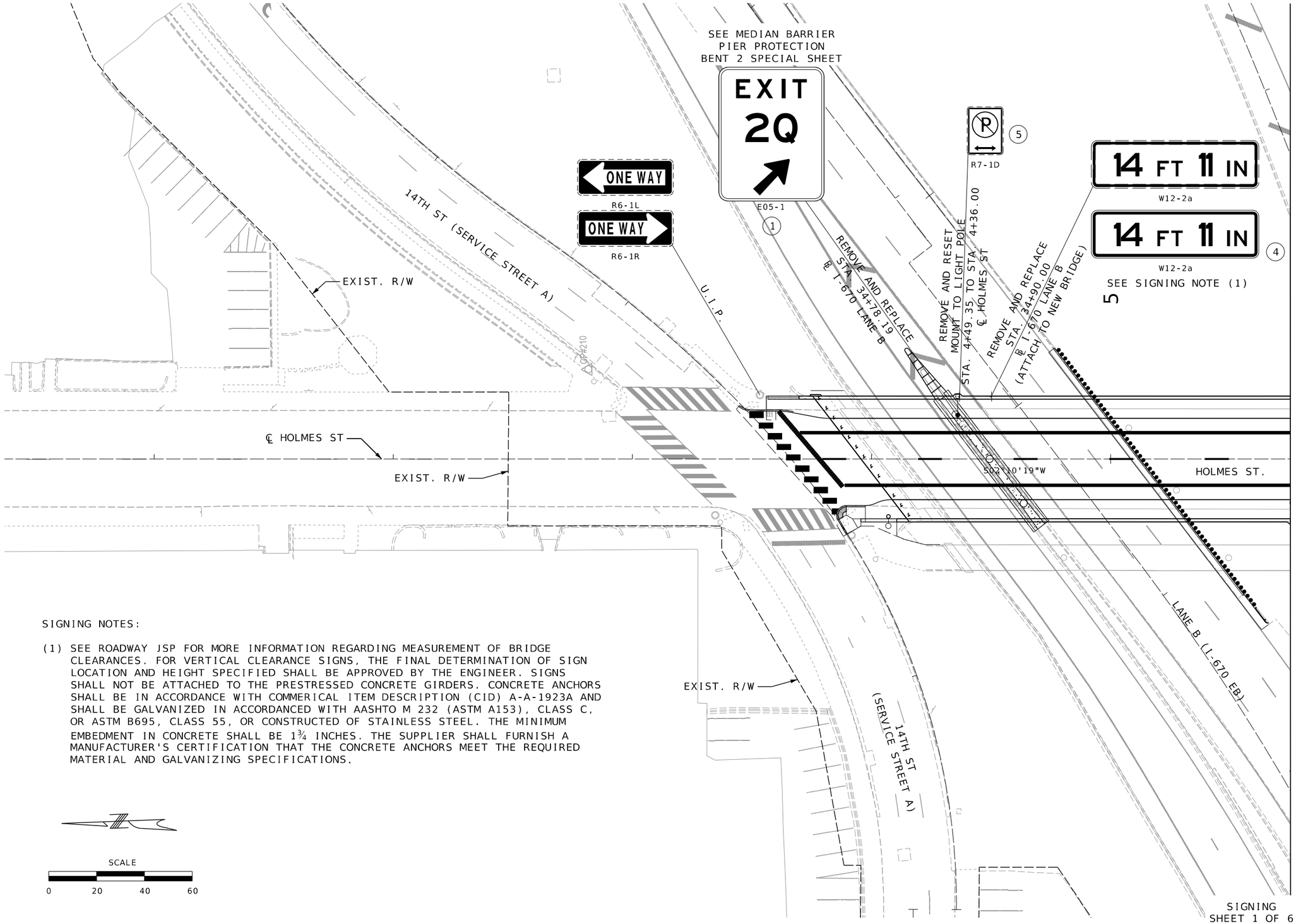
DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	49
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



SIGNING NOTES:

(1) SEE ROADWAY JSP FOR MORE INFORMATION REGARDING MEASUREMENT OF BRIDGE CLEARANCES. FOR VERTICAL CLEARANCE SIGNS, THE FINAL DETERMINATION OF SIGN LOCATION AND HEIGHT SPECIFIED SHALL BE APPROVED BY THE ENGINEER. SIGNS SHALL NOT BE ATTACHED TO THE PRESTRESSED CONCRETE GIRDERS. CONCRETE ANCHORS SHALL BE IN ACCORDANCE WITH COMMERICAL ITEM DESCRIPTION (CID) A-A-1923A AND SHALL BE GALVANIZED IN ACCORDANCED WITH AASHTO M 232 (ASTM A153), CLASS C, OR ASTM B695, CLASS 55, OR CONSTRUCTED OF STAINLESS STEEL. THE MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1¾ INCHES. THE SUPPLIER SHALL FURNISH A MANUFACTURER'S CERTIFICATION THAT THE CONCRETE ANCHORS MEET THE REQUIRED MATERIAL AND GALVANIZING SPECIFICATIONS.

SIGNING
SHEET 1 OF 6

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	50
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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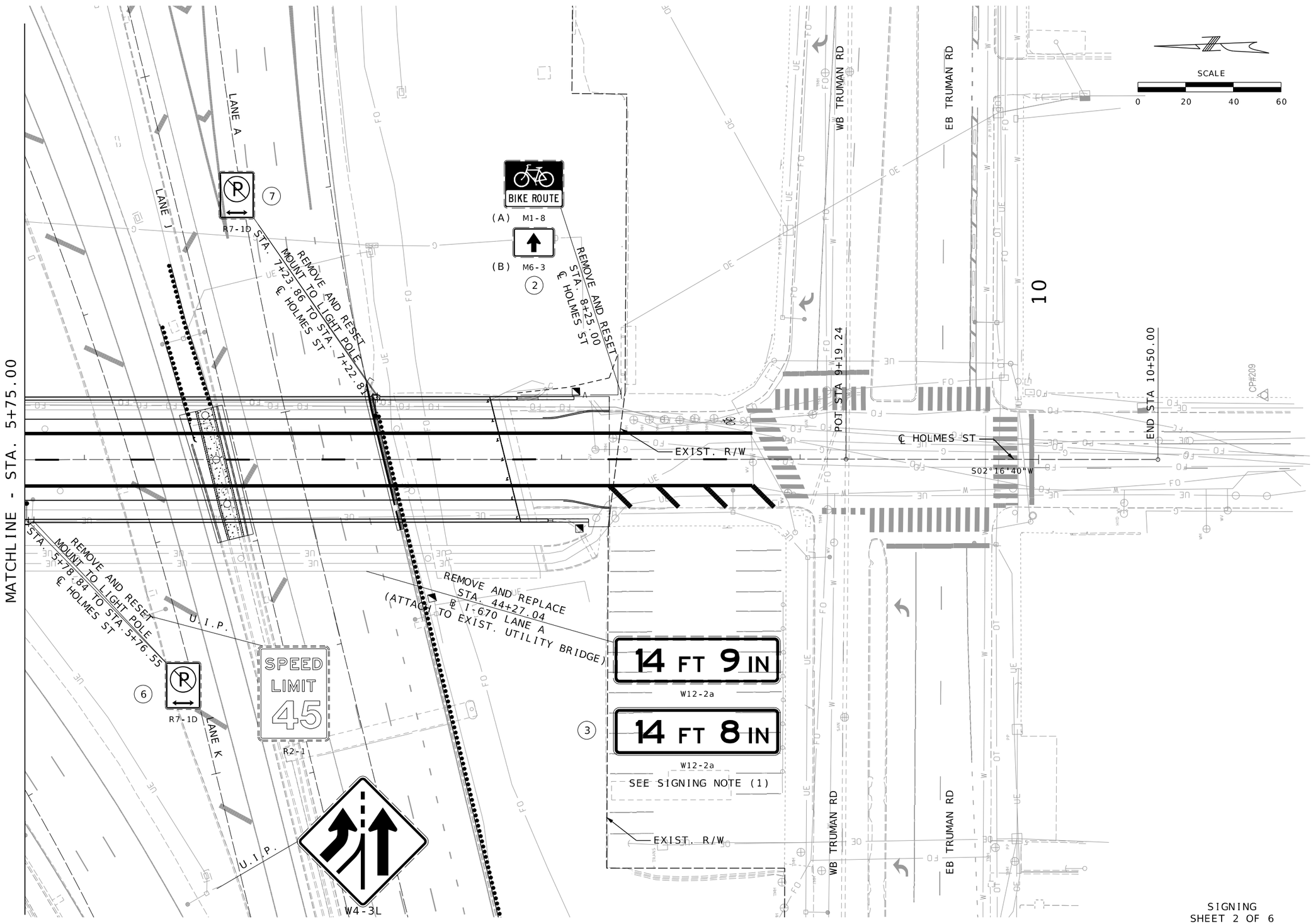


SIGNING
SHEET 2 OF 6

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	51
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

050-051_SN_01-02_JKU0024_I20.dgn 10:56:55 AM 3/28/2025

EFFECTIVE: 07-01-2022

SIGNS (902 SIGNAL SIGNS TABULATED ON D-37A SHEET)						CONCRETE FOOTINGS EMBEDDED	STRUCTURAL STEEL POSTS *						PIPE POSTS *					BACKING BARS **				U-CHANNEL POST	PERFORATED SQUARE STEEL TUBE												BREAK-AWAY ASSEMBLY	REMARKS AND OTHER REQUIRED ITEMS
																							2 IN. POST						2.5 IN. POST							
																										ANCHORS						ANCHORS			
SIGN NO.	SIGN SIZE	STATION	HORZ CLEAR IF NOT STD	LOCATION	SIGN DTL. SHT. NO.	ITEM NO. 9031010	POST DES NO.	POST NO.1	POST NO.2	POST NO.3	LBS PER FT	TOTAL ITEM NO. 9031210	PIPE SIZE	POST NO.1	POST NO.2	LBS PER FT	TOTAL ITEM NO. 9031220	2" X 3/8" BARS @ 2.55 LBS PER FT NO. EACH	LGTH	TOTAL	TOTAL	ITEM NO. 9031250A	POST NO.1	POST NO.2	TOTAL ITEM NO. 9031270A	DRIVEN 12-GA. ITEM NO. 9031271A	DRIVEN 7-GA. ITEM NO. 9031273A	CONCRETE 7-GA. ITEM NO. 9031274	POST NO.1	POST NO.2	TOTAL ITEM NO. 9031280	2.25" INSERT (6 FT) ITEM NO. 9031272A	DRIVEN 7-GA. ITEM NO. 9031281A	CONCRETE 7-GA. ITEM NO. 9031285	ITEM NO. 9031241	
						CY		LF	LF	LF		LBS	IN.	LF	LF		LBS		IN.	LF	LBS	LF	LF	LF	LF	EA	EA	EA	LF	LF	LF	EA	EA	EA	EA	
1	60"x84"	34+78.19		LANE B		0.94	2	17.75	17.75		15.0	532.5																								'EXIT 2Q' GORE SIGN
2	30"X24"	8+25.00		HOLMES ST																			13.6		13.6	1									1	'BIKE ROUTE' SIGN
SUBTOTAL						0.94						532.5													13.6	1									1	
TOTAL						0.9						530									**				14	1									1	

* BREAKAWAY ASSEMBLY IS INCIDENTAL FOR STRUCTURAL STEEL AND PIPE POSTS.
** BACKING BARS ARE TOTALED WITH STRUCTURAL STEEL OR PIPE POSTS.

ROUND PIPE POST AND FOOTING DATA TABLE

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

STRUCTURAL STEEL POST AND FOOTING DATA TABLE

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

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED: 3/28/2025
ROUTE: HOLMES | STATE: MO
DISTRICT: KC | SHEET NO.: 52
COUNTY: JACKSON
JOB NO.: JKU0024
CONTRACT ID.
PROJECT NO.
BRIDGE NO.: A9599

DESCRIPTION | DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

052_SN_03_JKU0024_I1.dgn 10:26:22 AM 3/28/2025

EFFECTIVE: 10-01-2016

STANDARD SIGN ASSEMBLIES

SIGN NUMBER	STATION	LOCATION	TYPE: ST	TYPE: SHF	TYPE: SHF
			SIGN DESCRIPTION, SIZES & NUMBER OF EACH		
			EXIT 20 (SPECIAL)	54 rt 8 w (W12-2a)	54 rt 9 w (W12-2a)
1	34+78.19	LANE B	1		
3	44+27.04	LANE A		1	
4	34+90.00	LANE B			1

SIGN SUMMARY

STANDARD SIGN OR SPECIAL SIGN NUMBER	SIGN DETAIL SHEET NO.	NO. EACH	SIZE, TYPE & SQUARE FEET: SIZE	FLAT SHEET SH ITEM NO. 9035004A	FLAT SHEET FLUORESCENT SHF * ITEM NO. 9035069A	STRUCTURAL ST ITEM NO. 9035011A	STRUCTURAL FLUORESCENT STF * ITEM NO. 9035071A
E5-1a (EXIT GORE WITH NUMBER)		1	60"X84"			35	
W12-2a (LOW CLEARANCE [OVERHEAD])		2	84"X24"		28		
		TOTAL			28	35	

* ORANGE, YELLOW & YELLOW/GREEN

STATE OF MISSOURI
LEE HOLTMAN
NUMBER PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

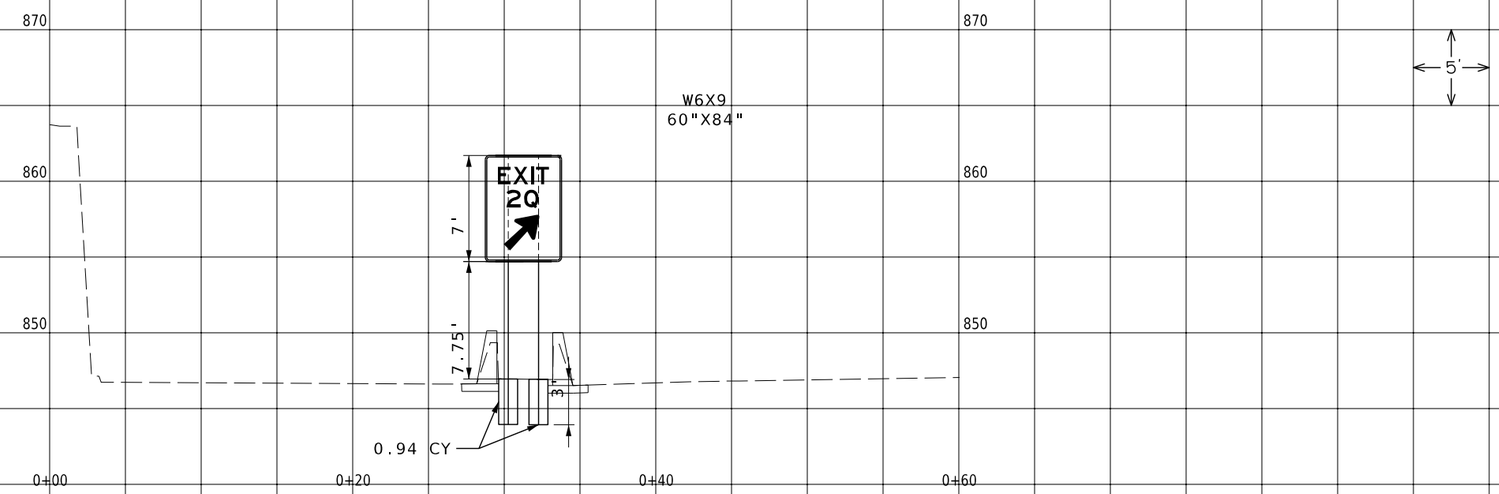
DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	53
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

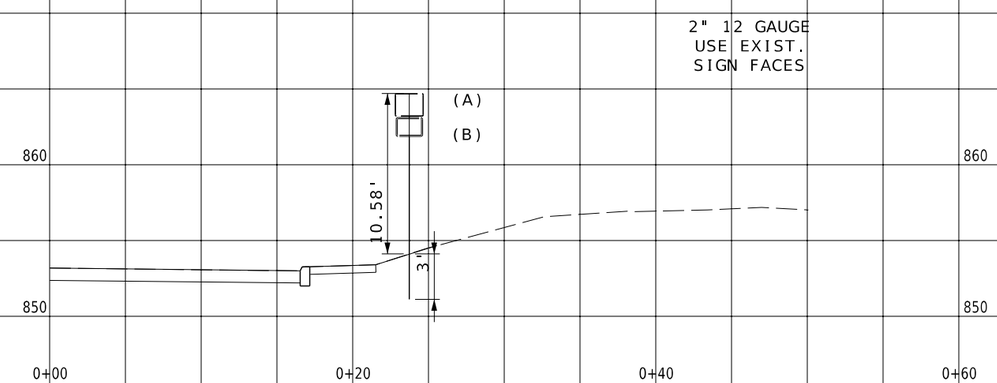
DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



SIGN 1
STA. 34+78.19
℄ LANE B
(LOOKING WEST)



SIGN 2
STA. 8+25.00
℄ HOLMES ST
(LOOKING NORTH)

SIGNING
CROSS SECTIONS
SHEET 5 OF 6

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

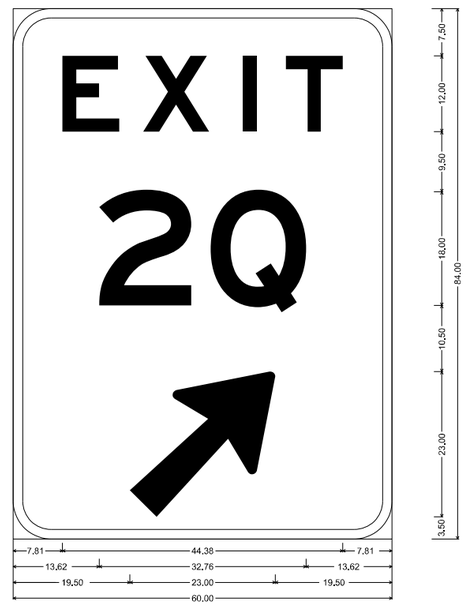
DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	54
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



6.00" Radius, 1.50" Border, White on Green;
"EXIT", E 2K 225% spacing; "2Q", E 2K; Arrow Custom - 29.25"45°;
Table of letter and object lefts

E 7.81	X 20.59	I 36.44	T 43.19
2 13.62	Q 31.26		
45° 18.50			

SIGNING
SPECIAL SIGNS
SHEET 6 OF 6

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
PROFESSIONAL ENGINEER
3/28/25

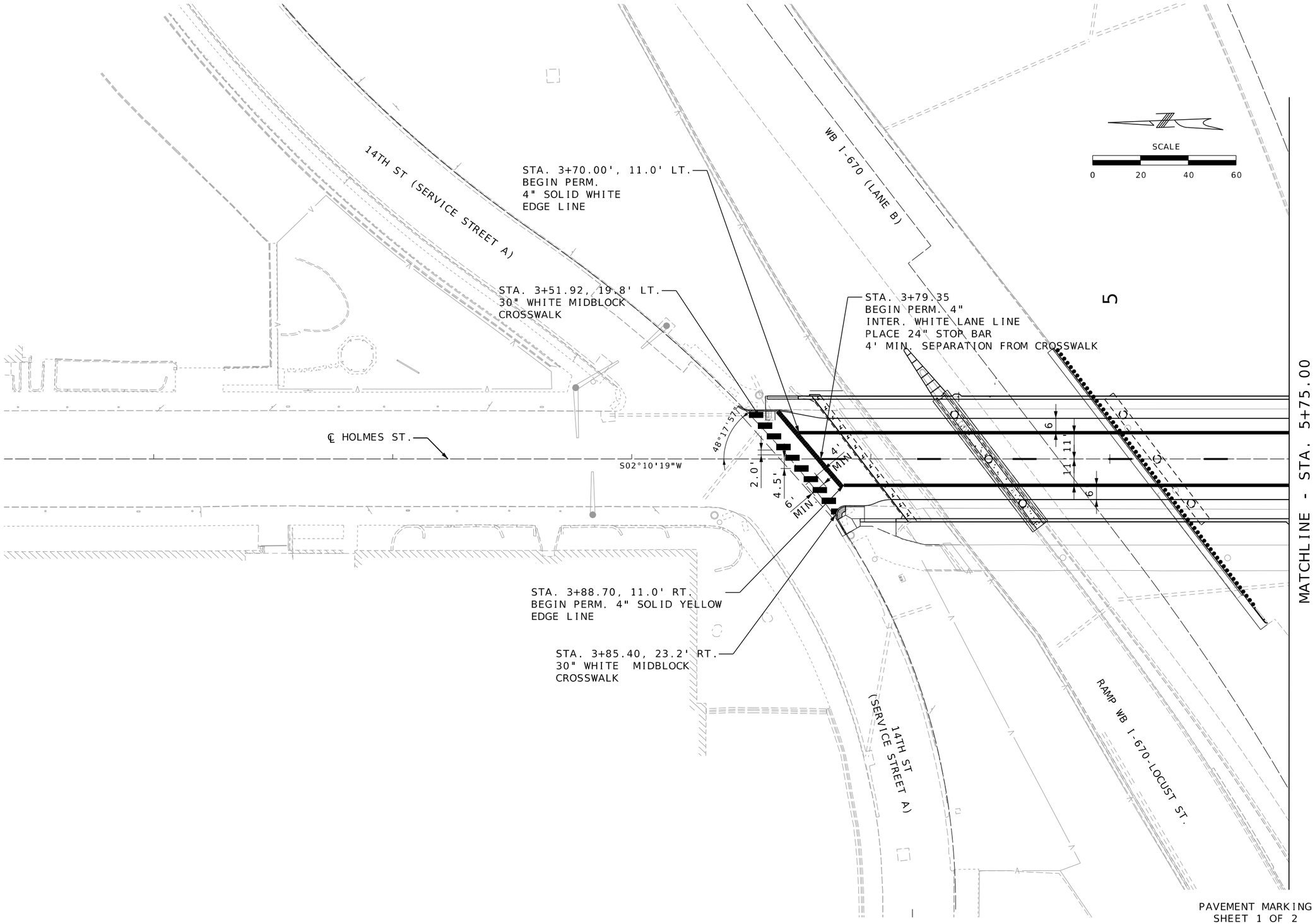
DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	55
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

055_SN_06_JKU0024_I1.dgn 10:26:34 AM 3/28/2025



PAVEMENT MARKING
SHEET 1 OF 2

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

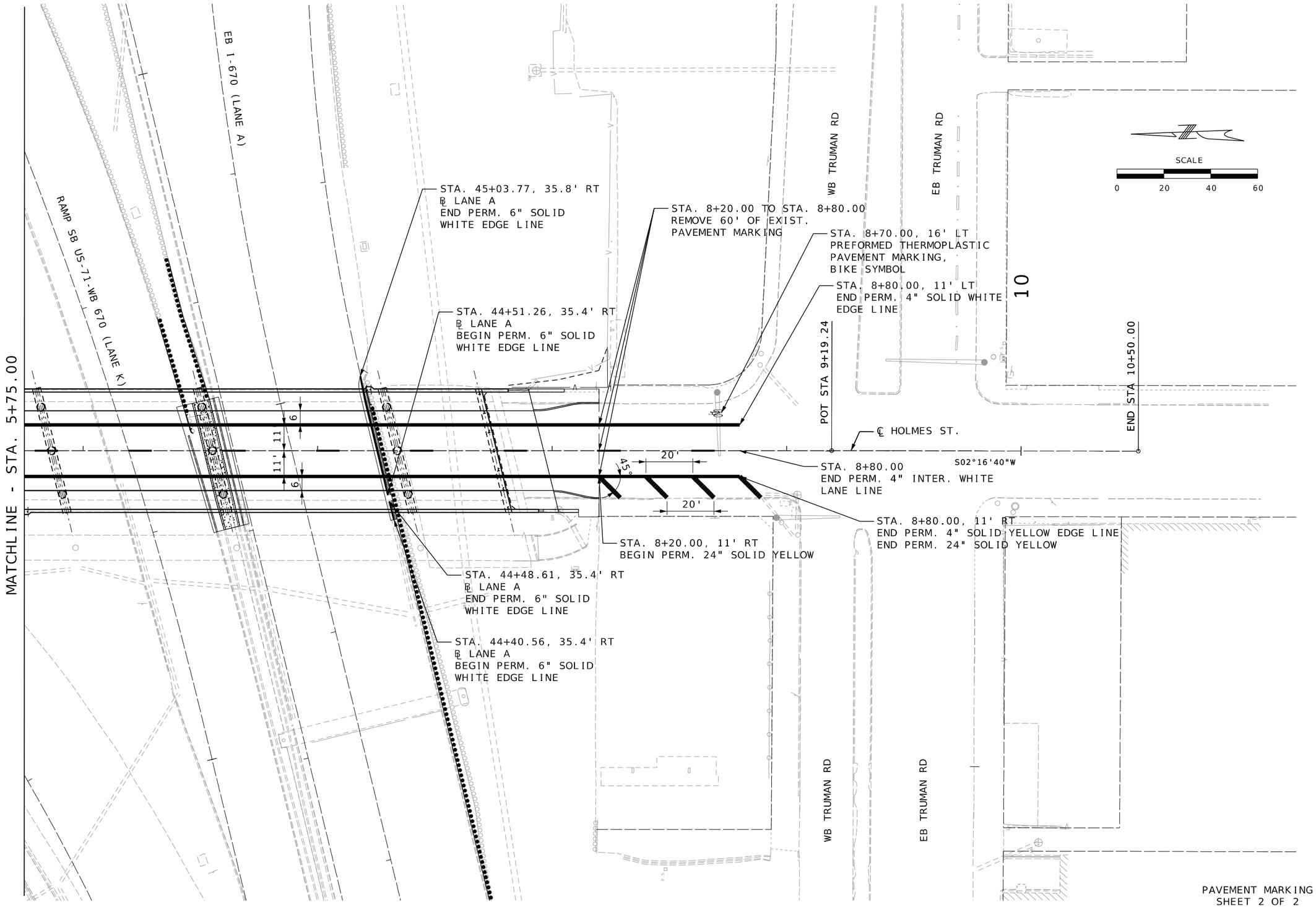
DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	56
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

056-057_PM_01-02_JKU0024_I20.dgn 11:00:23 AM 3/28/2025



PAVEMENT MARKING
SHEET 2 OF 2

STATE OF MISSOURI
LEE HOLTMAN
NUMBER
PE-2021006513
3/28/25
PROFESSIONAL ENGINEER

DATE PREPARED	3/28/2025
ROUTE	HOLMES
STATE	MO
DISTRICT	KC
SHEET NO.	57
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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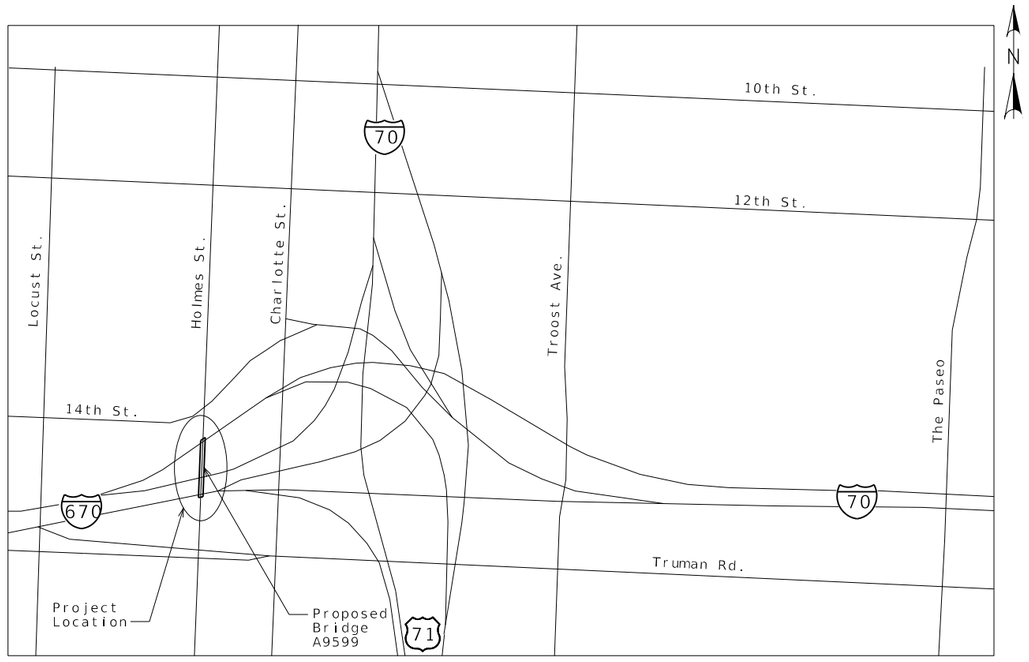
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

SEC/SUR 5 TWP 49N RGE 33W



LOCATION SKETCH

INDEX OF DRAWINGS

BRIDGE: HOLMES ST. OVER ROUTE I-670

ROUTE I-670 FROM ROUTE I-35 TO ROUTE 71
ABOUT 0.9 MILE EAST OF ROUTE I-35
TIE STATION 44+79.42 (℄ LANE A)

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
Van W. Robbins
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	1
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION | DATE

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

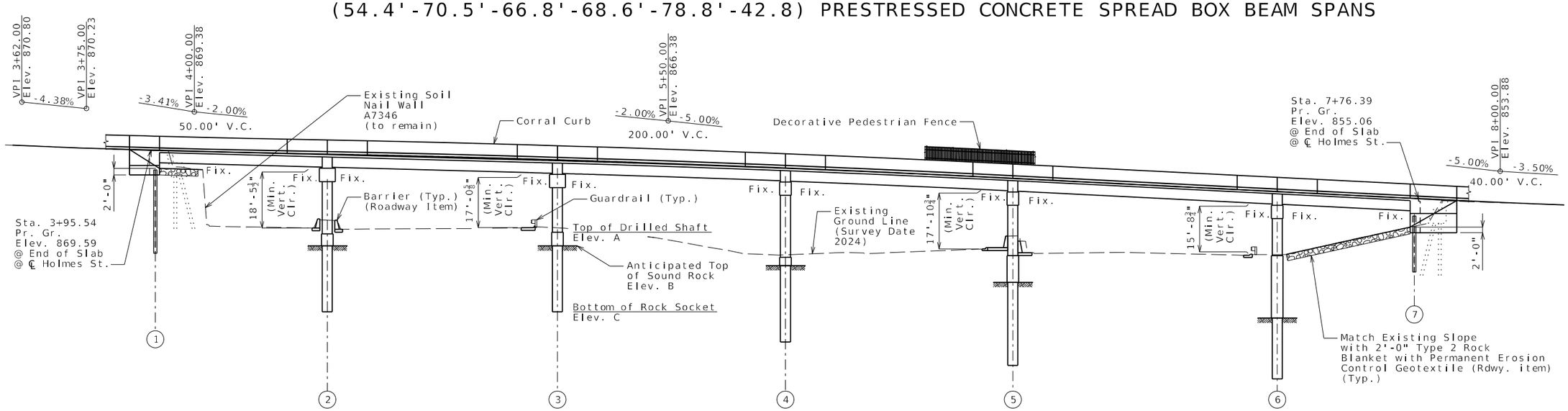
HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

Detailed DEC 2024
Checked JAN 2025

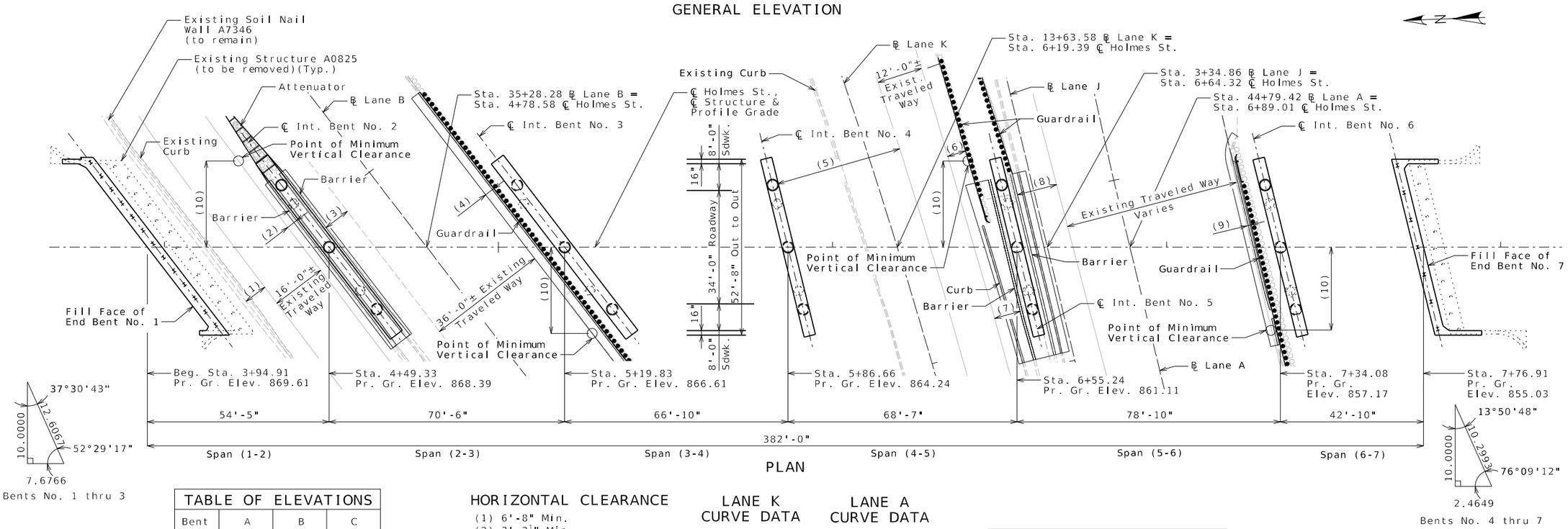
Note: This drawing is not to scale. Follow dimensions.

B_A9599_001_JKU0024.dgn 8:44:26 AM 4/2/2025

(54.4'-70.5'-66.8'-68.6'-78.8'-42.8) PRESTRESSED CONCRETE SPREAD BOX BEAM SPANS



GENERAL ELEVATION



PLAN

TABLE OF ELEVATIONS			
Bent	A	B	C
2	844.50	840.90	833.10
3	845.50	840.90	823.60
4	838.00	835.00	819.50
5	838.00	830.00	809.00
6	838.00	819.30	798.80

HORIZONTAL CLEARANCE

(1) 6'-8" Min.
(2) 3'-2¼" Min.
(3) 7'-3¼" Min.
(4) 3'-1⅞" Min.
(5) 38'-0⅜"
(6) 5'-6" Min.
(7) 7'-10" Min.
(8) 11'-11⅜" Min.
(9) 1'-4⅛" Min.
(10) 25'-10"

LANE K CURVE DATA

PI= 13+29.96
PC= 11+77.31
PT= 14+81.95
Δ = 9°8'21" Rt.
D = 3°0'0.0"
L = 304.64'
T = 152.64'
R = 1,909.86'

LANE A CURVE DATA

PI= 46+70.69
PC= 44+89.58
PT= 48+49.90
Δ = 14°24'47" Rt.
D = 4°0'0.0"
L = 360.32'
T = 181.12'
R = 1,432.39'

BENCH MARKS			
	STA.	OFFSET	ELEV.
BM #300	8+02.89	25.35' Rt.	853.99

Notes:
End Bent No. 1 thru Bent No. 3 are parallel.
Bent No. 4 thru End Bent No. 7 are parallel.
For substructure layout dimensions and boring locations, see Sheet No. 4.
All dimensions are horizontal.

Detailed DEC 2024
Checked JAN 2025

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

GENERAL PLAN AND ELEVATION

Sheet No. 2 of 51

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-08-25

DATE PREPARED	04/08/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	2
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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GENERAL NOTES:

Design Specifications:
- 2020 AASHTO LRFD Bridge Design Specifications (9th Ed.)
- 2023 AASHTO Guide Specifications for LRFD Seismic Bridge Design (3rd Ed.)
- Seismic Design Category = A (Nonseismic)
- Design earthquake response spectral acceleration coefficient at 1.0 second period, $S_{D1} \leq 0.15 = 0.09$
- Acceleration Coefficient (effective peak ground acceleration coefficient), $A_S = 0.05$

Design Loading:
- Vehicular = HL-93
- Future Wearing Surface = 35 lb/sf
- Earth = 120 lb/cf
- Equivalent Fluid Pressure = 45 lb/cf
- Superstructure: Simply-Supported, non-composite for dead load.
  Continuous composite for live load.

Design Unit Stresses:

Class B Concrete (Substructure)	f'c = 3,000 psi
Class B-2 Concrete (Drilled Shafts and Rock Sockets)	f'c = 4,000 psi
Class B-2 concrete (Superstructure, except Prestressed Beams and Corral Curb)	f'c = 4,000 psi
Class B-1 Concrete (Corral Curb)	f'c = 4,000 psi
Reinforcing Steel (ASTM A615 Grade 60)	fy = 60,000 psi
Structural Steel HP Pile (ASTM A709 Grade 50)	fy = 50,000 psi

For prestressed beam stresses, see Sheets No. 19 thru 25.

Neoprene Pads:
Neoprene Bearing Pads shall be 60 durometer and shall be in accordance with Sec 716.

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.

Traffic Handling:
Vertical clearance for I-670 traffic during construction shall be 14'-6" minimum over the horizontal openings of the existing roadway lane widths.
Structure to be closed during construction. See roadway plans for traffic control.

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

Miscellaneous:
- Outline of existing work is indicated by light dashed lines.
- Heavy lines indicate new work.
- Centerline of Holmes St is interchangeable with centerline of roadway in this plan set.

Abbreviations:
- E.F. denotes Each Face
- N.F. denotes Near Face
- F.F. denotes Far Face
- U.N.O. denotes Unless Noted Otherwise
- T.B.R. denotes To Be Removed
- T.R. denotes To Remain

Estimated Quantities

Item		Substr.	Superstr.	Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot	---	30	30
Removal of Bridges (A0825)	lump sum	---	---	1
Bridge Approach Slab (Minor)	sq. yard	---	183	183
(48 in.) Decorative Pedestrian Fence (Structures)	linear foot	---	796	796
Drilled Shafts (3 ft. 6 in. Dia.)	linear foot	113.7	---	113.7
Rock Sockets (3 ft. 0 in. Dia.)	linear foot	246.3	---	246.3
Video Camera Inspection	each	15	---	15
Foundation Inspection Holes	linear foot	396.3	---	396.3
Sonic Logging Testing	each	15	---	15
Galvanized Structural Steel Piles (12 in.)	linear foot	644	---	644
Dynamic Pile Testing	each	2	---	2
Pre-Bore For Piling	linear foot	348	---	348
Pile Point Reinforcement	each	7	---	7
Class B Concrete (Substructure)	cu. yard	317.0	---	317.0
Slab on Concrete Beam	sq. yard	---	2229	2229
* Sidewalk (Bridges)	sq. foot	---	7140	7140
Corral Curb	linear foot	---	796	796
Form Liners	sq. yard	---	169	169
27 in., Prestressed Concrete Spread Box Beam	linear foot	---	3377	3377
Reinforcing Steel (Bridges)	pound	35,620	---	35,620
Conduit System on Structure	lump sum	---	1	1
Reinforcing Steel (Epoxy Coated)	pound	52,850	---	52,850
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1	---	1
Concrete and Masonry Protection System	lump sum	---	---	1
Sacrificial Graffiti Protection System	lump sum	---	---	1
Vertical Drain at End Bents	each	2	---	2
Laminated Neoprene Bearing Pad	each	---	18	18
Laminated Neoprene Bearing Pad (Tapered)	each	---	90	90

Notes:
Cost of any required excavation for bridge will be considered completely covered by the contract unit price for other items.
All reinforcement in the end bents is included in the Estimated Quantities for Slab on Concrete Beam.
All concrete above the construction joint in the end bents is included in the Estimated Quantities for Slab on Concrete Beam.
All reinforcement in the intermediate bent concrete diaphragms except reinforcement embedded in the beam cap is included in the Estimated Quantities for Slab on Concrete Beam.
All concrete above the intermediate beam cap is included in the Estimated Quantities for Slab on Concrete Beam.
* All concrete and reinforcing steel in the sidewalk will be considered completely covered by the contract unit price for Sidewalk (Bridges). Measurement of Sidewalk (Bridges) is to the nearest square foot, measured from end of slab to end of slab. Pay limits beyond the end of slabs are Roadway Items.

Estimated Quantities for Slab on Concrete Beam

Item		Total
Class B-2 Concrete	cu. yard	703
Reinforcing Steel (Epoxy Coated)	pound	172,820

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

Method of forming the slab shall be 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.

Notes:
For Foundation Data Table and notes, see Sheet No. 4.

GENERAL NOTES AND ESTIMATED QUANTITIES

Detailed DEC 2024
Checked JAN 2025

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025

ROUTE	STATE
I-670	MO
DISTRICT BR	SHEET NO. 3

COUNTY JACKSON
JOB NO. JKU0024
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9599

DESCRIPTION
DATE

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

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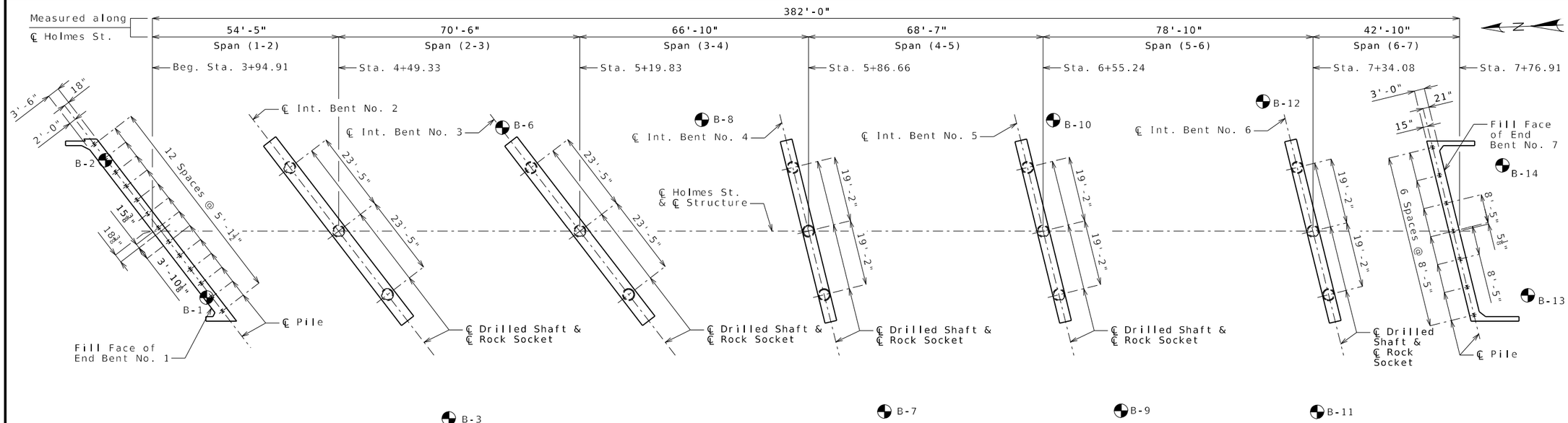
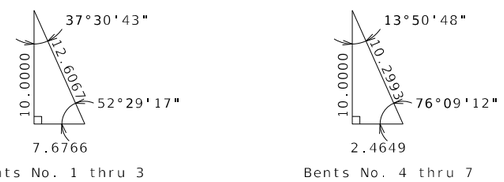
CERTIFICATE OF AUTHORITY
NO. 001270



SUBSTRUCTURE LAYOUT



Indicates location of borings.

Notice and Disclaimer Regarding Boring Log Data

The locations of all subsurface borings for this structure are shown on the plan sheets for this structure. The boring data for all locations indicated, as well as any other boring logs or other factual records of subsurface data and investigations performed by the department for the design of the project, are shown on Sheets No. 46 thru 51 and may be included in the Electronic Bridge Deliverables. They will also be available from the Project Contact upon written request. No greater significance or weight should be given to the boring data depicted on the plan sheets than is given to the subsurface data available from the district or elsewhere.

The Commission does not represent or warrant that any such boring data accurately depicts the conditions to be encountered in constructing this project. A contractor assumes all risks it may encounter in basing its bid prices, time or schedule of performance on the boring data depicted here or those available from the district, or on any other documentation not expressly warranted, which the contractor may obtain from the Commission.

Foundation Data

Type	Design Data		Bent Number 1	2	3	4	5	6	7
Load Bearing Pile	HP Pile Type and Size		HP12x53	---	---	---	---	---	HP12x53
	Number	ea	13	---	---	---	---	---	7
	Approximate Length per Each	ft	28	---	---	---	---	---	40
	Pile Point Reinforcement	ea	---	---	---	---	---	---	All
	Minimum Galvanized Penetration (Elev.)	ft	Full Length	---	---	---	---	---	Full Length
	Minimum Tip Penetration (Elev.)	ft	836.1	---	---	---	---	---	---
	Criteria for Min. Tip Penetration		Min. Embed	---	---	---	---	---	---
	Pile Driving Verification Method		---	---	---	---	---	---	DT
	Resistance Factor		0.5	---	---	---	---	---	0.65
	Minimum Nominal Axial Compressive Resistance	kip	206	---	---	---	---	---	249
Rock Socket	Number	ea	---	3	3	3	3	3	---
	Layer 1 Foundation Material		---	Limestone	Limestone	Limestone	Limestone	Shale	---
	Layer 1 Elevation Range	ft	---	839.1-833.1	838.6-834.3	834.5-832.8	829.5-828.6	816.3-810.3	---
	Layer 1 Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf	---	24.9	24.9	24.9	24.9	10.8	---
	Layer 2 Foundation Material		---	---	Shale	Shale	Shale	Limestone	---
	Layer 2 Elevation Range	ft	---	---	834.3-830.0	832.8-830.0	828.6-816.1	810.3-810.1	---
	Layer 2 Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf	---	---	3.03	3.03	0.90	30.27	---
	Layer 3 Foundation Material		---	---	Shale	Shale	Shale	Shale	---
	Layer 3 Elevation Range	ft	---	---	830.0-824.9	830.0-824.4	816.1-809.0	810.1-798.8	---
	Layer 3 Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf	---	---	0.9	0.9	10.8	9.8	---
	Layer 4 Foundation Material		---	---	Shale	Shale	---	---	---
	Layer 4 Elevation Range	ft	---	---	824.9-823.6	824.4-819.5	---	---	---
	Layer 4 Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf	---	---	10.8	10.81	---	---	---
	Minimum Nominal Axial Compressive Resistance (Tip Resistance)	ksf	---	53.3	78.5	136.5	146.0	62.5	---

Load Bearing Piles:
Minimum Nominal Axial Compressive Resistance = Maximum Factored Loads/Resistance Factor

Prebore for piles at End Bent No. 1 to elevation 836.1 or to top of rock (whichever is deeper). All piles shall bear on rock. If sound rock is encountered, piles shall be inserted into the prebored holes that have been cleaned and contain no loose rubble. The piles shall be seated with the pile hammer or other method of firm seating and verification of pile driving is not required. Bottom of prebored hole shall be filled with Class B concrete to top of rock elevation or bottom of wall elevation (whichever is lower). The remaining annular space of the prebored hole shall be backfilled with clean loose dry sand. If sound rock is not encountered, fill the prebored hole with loose sand prior to pile driving in compliance with hard rock driving criteria in accordance with Sec 702.

HP piles at End Bent No. 7 are anticipated to be driven to refusal on rock. Review all borings for depth of rock and restrict driving as appropriate to comply with hard rock driving criteria in accordance with Sec 702. When pile refusal on rock occurs, as approved by the engineer, the minimum nominal axial compressive resistance is verified and no additional pile driving verification method is required.

All piles shall be galvanized down to the minimum galvanized penetration (elevation).

Pile point reinforcement need not be galvanized. Shop drawings will not be required for pile point reinforcement.

DT = Dynamic Testing (Two required at End Bent No. 7)

Rock Socket (Drilled Shafts):
Minimum Nominal Axial Compressive Resistance (Side Resistance + Tip Resistance) = Maximum Factored Loads/Resistance Factors

The cost of any required excavation to the top of the drilled shafts will be considered completely covered by the contract unit price for other items.

SUBSTRUCTURE LAYOUT AND FOUNDATION DATA

Detailed DEC 2024
Checked JAN 2025

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

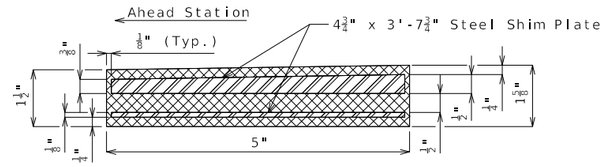
STATE OF MISSOURI — VAN WILLIAM ROBBINS — PE-2017015106 — PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025
ROUTE I-670 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY JACKSON
JOB NO. JKU0024
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9599

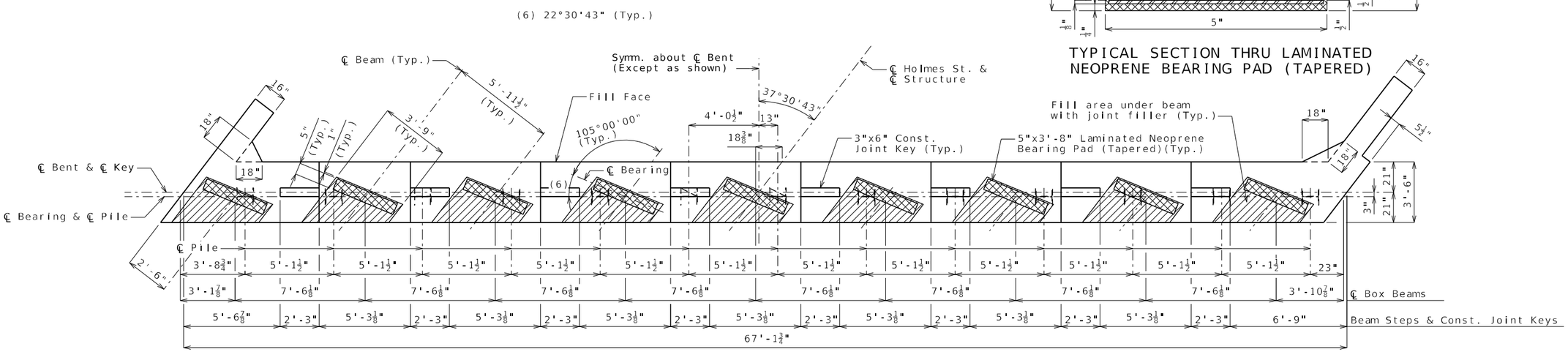
DESCRIPTION | DATE

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

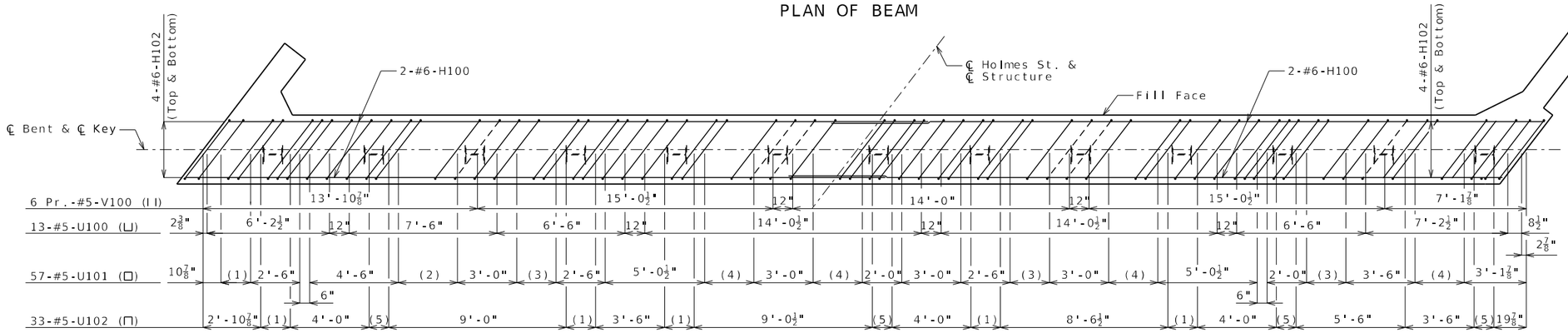
HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



TYPICAL SECTION THRU LAMINATED NEOPRENE BEARING PAD (TAPERED)

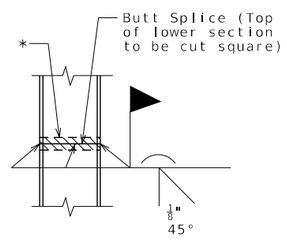


PLAN OF BEAM



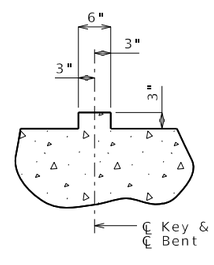
(1) 3 Spa. @ 6"
(2) 6 Spa. @ 6"
(3) 4 Spa. @ 6"
(4) 5 Spa. @ 6"
(5) 2 Spa. @ 6"

PLAN OF BEAM SHOWING REINFORCEMENT
Keys not shown for clarity.



STEEL PILE SPLICE
(If required)

* Galvanizing material shall be omitted or removed one inch clear of weld locations in accordance with Sec 702.



SECTION THRU KEY

Notes:
Work this sheet with Sheets No. 6 & 7.
All U bars and pairs of V bars shall be placed parallel to centerline of roadway.
Reinforcing steel shall be shifted to clear piles. U bars shall clear piles by at least 1 1/2 inches.
Pile may be adjusted two feet max. to avoid soil nails encountered in field.
Contractor is required to excavate the first row of soil nails behind Wall No. A7346 to verify location and determine alignment of soil nails. Cost of this excavation will be considered completely covered by the unit price other items.

Substructure Quantity Table for End Bent No. 1		
Item		Quantity
Galvanized Structural Steel Piles (12 in.)	linear foot	368
Pre-Bore for Piling	linear foot	348
Class B Concrete (Substructure)	cu. yard	29.5

These quantities are included in the Estimated Quantities table on Sheet No. 3.

DETAILS OF END BENT NO. 1

Detailed DEC 2024
Checked JAN 2025

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STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025
ROUTE I-670 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY JACKSON
JOB NO. JKU0024
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9599

DESCRIPTION | DATE

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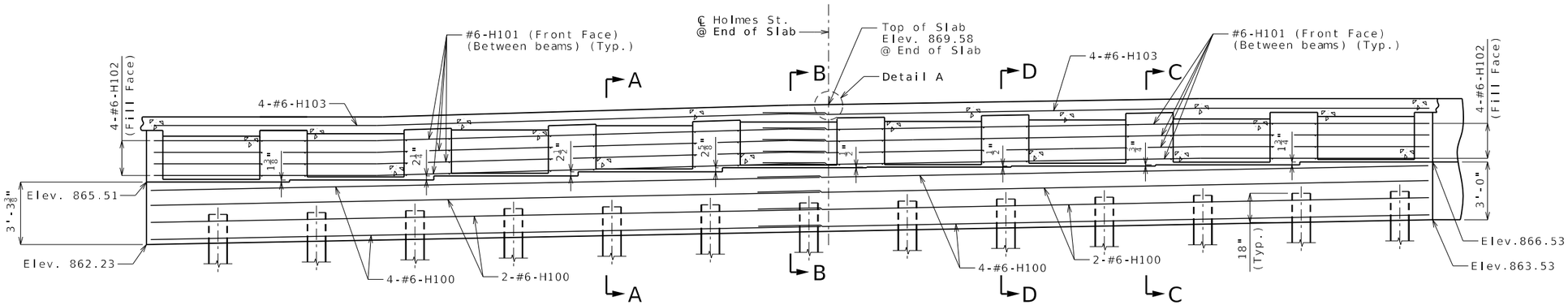
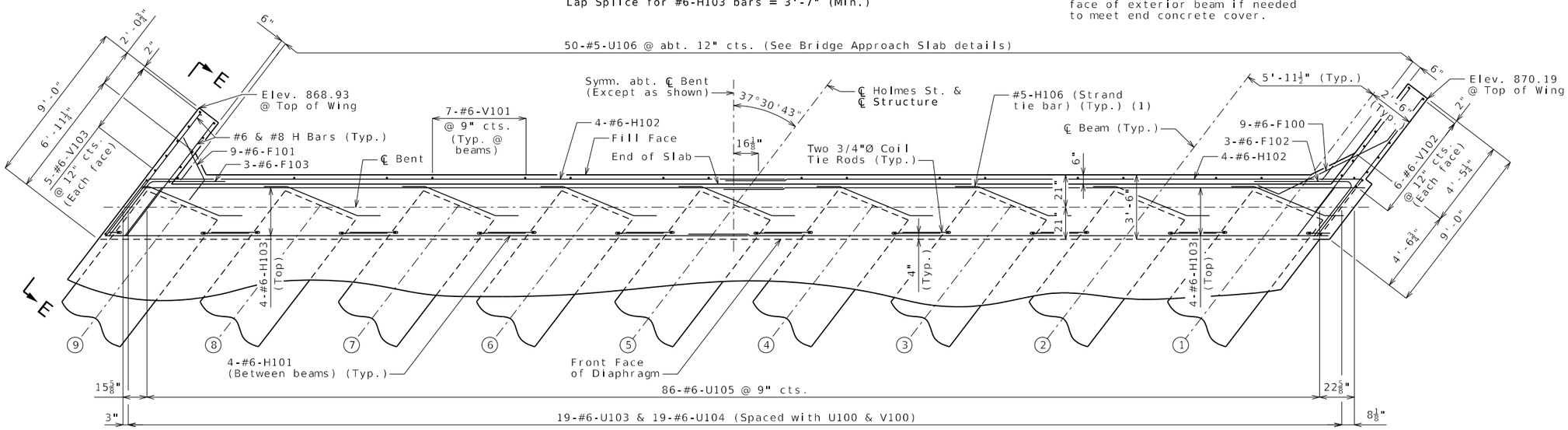


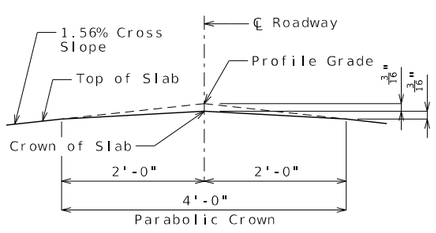
SECTION NEAR END BENT
(Looking Back Station)

Notes:
Lap Splice for #6-H100 bars = 3'-7" (Min.)
Lap Splice for #6-H102 bars = 3'-7" (Min.)
Lap Splice for #6-H103 bars = 3'-7" (Min.)

(1) Field trim bar at exterior face of exterior beam if needed to meet end concrete cover.



PART PLAN



DETAIL A

Notes:
Work this sheet with Sheets No. 5 & 7.
For Sections A-A, B-B, C-C and D-D and Elevation E-E, see Sheet No. 7.
The #6-F101 & #6-F100 bars shall be bent in the field to clear beams.
The U bars shall be placed parallel to centerline of roadway.
All concrete in the end bent above top of beam and below top of slab shall be Class B-2.
Strands at end of beams shall be field bent or, if necessary, cut in field to maintain 1 1/2-inch minimum clearance to fill face of end bent.
For location of coil tie rods and #5-H106 (strand tie bar), see Sheet No. 19.
For details of vertical drain at end bents, see Sheet No. 8.
For details of bridge approach slab, see Sheet No. 41.

DETAILS OF END BENT NO. 1

Detailed DEC 2024
Checked JAN 2025

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	
04/03/2025	
ROUTE	STATE
I-670	MO
DISTRICT	SHEET NO.
BR	6
COUNTY	
JACKSON	
JOB NO.	
JKU0024	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
A9599	

DESCRIPTION	DATE

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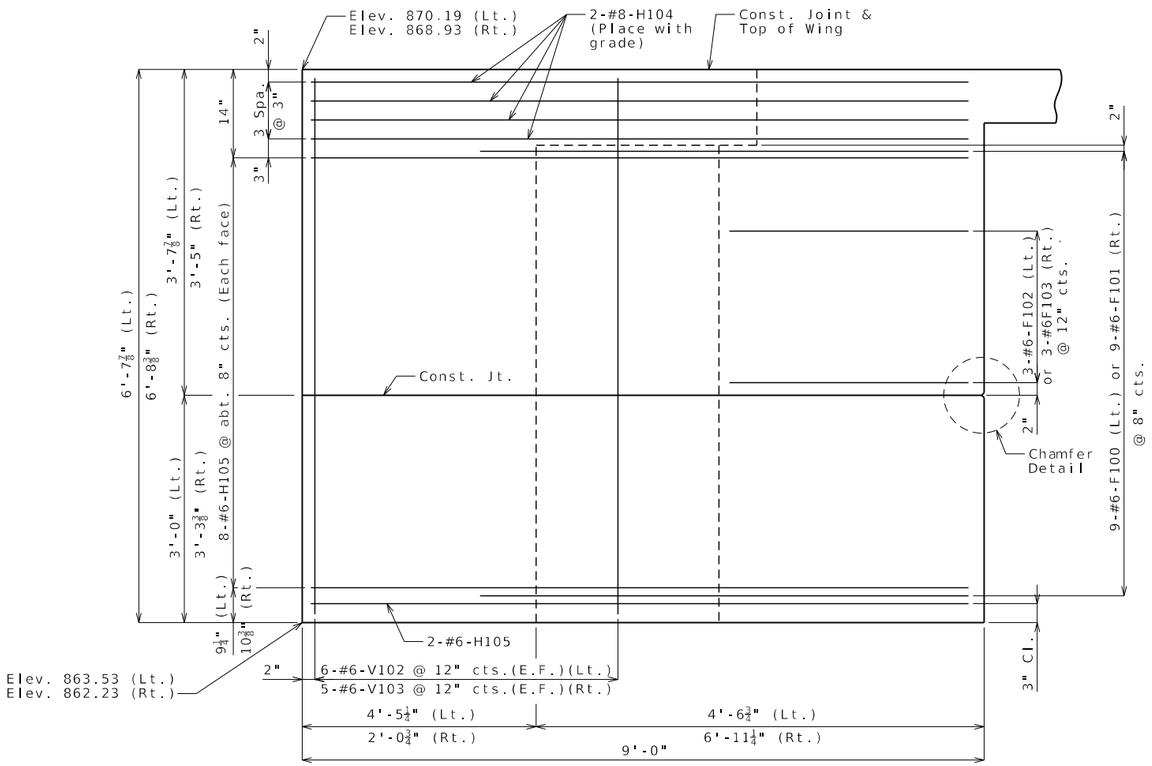
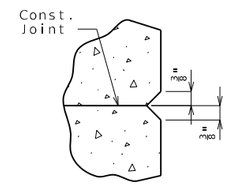
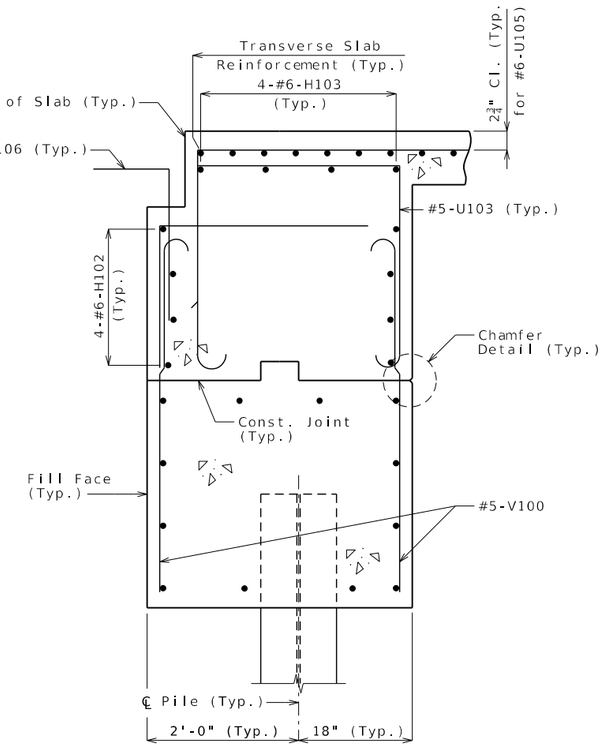
CERTIFICATE OF AUTHORITY
NO. 001270



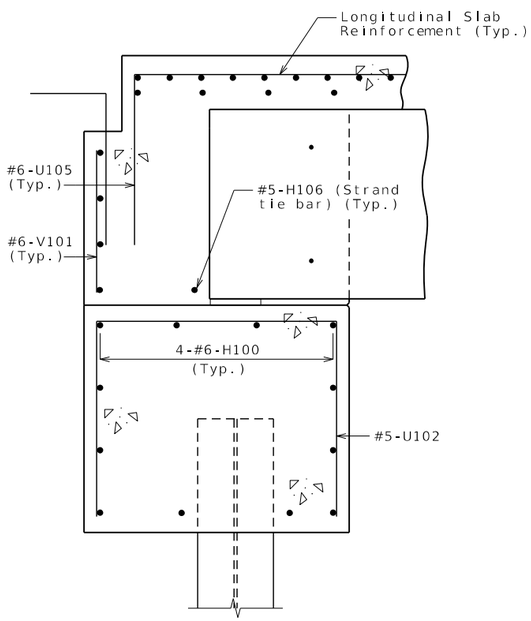
ELEVATION E-E



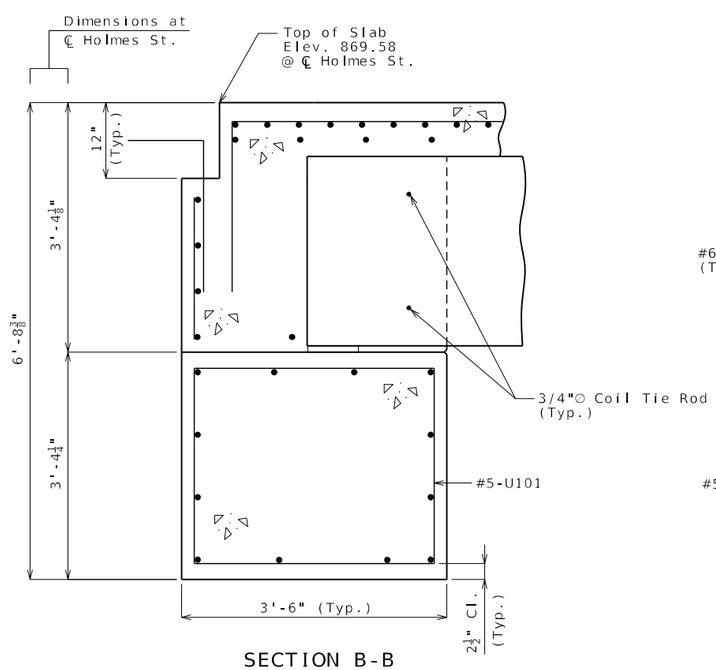
CHAMFER DETAIL



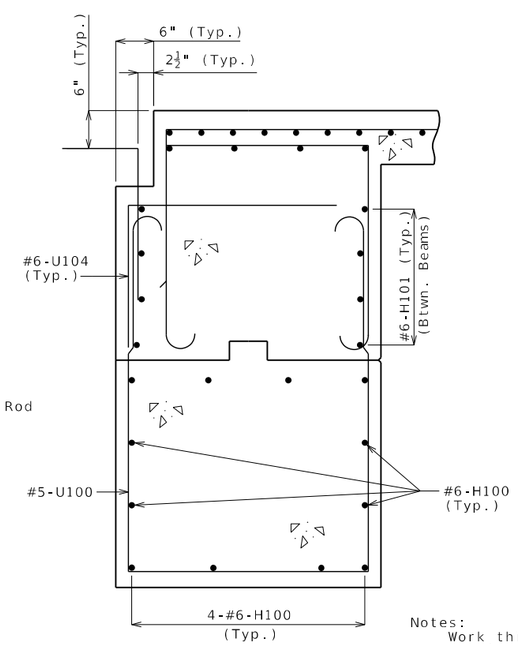
SECTION D-D



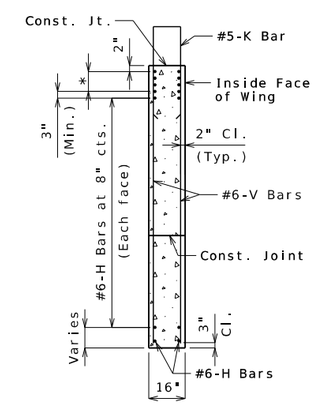
SECTION A-A



SECTION B-B



SECTION C-C



TYPICAL SECTION THRU WING

* #8-H Bars at 3" cts. (Each face)(Place with grade)

Notes:
Work this sheet with Sheets No. 5 & 6.
For location of Sections A-A, B-B, C-C and D-D and Elevation E-E, see Sheet No. 6.
For reinforcement of the Corral Curb, see Sheet No. 36.
For Form Liner Details not shown, see Sheet No. 38.

DETAILS OF END BENT NO. 1

Detailed DEC 2024
Checked JAN 2025

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

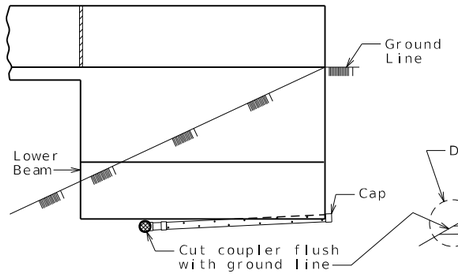
STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	7
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

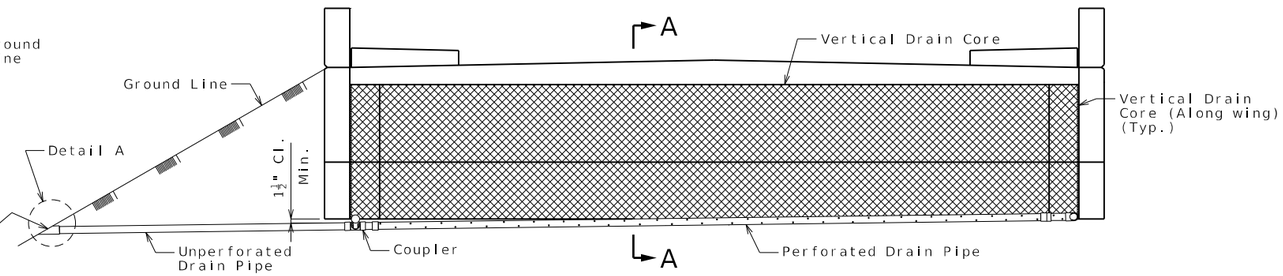
DATE	DESCRIPTION

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

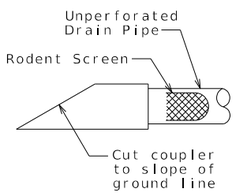
HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



ELEVATION OF WING

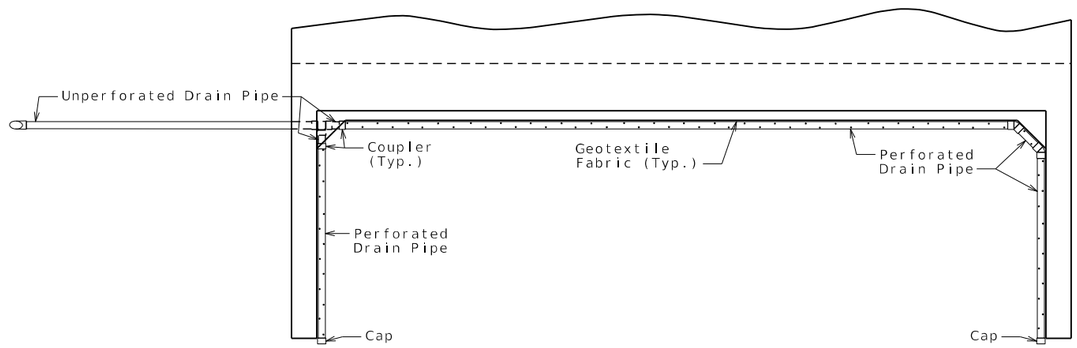


ELEVATION OF END BENT

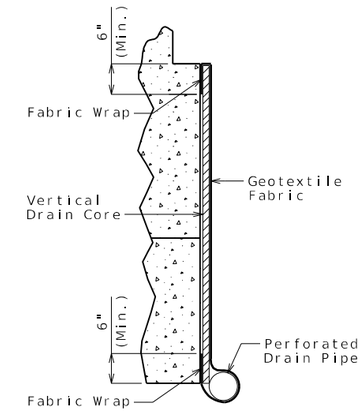


DETAIL A

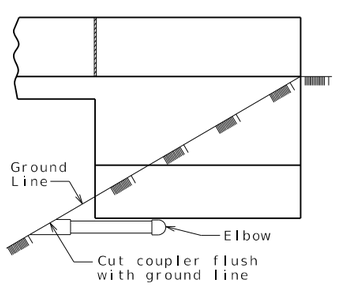
Note: At End Bent No. 1, unperforated drain pipe shall outlet directly into gutter behind existing retaining wall A7346 (to remain).



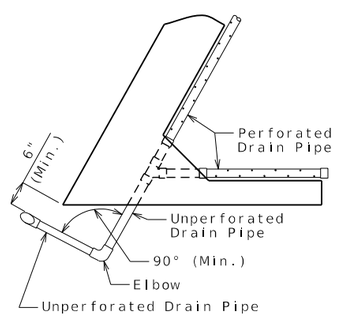
PLAN OF END BENT



PART SECTION A-A
(Section thru wing similar)



ELEVATION OF WING



PART PLAN

OPTIONAL TURNED DRAIN
(Use only when straight drain is not practical.)

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.

VERTICAL DRAIN AT END BENTS

(Squared end bent shown, skewed end bent similar)

Detailed DEC 2024
Checked JAN 2025

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

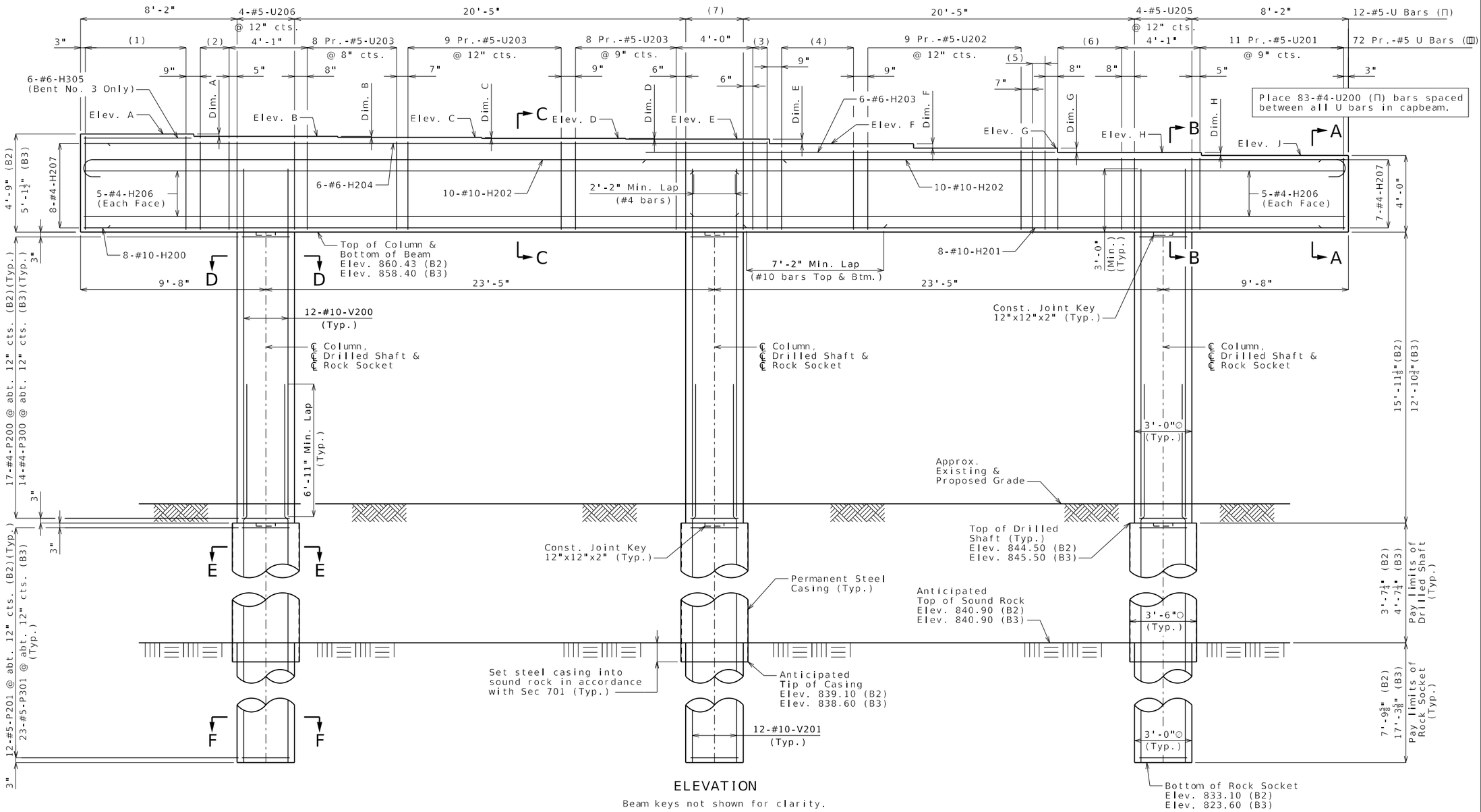
DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	8
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



ELEVATION

Beam keys not shown for clarity.

(1) 8 Pr.-#5-U203 (B2) or U304 (B3) at 9" cts.

(2) 3 Pr.-#5-U203 at 9" cts.

(3) 2 Pr.-#5-U203 at 9" cts.

(4) 6 Pr.-#5-U202 at 9" cts.

(5) 2 Pr.-#5-U202 at 8" cts.

(6) 6 Pr.-#5-U201 at 8" cts.

(7) 4-#5-U206 @ 12" cts.

Table of Variables

BENT NO.	Elev. A	Elev. B	Elev. C	Elev. D	Elev. E	Elev. F	Elev. G	Elev. H	Elev. J
2	865.18	865.09	865.08	865.08	865.08	864.90	864.71	864.53	864.43
3	863.52	863.39	863.34	863.30	863.25	863.02	862.78	862.55	862.40
	Dim. A	Dim. B	Dim. C	Dim. D	Dim. E	Dim. F	Dim. G	Dim. H	
2	1⅛"	⅛"	0"	0"	2⅛"	2¼"	2⅛"	1¼"	
3	1½"	⅝"	½"	⅝"	2¾"	2⅞"	2¾"	1¾"	

Notes:

Work this sheet with Sheets No. 10 and 11.

Alternate splice location of H200 and H201 bars each side of ℄ column.

Thickness of permanent steel casing shall be in accordance with Sec 701.

Sonic logging testing shall be performed on all drilled shafts and rock sockets.

Bar marks are shown for Intermediate Bent No. 2 using "200" series for barmarks. Intermediate Bent No. 3 is similar, except use "300" series bar marks.

B2 denotes Intermediate Bent No. 2.

B3 denotes Intermediate Bent No. 3.

DETAILS OF INTERMEDIATE BENTS NO. 2 AND 3

Detailed DEC 2024
Checked JAN 2025

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

STATE OF MISSOURI — VAN WILLIAM ROBBINS — PE-2017015106 — PROFESSIONAL ENGINEER

04-03-25

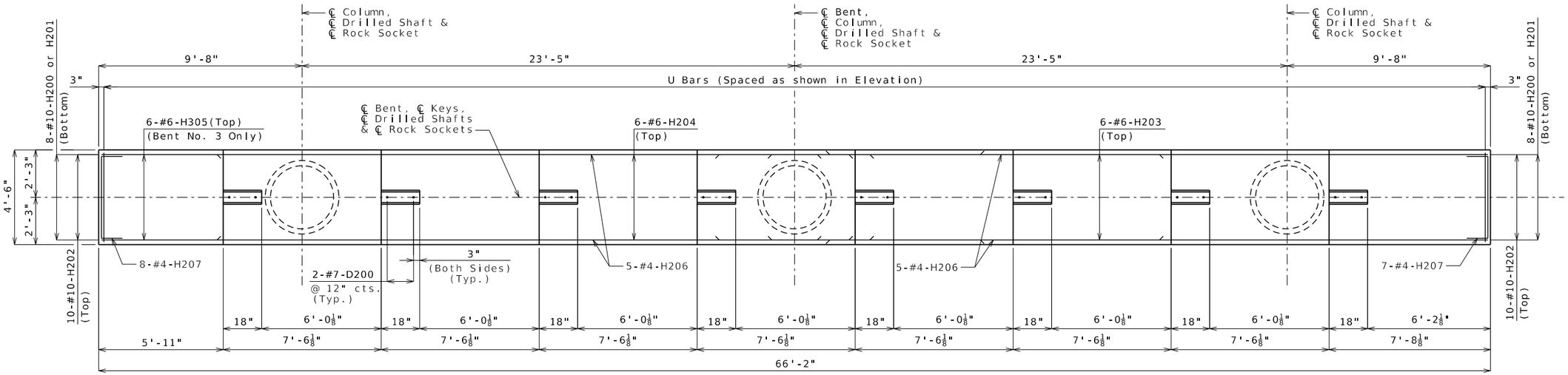
DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	9
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

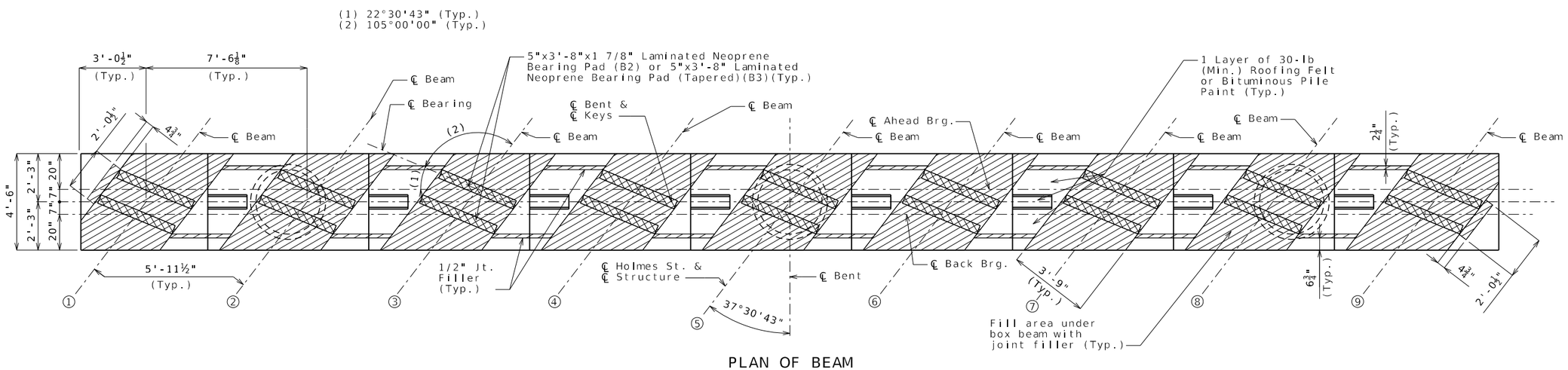
DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY NO. 001270



PLAN SHOWING REINFORCEMENT



PLAN OF BEAM

Notes:
Work this sheet with Sheets No. 9 and 11.
For steps 2 inches or more, use 2 1/4x1/2 inch joint filler up vertical face.
Bar marks are shown for Intermediate Bent No. 2 using "200" series for barmarks. Intermediate Bent No. 3 is similar, except use "300" series bar marks.

DETAILS OF INTERMEDIATE BENTS NO. 2 AND 3

Detailed DEC 2024
Checked JAN 2025

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

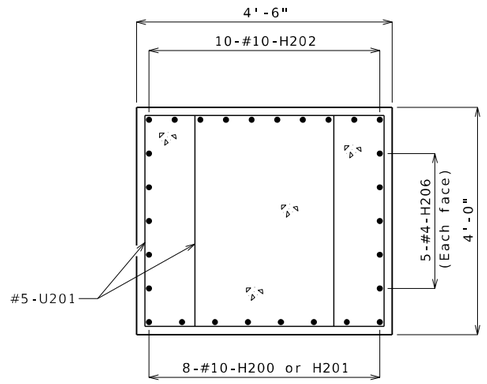
STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	10
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

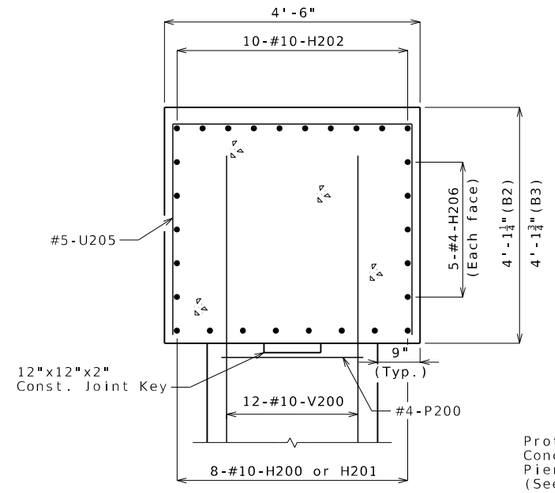
DATE	DESCRIPTION

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

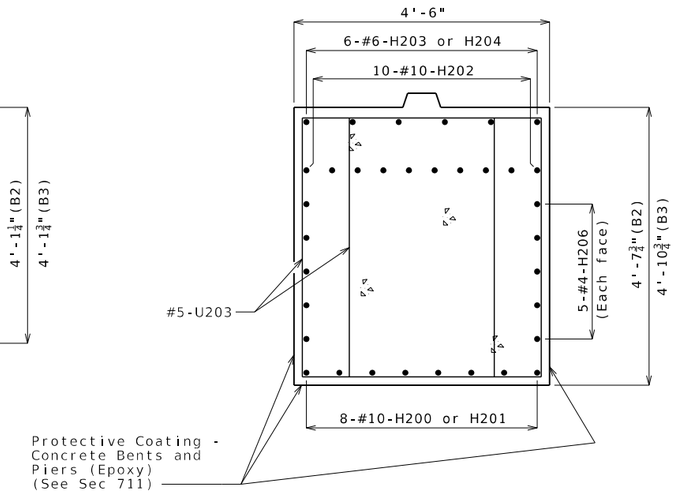
HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



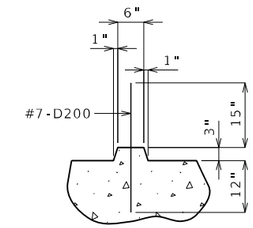
SECTION A-A



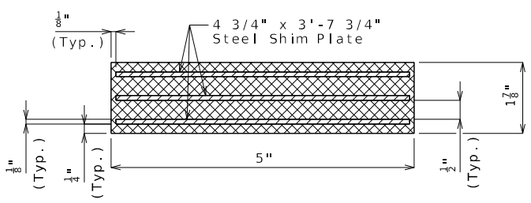
SECTION B-B



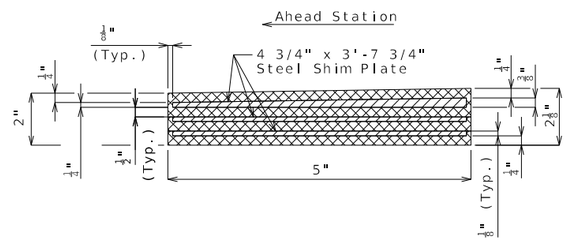
SECTION C-C



SECTION THRU KEY



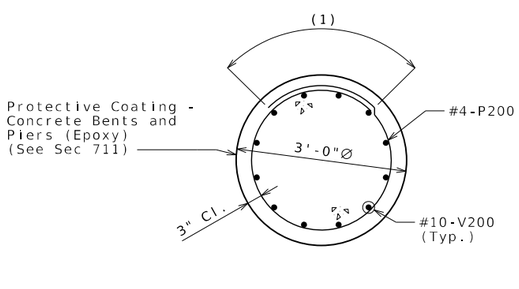
SECTION THRU LAMINATED NEOPRENE
BENT NO.2 BEARING PAD
(18 Required)



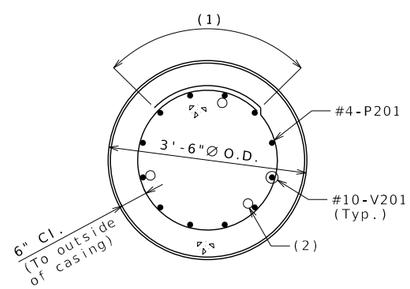
SECTION THRU LAMINATED NEOPRENE
BENT NO. 3 BEARING PAD (TAPERED)
(18 Required)

Substructure Quantity Table for Int. Bent No. 2		
Item		Quantity
Drilled Shafts (3 ft. 6 in. Dia.)	linear foot	10.8
Rock Sockets (3 ft. 0 in. Dia.)	linear foot	23.4
Video Camera Inspection	each	3
Foundation Inspection Holes	linear foot	53.4
Sonic Logging Testing	each	3
Class B Concrete (Substructure)	cu. yard	61.1
Reinforcing Steel (Bridges)	pound	4,108
Reinforcing Steel (Epoxy Coated)	pound	12,682
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1

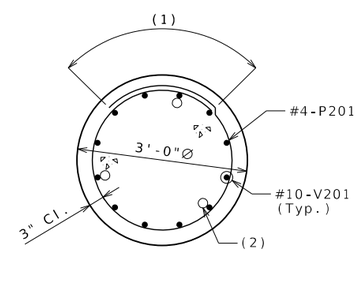
Substructure Quantity Table for Int. Bent No. 3		
Item		Quantity
Drilled Shafts (3 ft. 6 in. Dia.)	linear foot	13.8
Rock Sockets (3 ft. 0 in. Dia.)	linear foot	51.9
Video Camera Inspection	each	3
Foundation Inspection Holes	linear foot	81.9
Sonic Logging Testing	each	3
Class B Concrete (Substructure)	cu. yard	61.6
Reinforcing Steel (Bridges)	pound	6,001
Reinforcing Steel (Epoxy Coated)	pound	12,251
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1



SECTION D-D



SECTION E-E



SECTION F-F

These quantities are included in the Estimated Quantities table on Sheet No. 3.

All reinforcement in drilled shafts and rock sockets is included in the substructure quantities.

An additional 4 feet has been added to V-bar lengths and additional 5-#4-P201 and 5-#4-P301 bars have been added for possible change in drilled shaft or rock socket length. The additional V-bar length shall be cut off or included in the reinforcement lap if not required. The P bars shall be spaced similarly to that shown in Elevation, if required, or a lesser spacing if not required but not less than 6-inch centers.

(1) 2'-1" Min. Lap (#4-P200 & #4-P201)
(Stagger adjacent bar splices)

(2) 2"∅ Steel Pipe for sonic logging testing (3 each shaft)

Notes:
Work this sheet with Sheets No. 9 and 10.
Bar marks are shown for Intermediate Bent No. 2 using "200" series for barmarks. Intermediate Bent No. 3 is similar, except use "300" series bar marks.

DETAILS OF INTERMEDIATE BENTS NO. 2 AND 3

Detailed DEC 2024
Checked JAN 2025

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

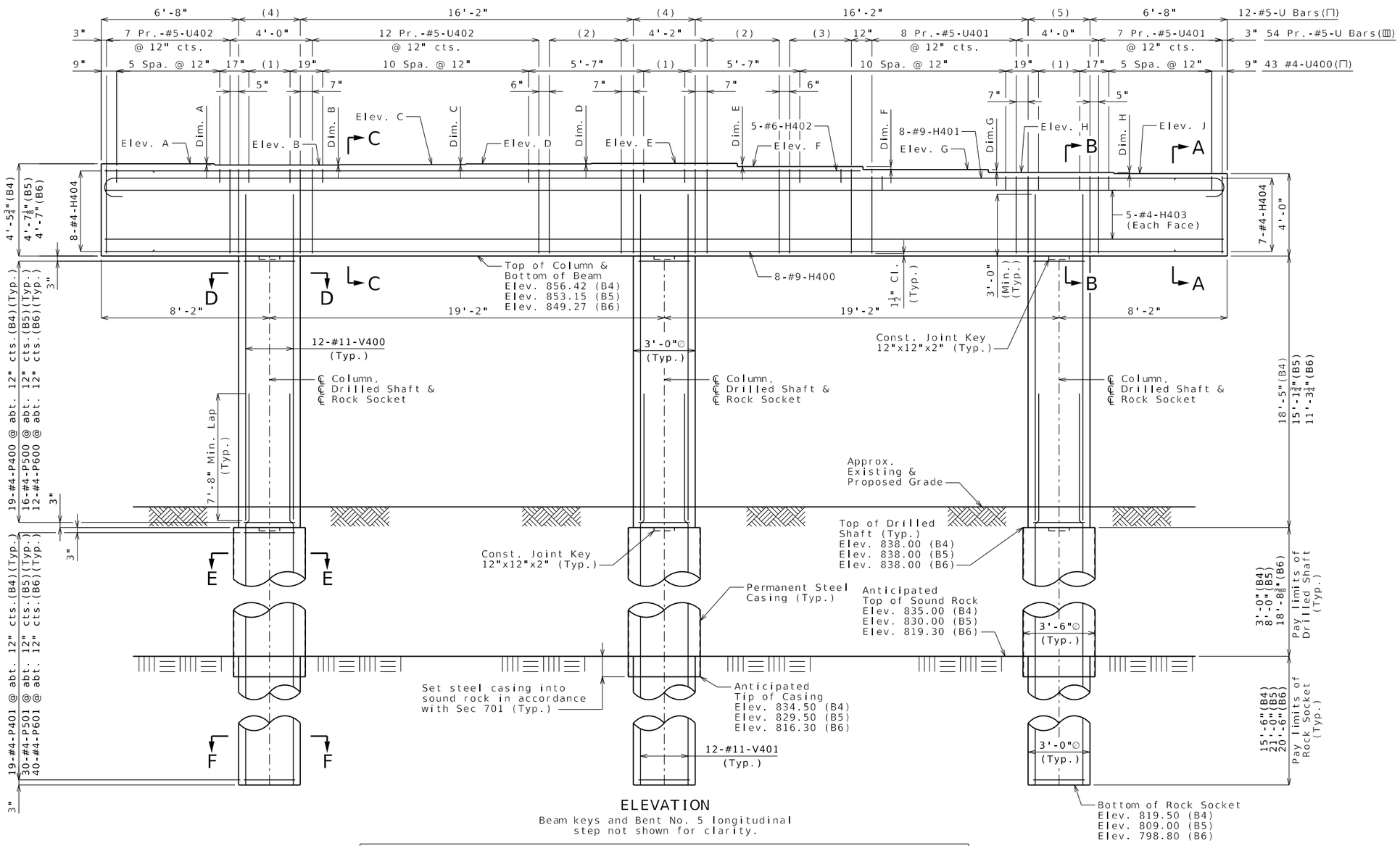
STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025
ROUTE I-670 | STATE MO
DISTRICT BR | SHEET NO. 11
COUNTY JACKSON
JOB NO. JKU0024
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9599

DESCRIPTION
DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



ELEVATION

Beam keys and Bent No. 5 longitudinal step not shown for clarity.

(1) 2 Spa. @ 12"

(2) 8 Pr.-#5-U402 @ 6" cts.

(3) 4 Pr.-#5-U402 @ 12" cts.

(4) 4-#5-U403 @ 12" cts.

(5) 4-#5-U404 @ 12" cts.

Table of Variables

BENT NO.	Elev. A	Elev. B	Elev. C	Elev. D	Elev. E	Elev. F	Elev. G	Elev. H	Elev. J
4	860.90	860.84	860.86	860.90	860.93	860.78	860.62	860.48	860.42
5 Back	857.86	857.79	857.79	857.81	857.83	857.66	857.50	857.34	857.27
5 Ahead	857.74	857.67	857.67	857.69	857.71	857.54	857.38	857.23	857.15
6	853.85	853.78	853.79	853.81	853.83	853.66	853.49	853.34	853.27
	Dim. A	Dim. B	Dim. C	Dim. D	Dim. E	Dim. F	Dim. G	Dim. H	
4	¾"	¼"	½"	⅜"	1¾"	1⅞"	1⅝"	¾"	
5 Back & Ahead	⅞"	0"	¼"	¼"	2"	1⅞"	1⅞"	1"	
6	⅞"	⅛"	¼"	¼"	2"	2"	1¾"	⅞"	

Notes:

Work this sheet with Sheets No. 13 and 14.

Thickness of permanent steel casing shall be in accordance with Sec 701.

Sonic logging testing shall be performed on all drilled shafts and rock sockets.

Bar marks are shown for Intermediate Bent No. 4 using "400" series for barmarks. Intermediate Bents No. 5 and 6 are similar, except use "500" and "600" series bar marks.

B4 denotes Intermediate Bent No. 4.

B5 denotes Intermediate Bent No. 5.

B6 denotes Intermediate Bent No. 6.

DETAILS OF INTERMEDIATE BENTS NO. 4,5 AND 6

Detailed DEC 2024
Checked FEB 2025

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

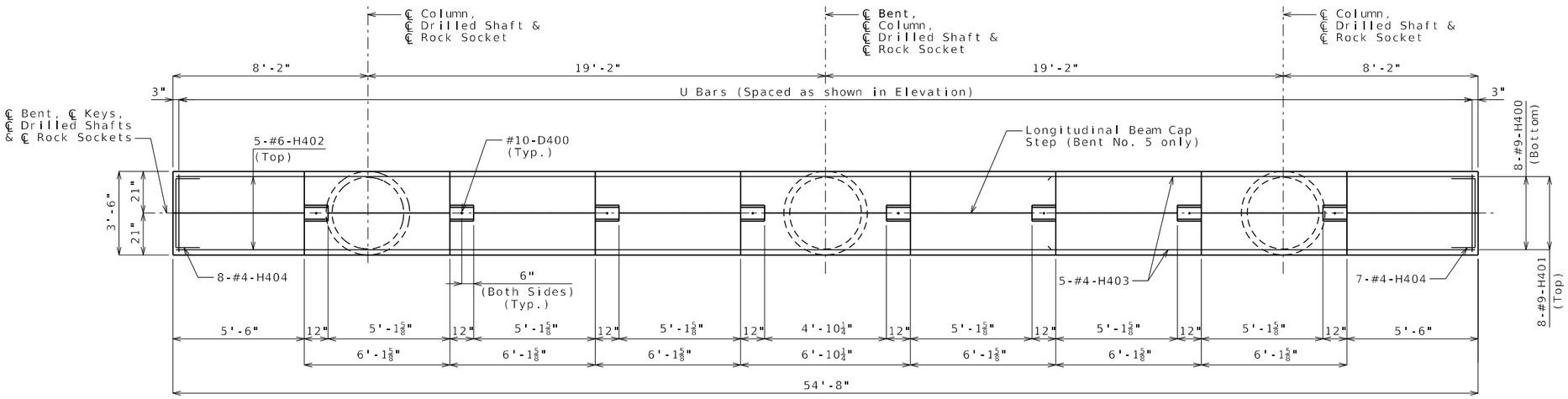
DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	12
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

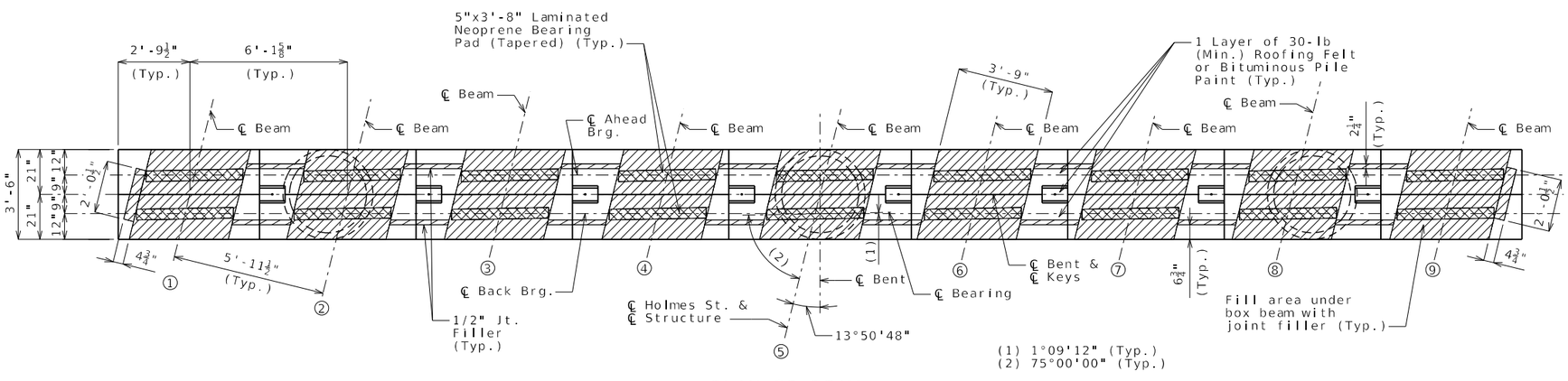
DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY NO. 001270



PLAN SHOWING REINFORCEMENT



PLAN OF BEAM

Notes:
Work this sheet with Sheets No. 12 and 14.
For steps 2 inches or more, use 2 1/4x1/2 inch joint filler up vertical face.
Bar marks are shown for Intermediate Bent No. 4 using "400" series for barmarks. Intermediate Bents No. 5 and 6 are similar, except use "500" and "600" series bar marks.

DETAILS OF INTERMEDIATE BENTS NO. 4,5 AND 6

Detailed DEC 2024
Checked FEB 2025

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	13
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION	DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
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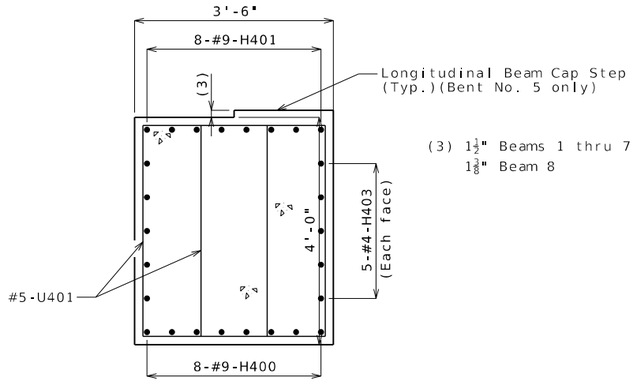
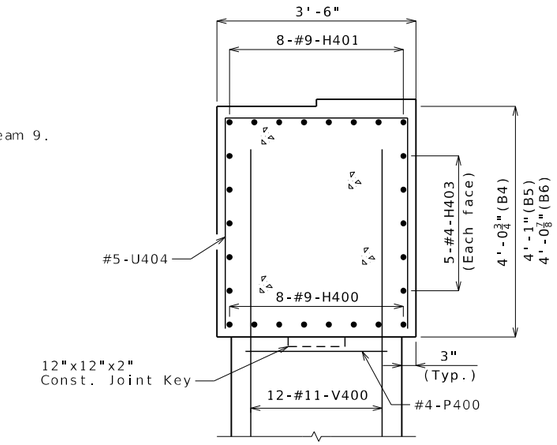
NO. 001270

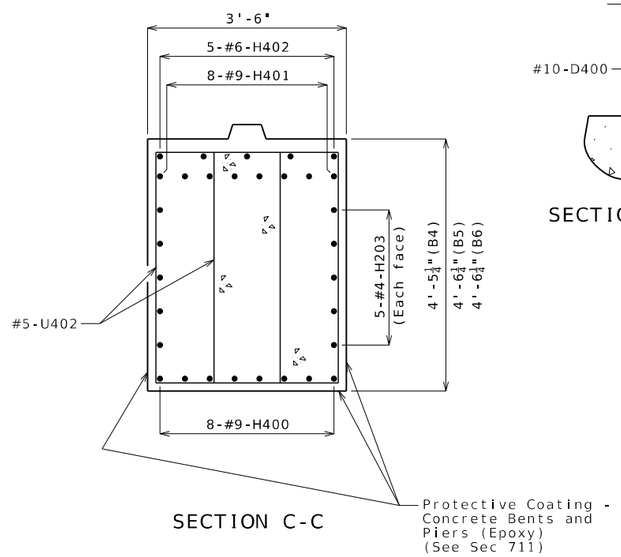


(3) $1\frac{1}{2}$" Beams 1 thru 7 and Beam 9.
$1\frac{3}{8}$" Beam 8

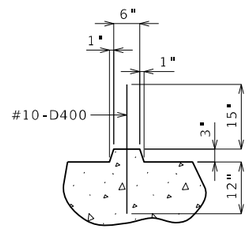
SECTION A-A



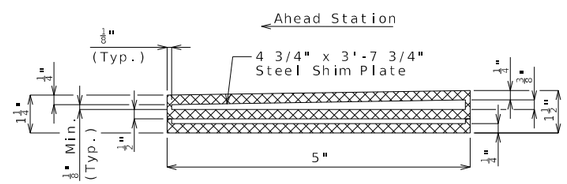
SECTION B-B



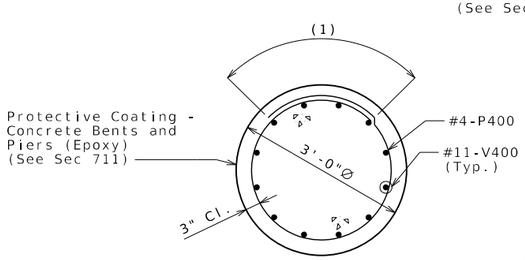
SECTION C-C



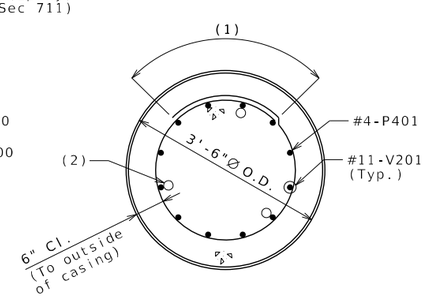
SECTION THRU KEY



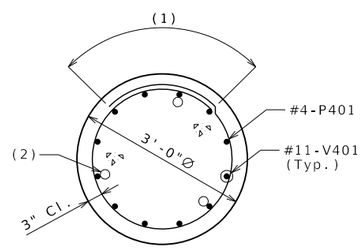
SECTION THRU LAMINATED NEOPRENE
BEARING PAD (TAPERED)
(18 Required per Bent)



SECTION D-D



SECTION E-E



SECTION F-F

(1) 2'-1" Min. Lap (#4-P400 & #4-P401)
(Stagger adjacent bar splices)

(2) 2"∅ Steel Pipe for sonic logging
testing (3 each shaft)

Substructure Quantity Table for Int. Bent No. 4		
Item		Quantity
Drilled Shafts (3 ft. 6 in. Dia.)	linear foot	9.0
Rock Sockets (3 ft. 0 in. Dia.)	linear foot	46.5
Video Camera Inspection	each	3
Foundation Inspection Holes	linear foot	76.5
Sonic Logging Testing	each	3
Class B Concrete (Substructure)	cu. yard	45.2
Reinforcing Steel (Bridges)	pound	6,299
Reinforcing Steel (Epoxy Coated)	pound	10,016
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1

Substructure Quantity Table for Int. Bent No. 5		
Item		Quantity
Drilled Shafts (3 ft. 6 in. Dia.)	linear foot	24.0
Rock Sockets (3 ft. 0 in. Dia.)	linear foot	63.0
Video Camera Inspection	each	3
Foundation Inspection Holes	linear foot	93.0
Sonic Logging Testing	each	3
Class B Concrete (Substructure)	cu. yard	43.4
Reinforcing Steel (Bridges)	pound	8,527
Reinforcing Steel (Epoxy Coated)	pound	9,334
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1

Substructure Quantity Table for Int. Bent No. 6		
Item		Quantity
Drilled Shafts (3 ft. 6 in. Dia.)	linear foot	56.1
Rock Sockets (3 ft. 0 in. Dia.)	linear foot	61.5
Video Camera Inspection	each	3
Foundation Inspection Holes	linear foot	91.5
Sonic Logging Testing	each	3
Class B Concrete (Substructure)	cu. yard	39.9
Reinforcing Steel (Bridges)	pound	10,689
Reinforcing Steel (Epoxy Coated)	pound	8,568
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1

These quantities are included in the Estimated Quantities table on Sheet No. 3.
All reinforcement in drilled shafts and rock sockets is included in the substructure quantities.
An additional 4 feet has been added to V-bar lengths and additional 5-#4-P401, 5-#4-P501 and 5-#4-P601 bars have been added for possible change in drilled shaft or rock socket length. The additional V-bar length shall be cut off or included in the reinforcement lap if not required. The P bars shall be spaced similarly to that shown in Elevation, if required, or a lesser spacing if not required but not less than 6-inch centers.

Notes:
Work this sheet with Sheets No. 12 and 13.
Bar marks are shown for Intermediate Bent No. 4 using "400" series for barmarks. Intermediate Bents No. 5 and 6 are similar, except use "500" and "600" series bar marks.

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025
ROUTE I-670 | STATE MO
DISTRICT BR | SHEET NO. 14
COUNTY JACKSON
JOB NO. JKU0024
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9599

DESCRIPTION
DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
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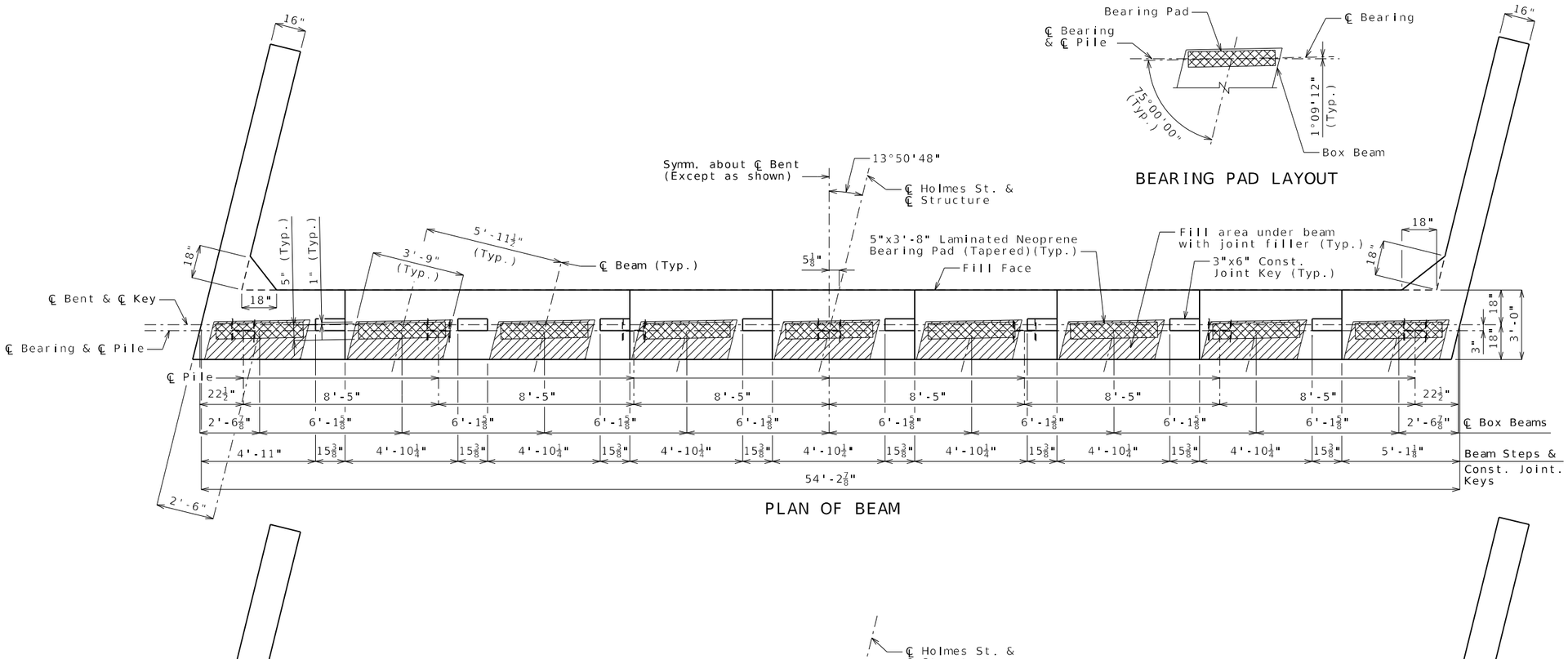
Detailed DEC 2024
Checked FEB 2025

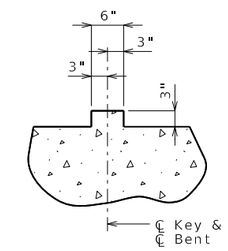
DETAILS OF INTERMEDIATE BENTS NO. 4, 5 AND 6

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

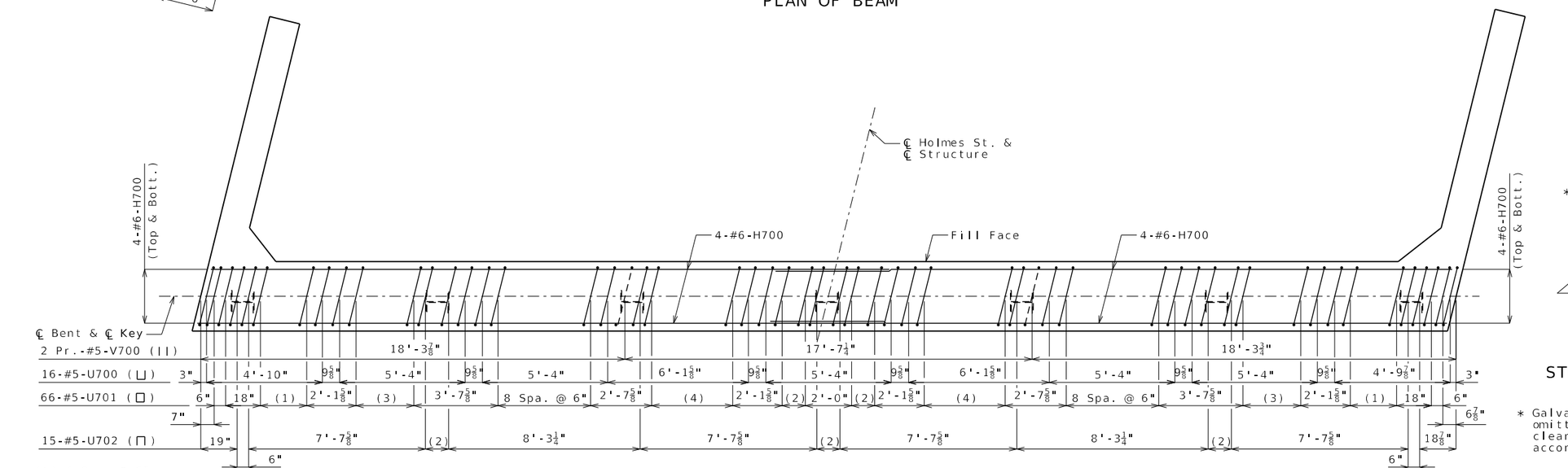


PLAN OF BEAM

BEARING PAD LAYOUT



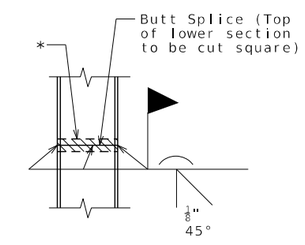
SECTION THRU KEY



(1) 4 Spa. @ 6"
(2) 2 Spa. @ 6"
(3) 5 Spa. @ 6"
(4) 7 Spa. @ 6"

PLAN OF BEAM SHOWING REINFORCEMENT

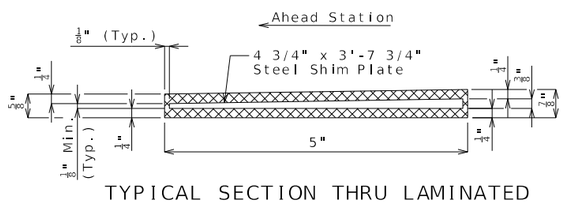
Keys not shown for clarity.



STEEL PILE SPLICE

(If required)

* Galvanizing material shall be omitted or removed one inch clear of weld locations in accordance with Sec 702.



TYPICAL SECTION THRU LAMINATED NEOPRENE BEARING PAD (TAPERED)

General Notes:

Work this sheet with Sheets No. 16 & 17.

All U bars and pairs of V bars shall be placed parallel to centerline of roadway.

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

Substructure Quantity Table for End Bent No. 7		
Item		Quantity
Galvanized Structural Steel Piles (12 in.)	linear foot	276
Dynamic Pile Testing	each	2
Pile Point Reinforcement	each	7
Class B Concrete (Substructure)	cu. yard	36.3

These quantities are included in the Estimated Quantities table on Sheet No. 3.

DETAILS OF END BENT NO. 7

Detailed DEC 2024
Checked JAN 2025

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STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

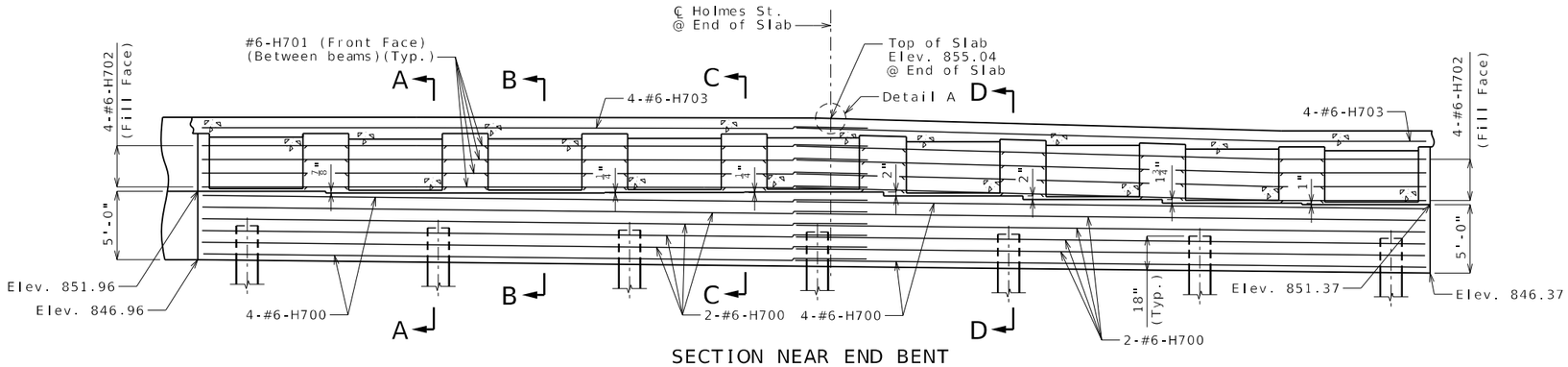
DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	15
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

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

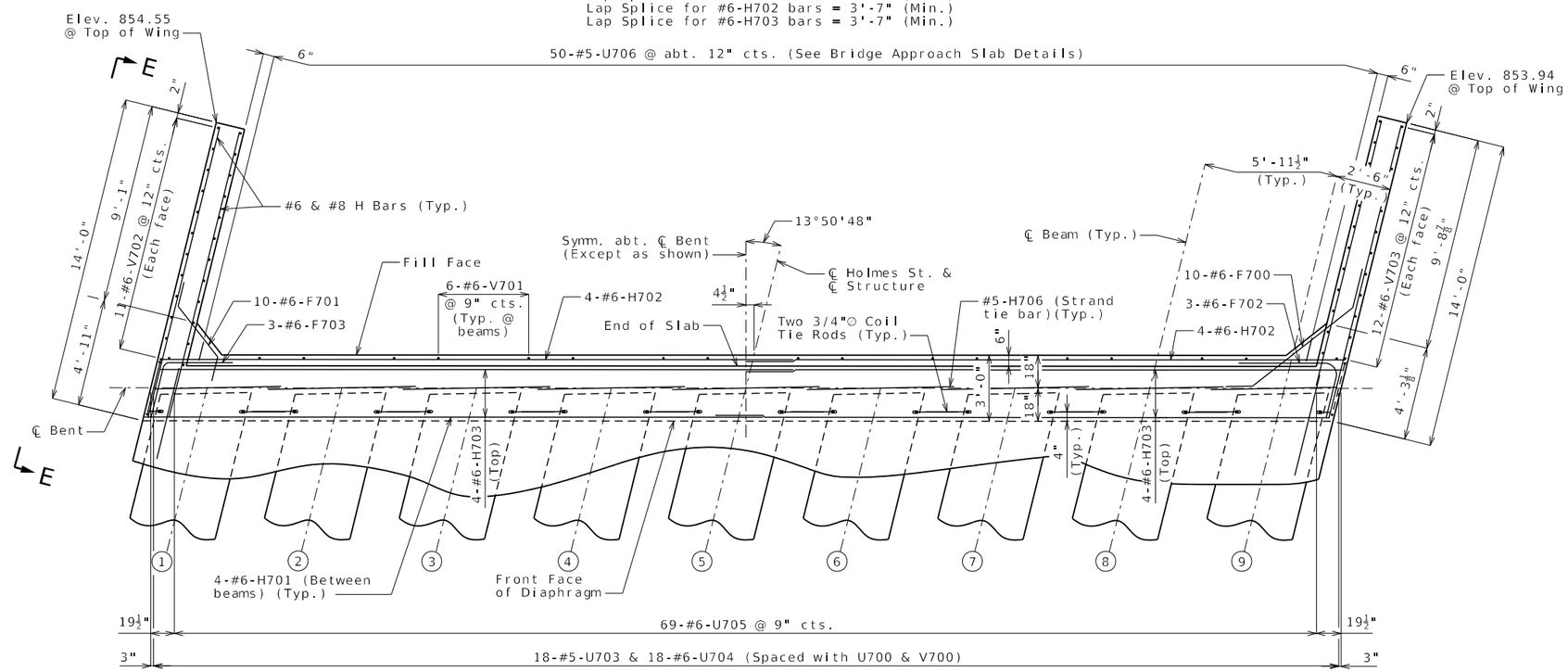
HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



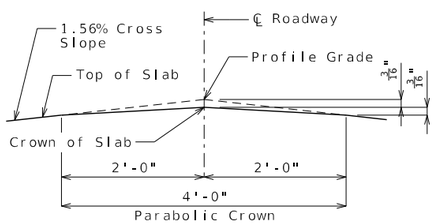
SECTION NEAR END BENT

(Looking Ahead Station)

Notes:
Lap Splice for #6-H700 bars = 3'-7" (Min.)
Lap Splice for #6-H702 bars = 3'-7" (Min.)
Lap Splice for #6-H703 bars = 3'-7" (Min.)



PART PLAN



DETAIL A

Notes:
Work this sheet with Sheets No. 15 & 17.
For Sections A-A, B-B, C-C and D-D and Elevation E-E, see Sheet No. 17.
The #6-F700 & #6-F701 bars shall be bent in the field to clear beams.
The U bars shall be placed parallel to centerline of roadway.
All concrete in the end bent above top of beam and below top of slab shall be Class B-2.
Strands at end of beams shall be field bent or, if necessary, cut in field to maintain 1 1/2-inch minimum clearance to fill face of end bent.
For location of coil tie rods and #5-H706 (strand tie bar), see Sheet No. 25.
For details of vertical drain at end bents, see Sheet No. 8.
For details of bridge approach slab, see Sheet No. 41.

DETAILS OF END BENT NO. 7

Detailed DEC 2024
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Note: This drawing is not to scale. Follow dimensions.

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04-03-25

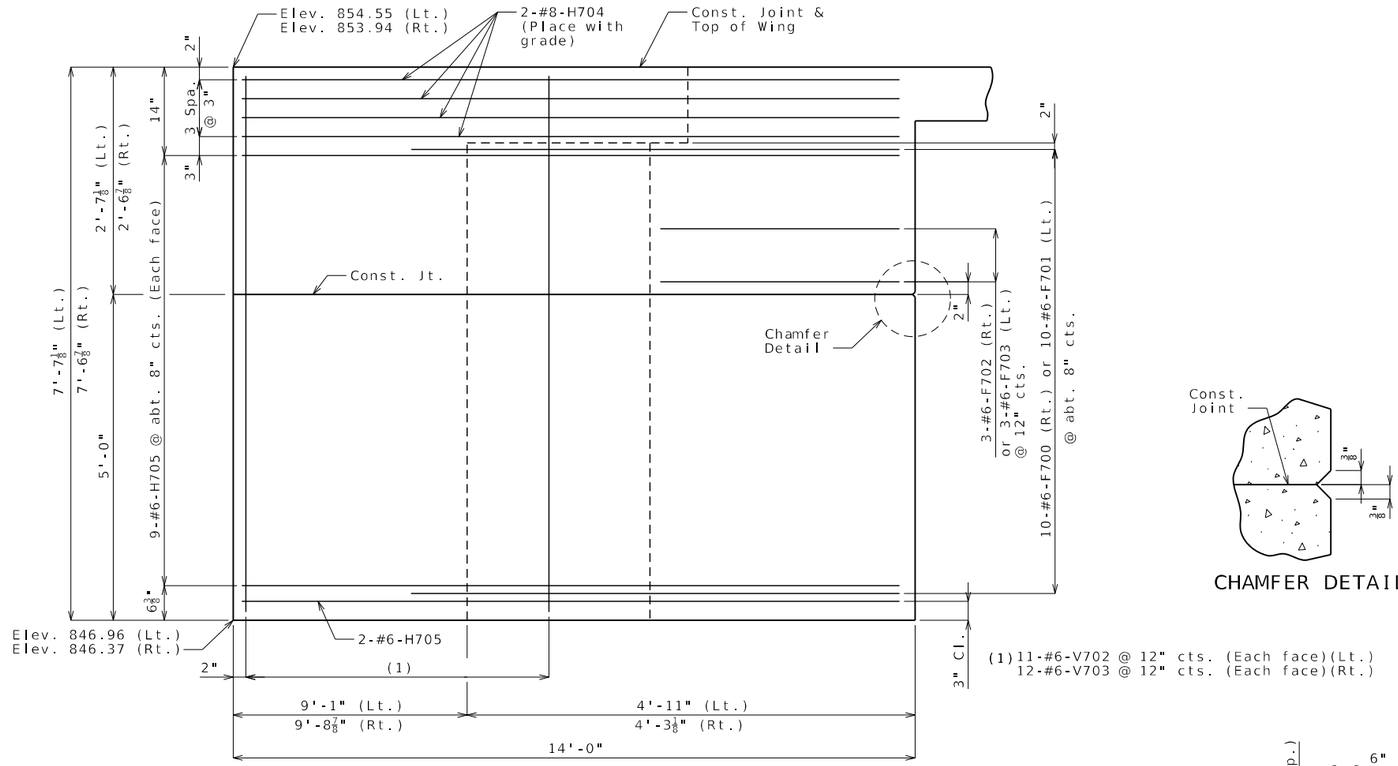
DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	16
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

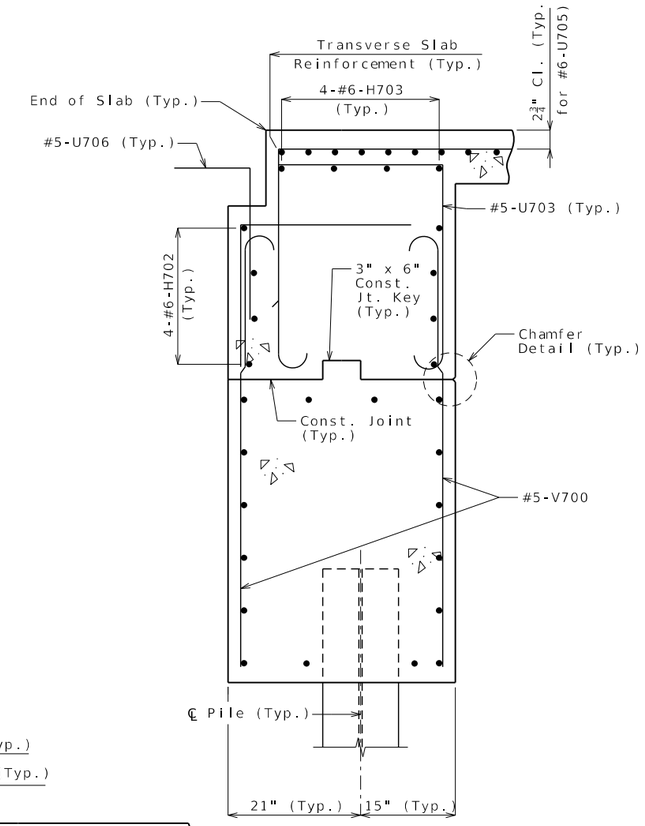
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

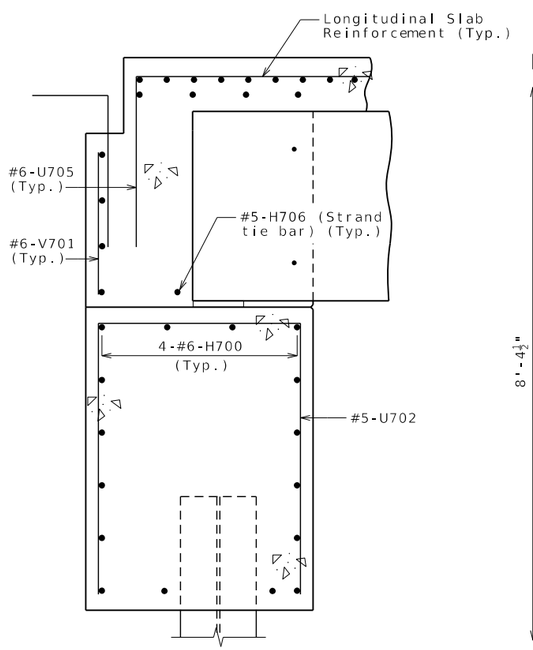


ELEVATION E-E

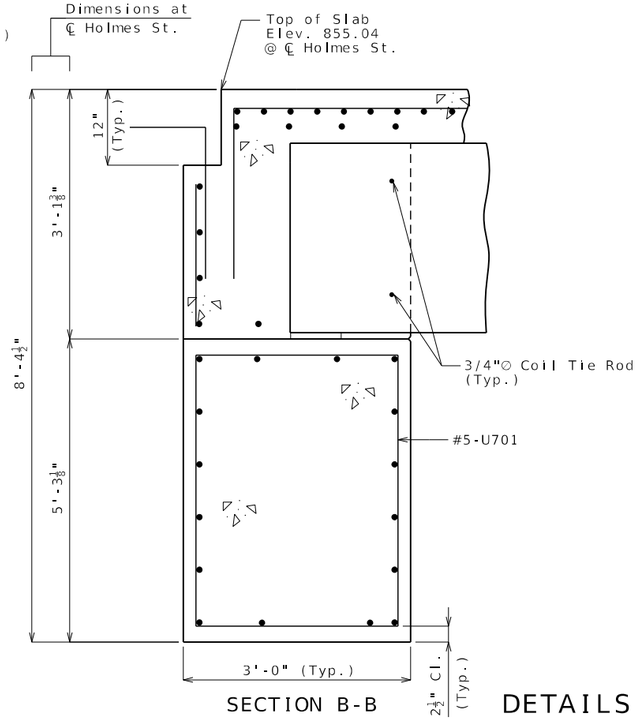
CHAMFER DETAIL



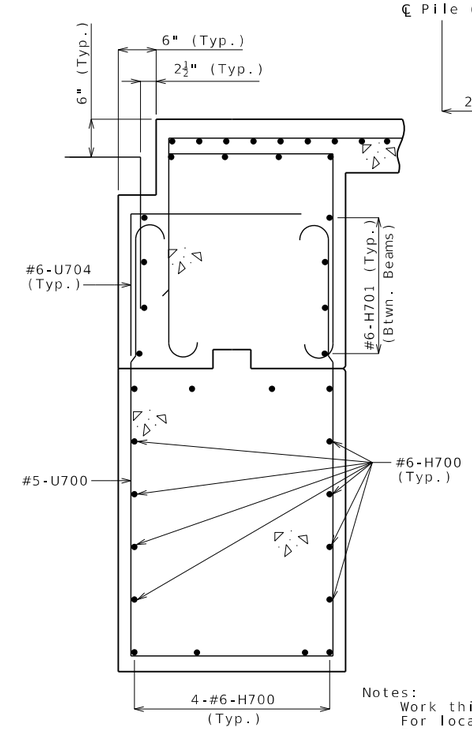
SECTION D-D



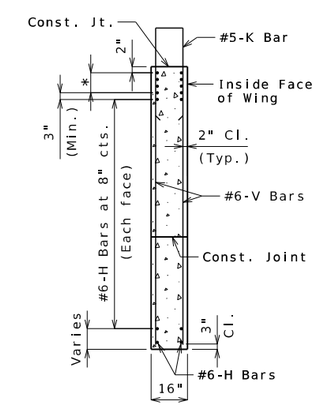
SECTION A-A



SECTION B-B



SECTION C-C



TYPICAL SECTION THRU WING

* #8-H Bars at 3" cts. (Each face)(Place with grade)

Notes:
Work this sheet with Sheets No. 15 & 16.
For location of Sections A-A, B-B, C-C and D-D and Elevation E-E, see Sheet No. 16.
For reinforcement of the Corral Curb, see Sheet No. 36.
For Form Liner Details not shown, See Sheet No. 38.

DETAILS OF END BENT NO. 7

Detailed DEC 2024
Checked JAN 2025

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

STATE OF MISSOURI
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PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	17
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION | DATE

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105 WEST CAPITOL
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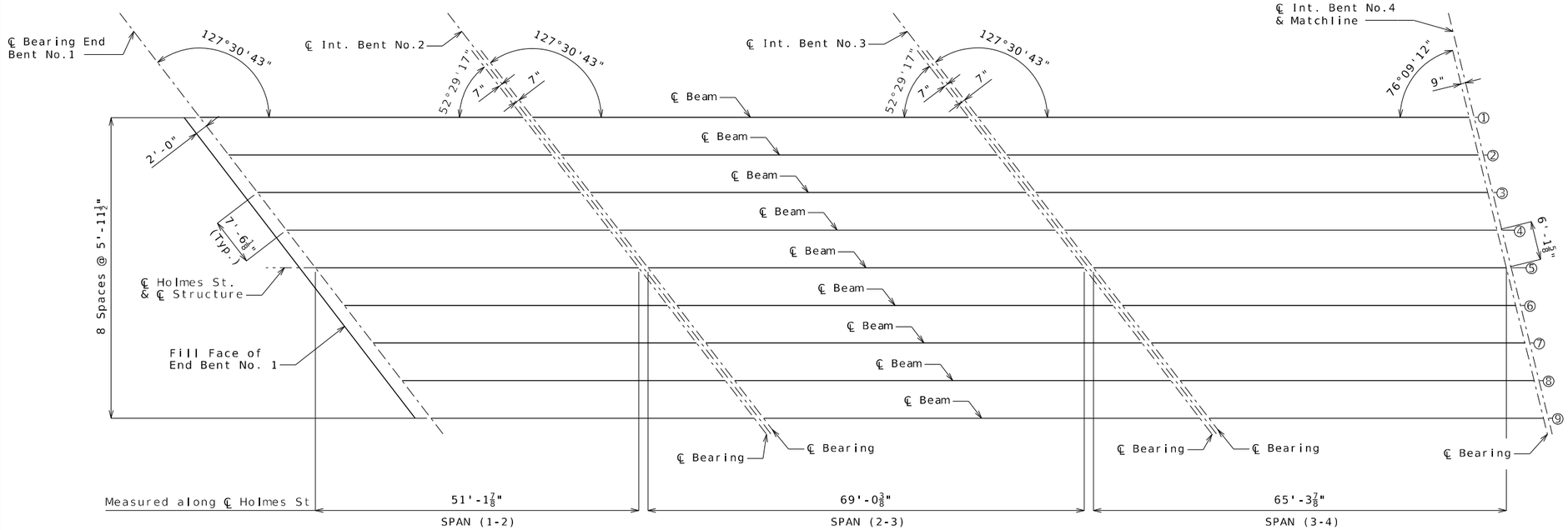

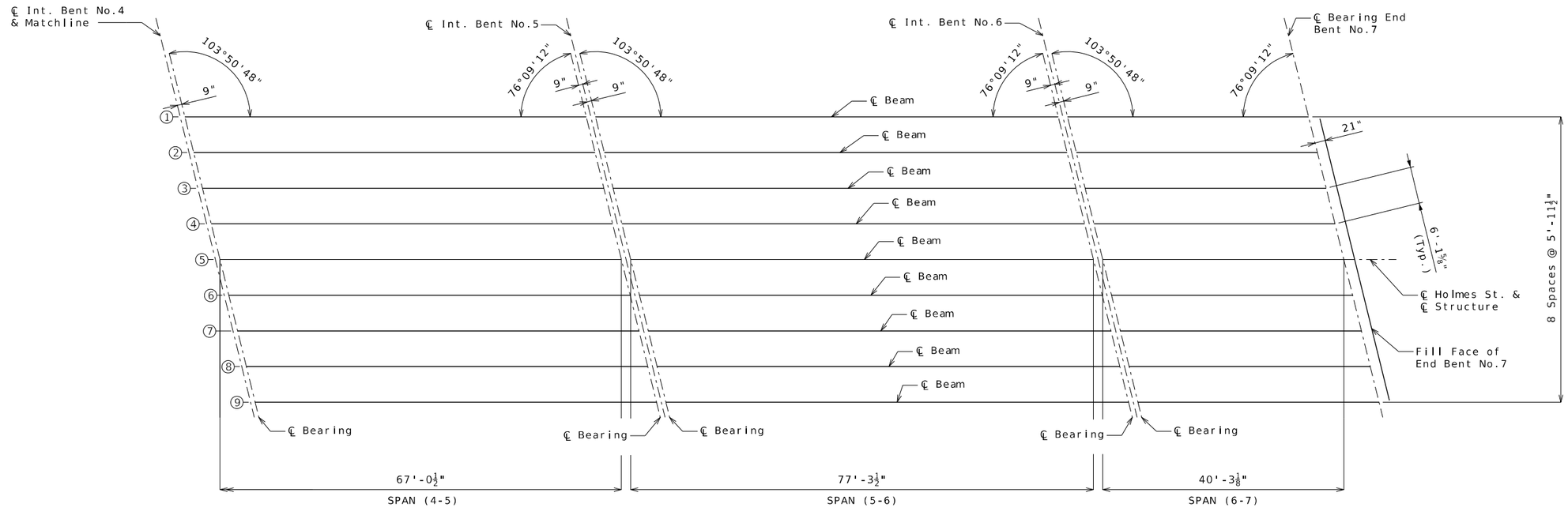

Note:
Longitudinal dimensions shown are horizontal.
All Beams are parallel.
℄ Beam No. 5 is coincident with ℄ Holmes St.

Detailed DEC 2024
Checked JAN 2025

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

FRAMING PLAN

Sheet No. 18 of 51

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	18
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

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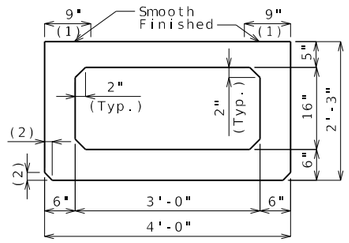
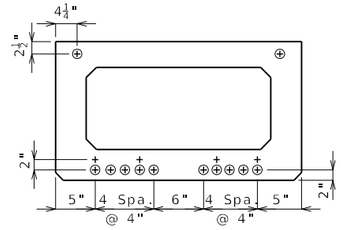


DIMENSIONS

(1) Fabricator shall apply a bond breaker to this region.

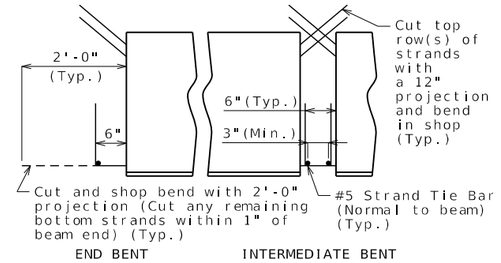


STRAND ARRANGEMENT

All strands are fully bonded unless otherwise noted.

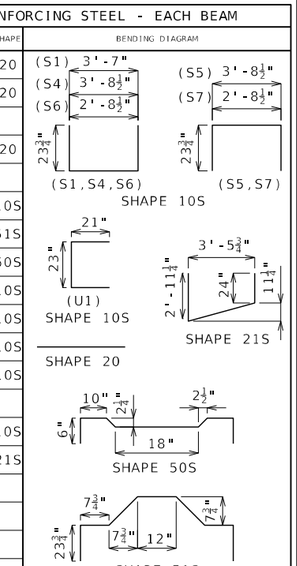
+ Indicates prestressing strand.

○ Indicates cut and shop bend with projection as noted in detail.

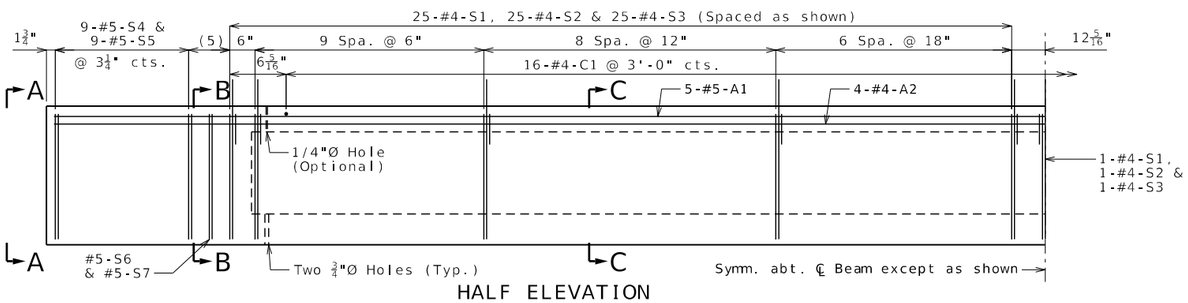


STRANDS AT BEAM ENDS

BILL OF REINFORCING STEEL - EACH BEAM				
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAM
5	5 A1	51'-9"	20	
4	4 A2	51'-9"	20	
16	4 C1	3'-7"	20	
51	4 S1	7'-5"	10S	
51	4 S2	7'-10"	51S	
51	4 S3	4'-6"	50S	
18	5 S4	7'-6"	10S	
18	5 S5	7'-6"	10S	
2	5 S6	6'-6"	10S	
2	5 S7	6'-6"	10S	
12	6 U1	5'-1"	10S	
6	4 U2	8'-4"	21S	



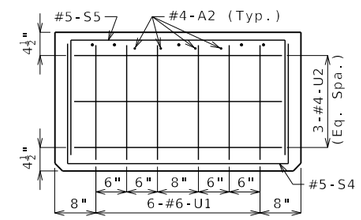
(2) 1½" (Typ.) (¾" Optional)



HALF ELEVATION

Dimensions taken along ℄ Beam.

(5) 2 Spa. @ 4"



ELEVATION A-A

Strands not shown for clarity.

All dimensions are out to out. Use symmetry for dimensions not shown.

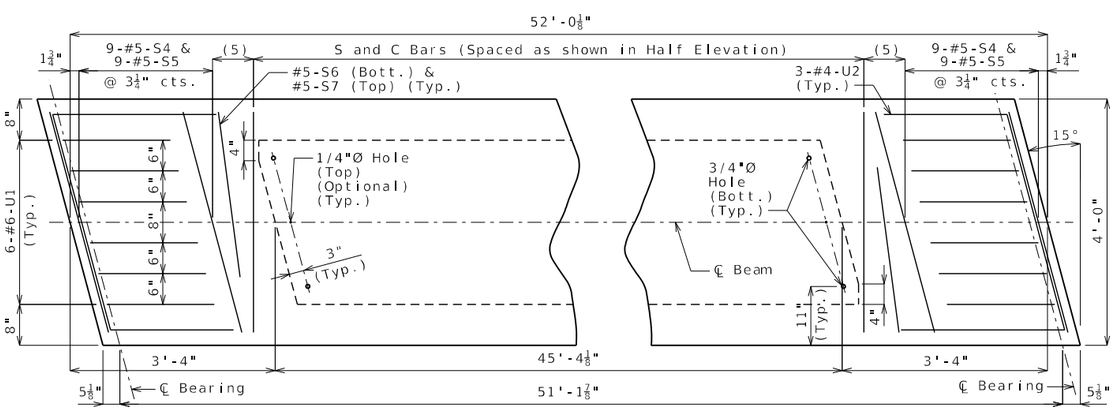
Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures, Stirrup and Tie Dimensions.

Actual lengths are measured along centerline of bar to the nearest inch.

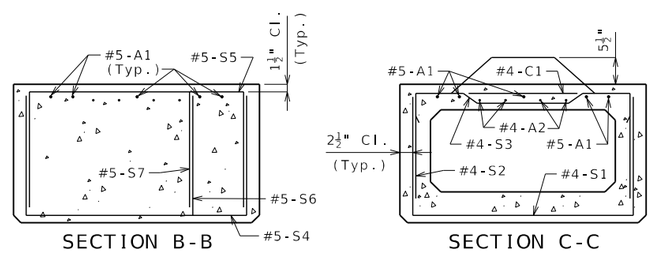
Minimum clearance to reinforcing shall be one inch, unless otherwise shown.

All reinforcement shall be Grade 60.

All S2 bars shall be epoxy coated.



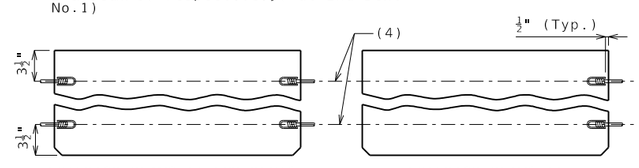
PART PLAN



SECTION B-B

SECTION C-C

(4) ℄ 3/4"Ø (Min.) Coil Tie Rods 2'-4" long (14" & 5" at exterior face of Beam 1 & Beam 9, respectively, at End Bent No.1)

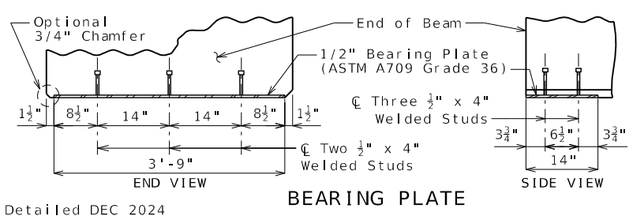


EXTERIOR BEAMS AT END BENTS
INTERIOR BEAMS AT ALL BENTS

EXTERIOR BEAMS AT INTERMEDIATE BENTS

COIL TIES

Coil tie inserts shall be staggered a minimum distance so that the coil tie rods of adjacent beams do not conflict.



BEARING PLATE

General Notes:

Concrete for prestressed beams shall be Class A-1 with f'c = 10,000 psi and f'ci = 7,500 psi.

Use 16 strands, 0.6"Ø Grade 270, with an initial prestress force of 703 kips.

Pretensioned members shall be in accordance with Sec 1029.

Fabricator shall be responsible for location and design of lifting devices.

Exterior and interior beams are the same except: coil ties.

For Beam Camber Diagram, see Sheet No. 28.

For location of coil ties at concrete bent diaphragms, see Sheets No. 6 and 26.

Detailed DEC 2024
Checked JAN 2025

SPREAD BOX BEAMS - SPAN (1-2)

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025

ROUTE	STATE
I-670	MO
DISTRICT	SHEET NO.
BR	19

COUNTY JACKSON

JOB NO. JKU0024

CONTRACT ID.

PROJECT NO.

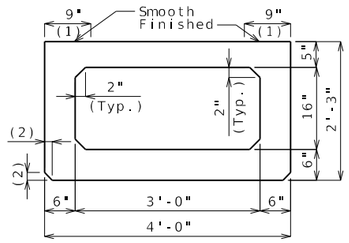
BRIDGE NO. A9599

DESCRIPTION

DATE

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

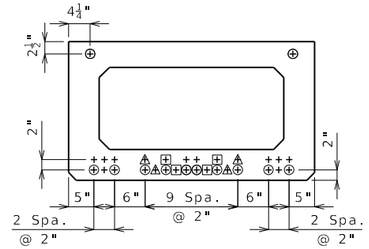
HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



DIMENSIONS

(1) Fabricator shall apply a bond breaker to this region.

(2) $1\frac{1}{2}$" (Typ.) ($\frac{3}{4}$" Optional)



STRAND ARRANGEMENT

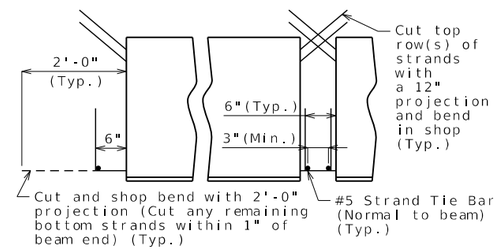
All strands are fully bonded unless otherwise noted.

+ Indicates prestressing strand.

○ Indicates cut and shop bend with projection as noted in detail.

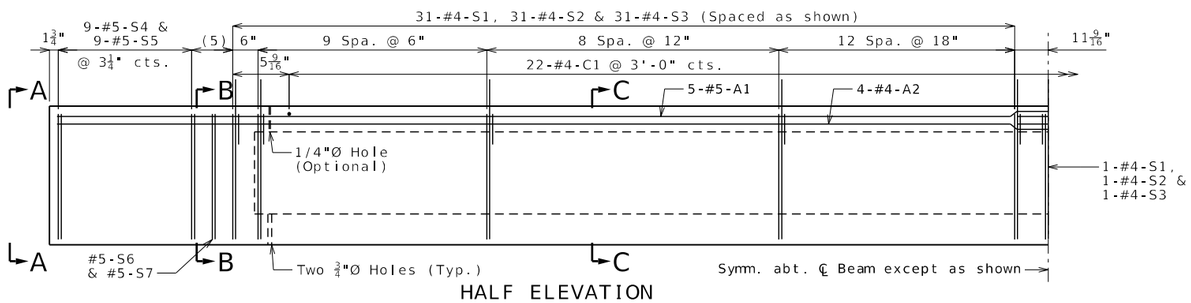
□ Indicates debonded for 2'-0" from end of beam.

△ Indicates debonded for 4'-0" from end of beam.



INTERMEDIATE BENT

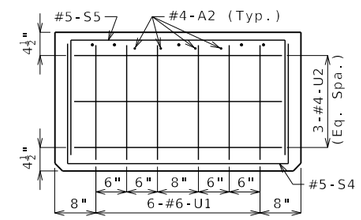
STRANDS AT BEAM ENDS



HALF ELEVATION

Dimensions taken along ℄ Beam.

(5) 2 Spa. @ 4"

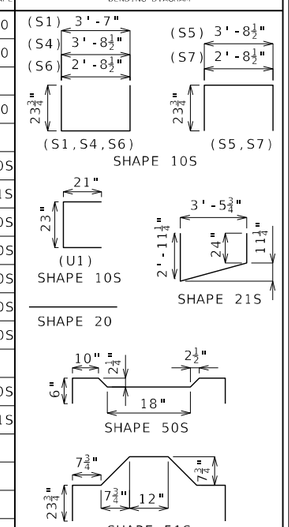


ELEVATION A-A

Strands not shown for clarity.

BILL OF REINFORCING STEEL - EACH BEAM			
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE
10	5 A1	36'-2"	20
8	4 A2	35'-11"	20
22	4 C1	3'-7"	20
63	4 S1	7'-5"	10S
63	4 S2	7'-10"	51S
63	4 S3	4'-6"	50S
18	5 S4	7'-6"	10S
18	5 S5	7'-6"	10S
2	5 S6	6'-6"	10S
2	5 S7	6'-6"	10S
12	6 U1	5'-1"	10S
6	4 U2	8'-4"	21S

BENDING DIAGRAM



All dimensions are out to out. Use symmetry for dimensions not shown.

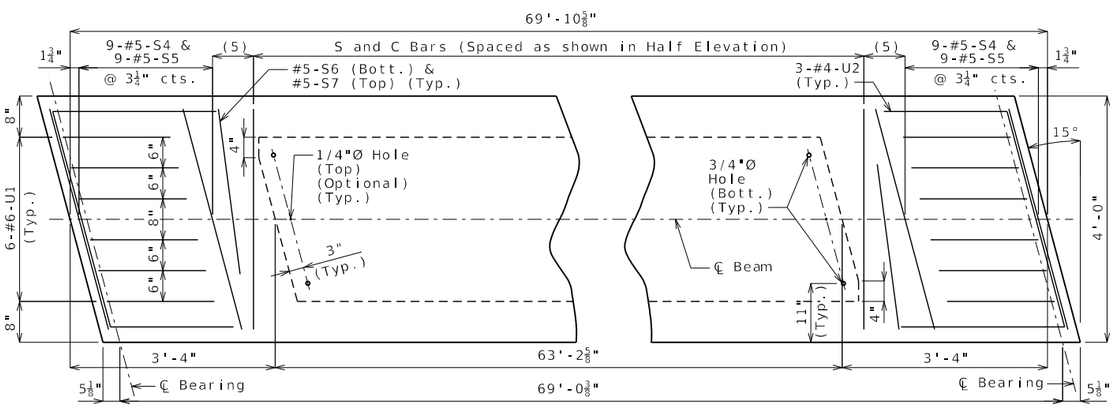
Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures, Stirrup and Tie Dimensions.

Actual lengths are measured along centerline of bar to the nearest inch.

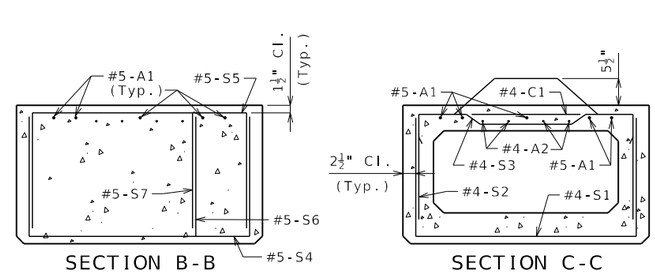
Minimum clearance to reinforcing shall be one inch, unless otherwise shown.

All reinforcement shall be Grade 60.

All S2 bars shall be epoxy coated.



PART PLAN



SECTION B-B

SECTION C-C

General Notes:

Concrete for prestressed beams shall be Class A-1 with f'c = 10,000 psi and f'ci = 7,500 psi.

Use 30 strands, 0.6"Ø Grade 270, with an initial prestress force of 1318 kips.

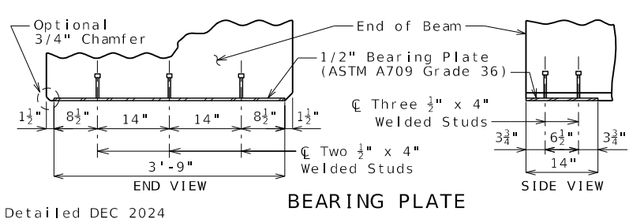
Pretensioned members shall be in accordance with Sec 1029.

Fabricator shall be responsible for location and design of lifting devices.

Exterior and interior beams are the same except: coil ties.

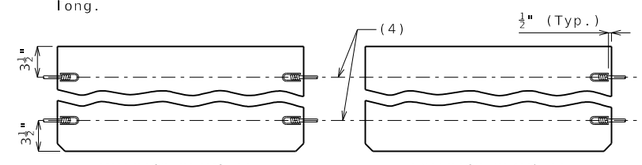
For Beam Camber Diagram, see Sheet No. 28.

For location of coil ties at concrete bent diaphragms, see Sheet No. 26.



BEARING PLATE

(4) ℄ 3/4"Ø (Min.) Coil Tie Rods 2'-4" long.



INTERIOR BEAMS AT INTERMEDIATE BENTS

EXTERIOR BEAMS AT INTERMEDIATE BENTS

COIL TIES

Coil tie inserts shall be staggered a minimum distance so that the coil tie rods of adjacent beams do not conflict.

Detailed DEC 2024
Checked JAN 2025

SPREAD BOX BEAMS - SPAN (2-3)

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

STATE OF MISSOURI — VAN WILLIAM ROBBINS — PE-2017015106 — PROFESSIONAL ENGINEER

Van W. Robbins 04-03-25

DATE PREPARED 04/03/2025

ROUTE	STATE
I-670	MO
DISTRICT	SHEET NO.
BR	20

COUNTY: JACKSON

JOB NO.: JKU0024

CONTRACT ID.

PROJECT NO.

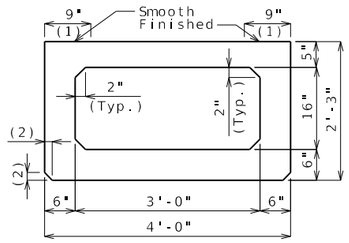
BRIDGE NO.: A9599

DESCRIPTION

DATE

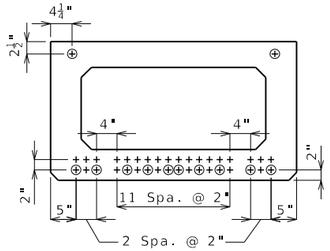
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY NO. 001270



DIMENSIONS

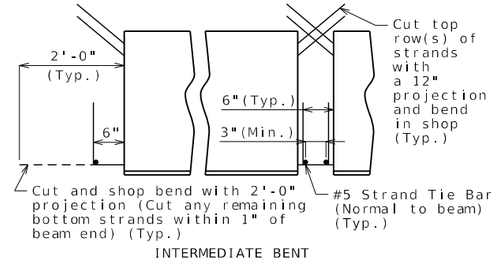
(1) Fabricator shall apply a bond breaker to this region.



STRAND ARRANGEMENT

+ Indicates prestressing strand.

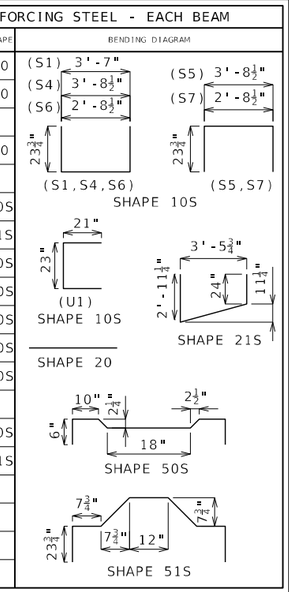
○ Indicates cut and shop bend with projection as noted in detail.



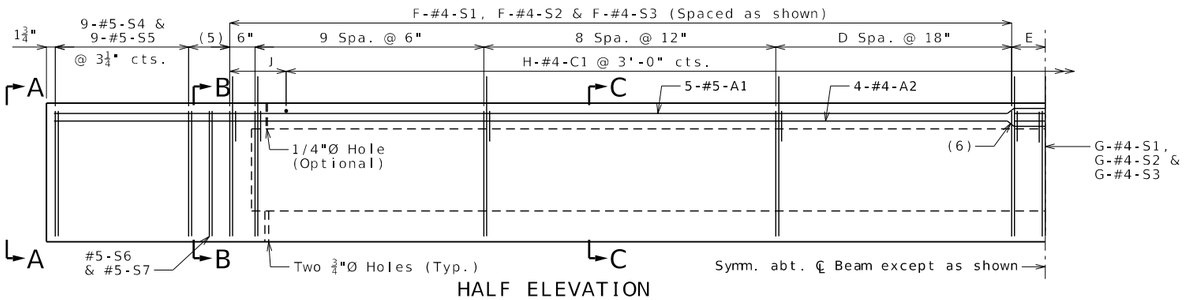
INTERMEDIATE BENT

STRANDS AT BEAM ENDS

BILL OF REINFORCING STEEL - EACH BEAM				
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAM
L	5 A1	P	20	
M	4 A2	N	20	
H	4 C1	3'-7"	20	
K	4 S1	7'-5"	10S	
K	4 S2	7'-10"	51S	
K	4 S3	4'-6"	50S	
18	5 S4	7'-6"	10S	
18	5 S5	7'-6"	10S	
2	5 S6	6'-6"	10S	
2	5 S7	6'-6"	10S	
12	6 U1	5'-1"	10S	
6	4 U2	8'-4"	21S	

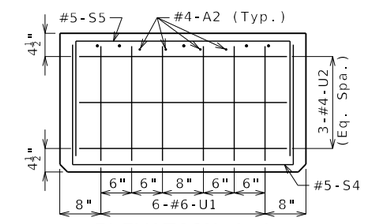


(2) 1½" (Typ.) (¾" Optional)



HALF ELEVATION

Dimensions taken along ℄ Beam.



ELEVATION A-A

Strands not shown for clarity.

All dimensions are out to out. Use symmetry for dimensions not shown.

Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures, Stirrup and Tie Dimensions.

Actual lengths are measured along centerline of bar to the nearest inch.

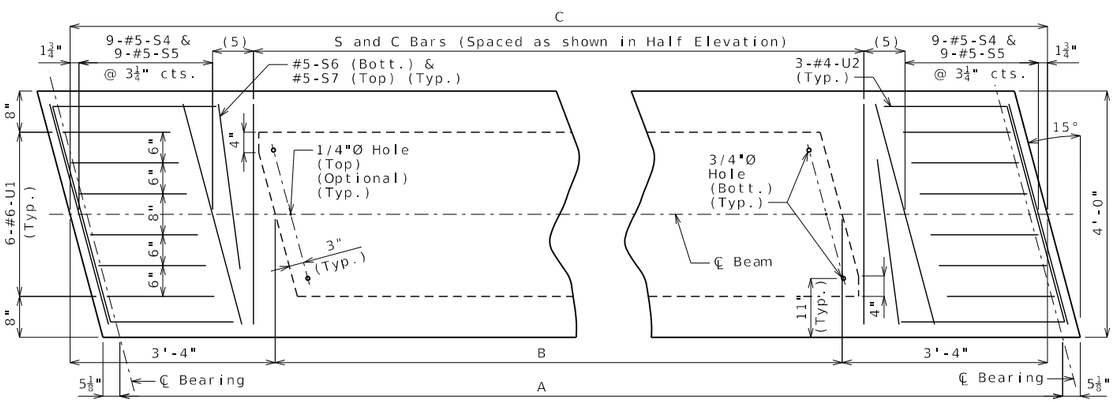
Minimum clearance to reinforcing shall be one inch, unless otherwise shown.

All reinforcement shall be Grade 60.

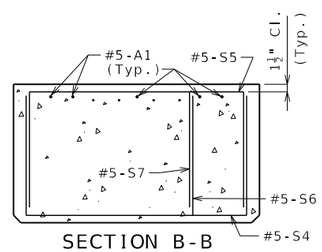
All S2 bars shall be epoxy coated.

(5) 2 Spa. @ 4"

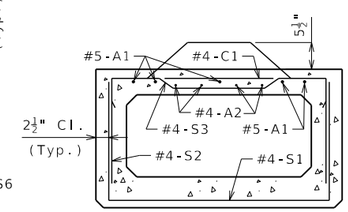
(6) Lap splice required for Beams 1 thru 6. Not required for Beams 7 thru 9.



PART PLAN



SECTION B-B



SECTION C-C

General Notes:

Concrete for prestressed beams shall be Class A-1 with f'c = 10,000 psi and f'ci = 7,500 psi.

Use 38 strands, 0.6"Ø Grade 270, with an initial prestress force of 1670 kips.

Pretensioned members shall be in accordance with Sec 1029.

Fabricator shall be responsible for location and design of lifting devices.

Exterior and interior beams are the same except: coil ties.

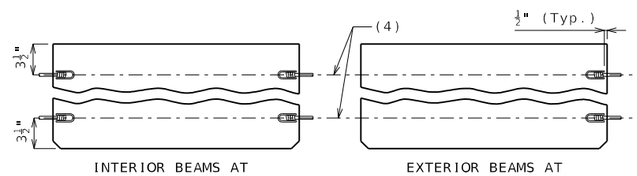
For Beam Camber Diagram, see Sheet No. 28.

For location of coil ties at concrete bent diaphragms, see Sheet No. 26 and 27.

For Table of Variables, see Sheet No. 22.

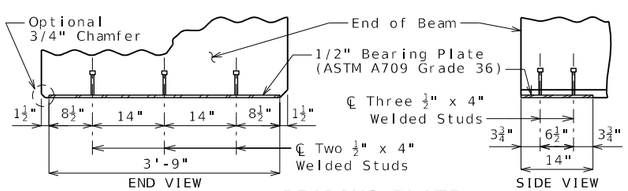
For debonding details, see Sheet No. 22.

(4) ℄ 3/4"Ø (Min.) Coil Tie Rods 2'-4 Long



COIL TIES

Coil tie inserts shall be staggered a minimum distance so that the coil tie rods of adjacent beams do not conflict.



BEARING PLATE

Detailed DEC 2024
Checked JAN 2025

SPREAD BOX BEAMS - SPAN (3-4)

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

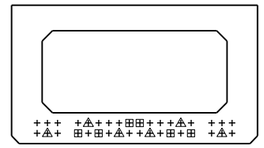
DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	21
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

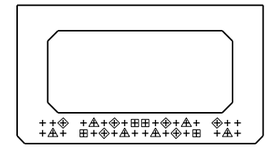
DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



Beams 1 thru 5



Beams 6 thru 9

DEBONDING DETAILS

Debonding Notes:

All strands are fully bonded unless otherwise noted.

⊞ Indicates debonded for 4'-0" from end of beam.

△ Indicates debonded for 8'-0" from end of beam.

◈ Indicates debonded for 12'-0" from end of beam.

TABLE OF VARIABLES

Beam	A	B	C	D	E	F	G	H	J	K	L	M	N	P
1	77'-9"	71'-11¼"	78'-7¼"	15	9⅞"	34	1	25	3⅞"	69	10	8	40'-3"	40'-6"
2	74'-7¾"	68'-10"	75'-6"	14	9¼"	33	1	24	3¼"	67	10	8	38'-8"	38'-11"
3	71'-6⅜"	65'-8⅝"	72'-4⅝"	13	8 9/16"	32	0	23	2 9/16"	64	10	8	37'-2"	37'-5"
4	68'-5⅛"	62'-7⅜"	69'-3⅜"	12	7 15/16"	31	0	21	19 15/16"	62	10	8	35'-7"	35'-10"
5	65'-3⅞"	59'-6⅛"	66'-2⅛"	11	7 5/16"	30	0	20	19 5/16"	60	10	8	34'-1"	34'-4"
6	62'-2⅝"	56'-4⅞"	63'-0⅞"	10	6 11/16"	29	0	19	18 11/16"	58	10	8	32'-6"	32'-9"
7	59'-1⅜"	53'-3⅝"	59'-11⅝"	9	6 1/16"	28	0	18	18 1/16"	56	5	4	59'-8"	59'-8"
8	56'-0⅛"	50'-2⅜"	56'-10⅜"	8	5 7/16"	27	0	17	17 7/16"	54	5	4	56'-7"	56'-7"
9	52'-10⅞"	47'-1⅛"	53'-9⅛"	7	4 13/16"	26	0	16	16 13/16"	52	5	4	53'-6"	53'-6"

Notes:

For location of variable, see Sheet No. 21.

For additional Span (3-4) notes and details, see Sheet No. 21.

Detailed DEC 2024
Checked JAN 2025

SPREAD BOX BEAMS - SPAN (3-4)

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025

ROUTE	STATE
I-670	MO
DISTRICT	SHEET NO.
BR	22

COUNTY JACKSON

JOB NO. JKU0024

CONTRACT ID.

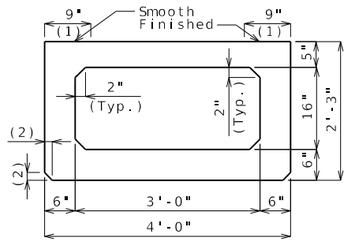
PROJECT NO.

BRIDGE NO. A9599

DESCRIPTION	DATE

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

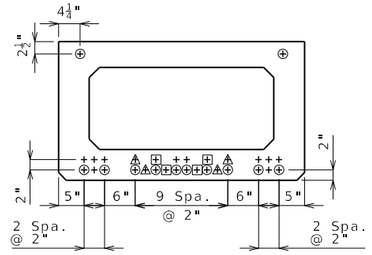
HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



DIMENSIONS

(1) Fabricator shall apply a bond breaker to this region.

(2) $1\frac{1}{2}$" (Typ.) ($\frac{3}{4}$" Optional)



STRAND ARRANGEMENT

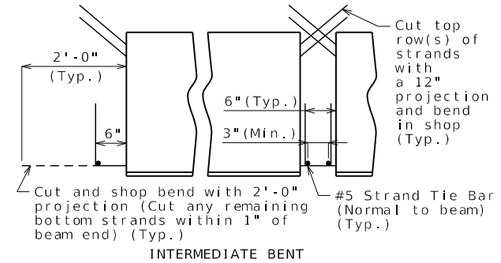
All strands are fully bonded unless otherwise noted.

+ Indicates prestressing strand.

○ Indicates cut and shop bend with projection as noted in detail.

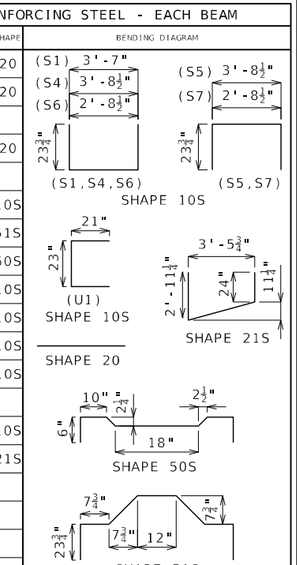
□ Indicates debonded for 2'-0" from end of beam.

△ Indicates debonded for 4'-0" from end of beam.



STRANDS AT BEAM ENDS

BILL OF REINFORCING STEEL - EACH BEAM				
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAM
10	5 A1	35'-2"	20	
8	4 A2	34'-11"	20	
21	4 C1	3'-7"	20	
61	4 S1	7'-5"	10S	
61	4 S2	7'-10"	51S	
61	4 S3	4'-6"	50S	
18	5 S4	7'-6"	10S	
18	5 S5	7'-6"	10S	
2	5 S6	6'-6"	10S	
2	5 S7	6'-6"	10S	
12	6 U1	5'-1"	10S	
6	4 U2	8'-4"	21S	



All dimensions are out to out. Use symmetry for dimensions not shown.

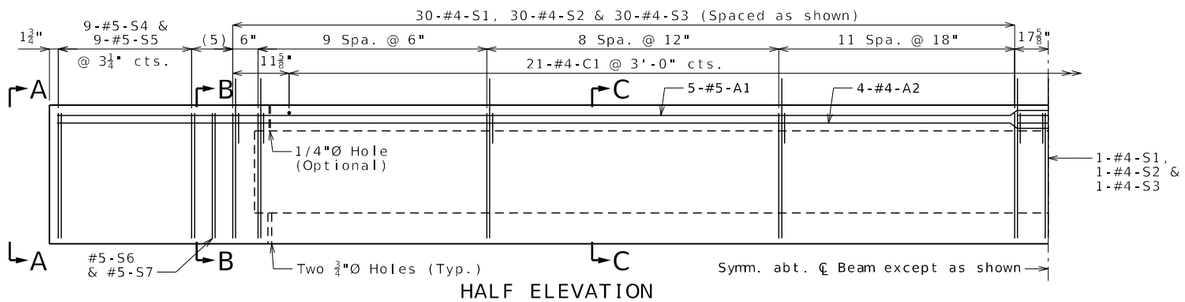
Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures, Stirrup and Tie Dimensions.

Actual lengths are measured along centerline of bar to the nearest inch.

Minimum clearance to reinforcing shall be one inch, unless otherwise shown.

All reinforcement shall be Grade 60.

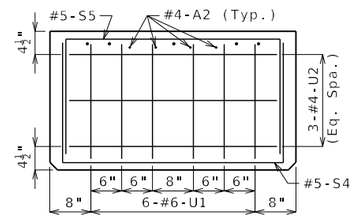
All S2 bars shall be epoxy coated.



HALF ELEVATION

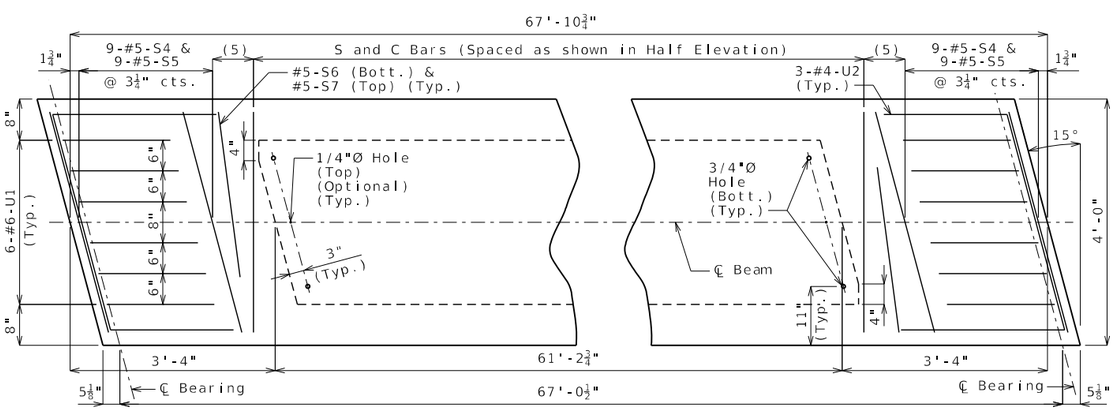
Dimensions taken along ℄ Beam.

(5) 2 Spa. @ 4"

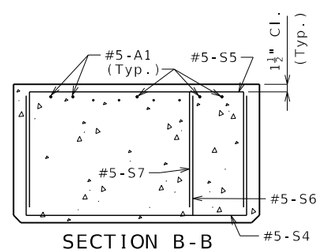


ELEVATION A-A

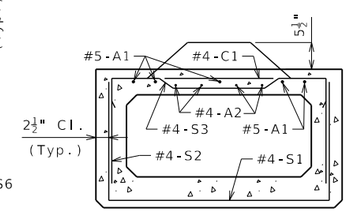
Strands not shown for clarity.



PART PLAN

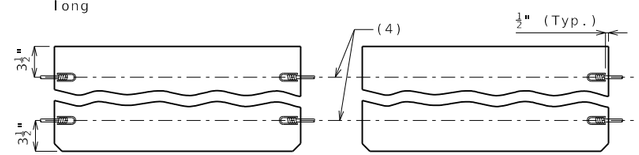


SECTION B-B



SECTION C-C

(4) ℄ 3/4"Ø (Min.) Coil Tie Rods 2'-4" long

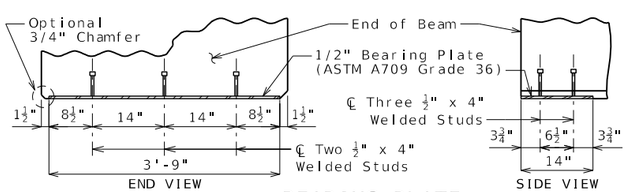


INTERIOR BEAMS AT INTERMEDIATE BENTS

EXTERIOR BEAMS AT INTERMEDIATE BENTS

COIL TIES

Coil tie inserts shall be staggered a minimum distance so that the coil tie rods of adjacent beams do not conflict.



BEARING PLATE

General Notes:

Concrete for prestressed beams shall be Class A-1 with f'c = 10,000 psi and f'ci = 7,500 psi.

Use 30 strands, 0.6"Ø Grade 270, with an initial prestress force of 1318 kips.

Pretensioned members shall be in accordance with Sec 1029.

Fabricator shall be responsible for location and design of lifting devices.

Exterior and interior beams are the same except: coil ties.

For Beam Camber Diagram, see Sheet No. 28.

For location of coil ties at concrete bent diaphragms, see Sheet No. 27.

Detailed DEC 2024
Checked JAN 2025

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

SPREAD BOX BEAMS - SPAN (4-5)

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025

ROUTE	STATE
I-670	MO
DISTRICT	SHEET NO.
BR	23

COUNTY JACKSON

JOB NO. JKU0024

CONTRACT ID.

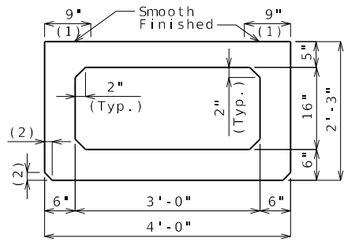
PROJECT NO.

BRIDGE NO. A9599

DESCRIPTION	DATE

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

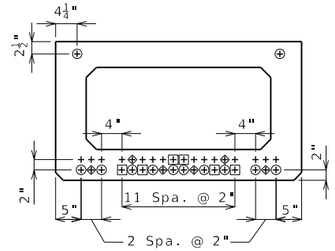
HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



DIMENSIONS

(1) Fabricator shall apply a bond breaker to this region.

(2) $1\frac{1}{2}$" (Typ.) ($\frac{3}{4}$" Optional)



STRAND ARRANGEMENT

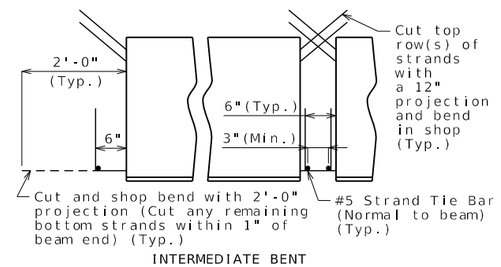
All strands are fully bonded unless otherwise noted.

+ Indicates prestressing strand.

○ Indicates cut and shop bend with projection as noted in detail.

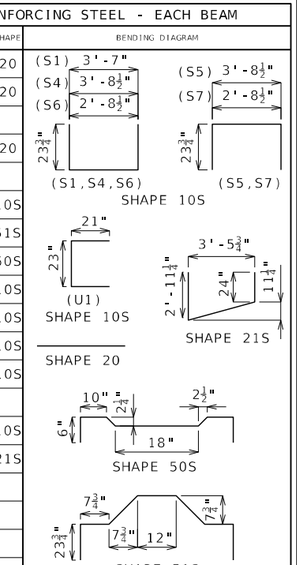
□ Indicates debonded for 4'-0" from end of beam.

◇ Indicates debonded for 8'-0" from end of beam.



STRANDS AT BEAM ENDS

BILL OF REINFORCING STEEL - EACH BEAM				
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAM
10	5 A1	40'-3"	20	
8	4 A2	40'-0"	20	
24	4 C1	3'-7"	20	
68	4 S1	7'-5"	10S	
68	4 S2	7'-10"	51S	
68	4 S3	4'-6"	50S	
18	5 S4	7'-6"	10S	
18	5 S5	7'-6"	10S	
2	5 S6	6'-6"	10S	
2	5 S7	6'-6"	10S	
12	6 U1	5'-1"	10S	
6	4 U2	8'-4"	21S	



All dimensions are out to out. Use symmetry for dimensions not shown.

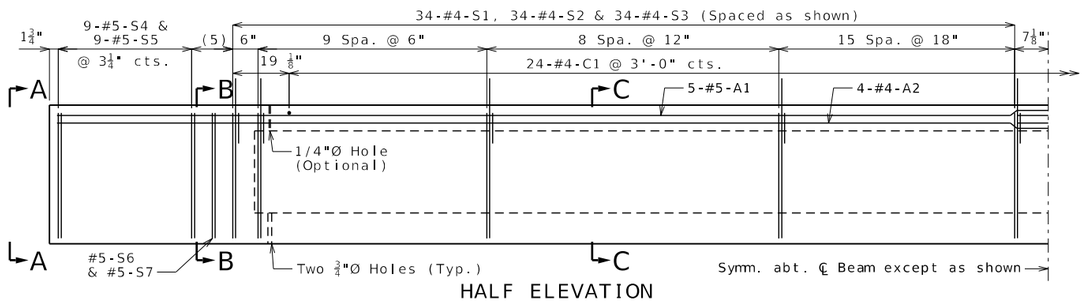
Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures, Stirrup and Tie Dimensions.

Actual lengths are measured along centerline of bar to the nearest inch.

Minimum clearance to reinforcing shall be one inch, unless otherwise shown.

All reinforcement shall be Grade 60.

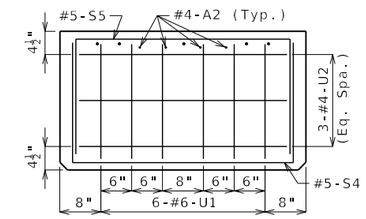
All S2 bars shall be epoxy coated.



HALF ELEVATION

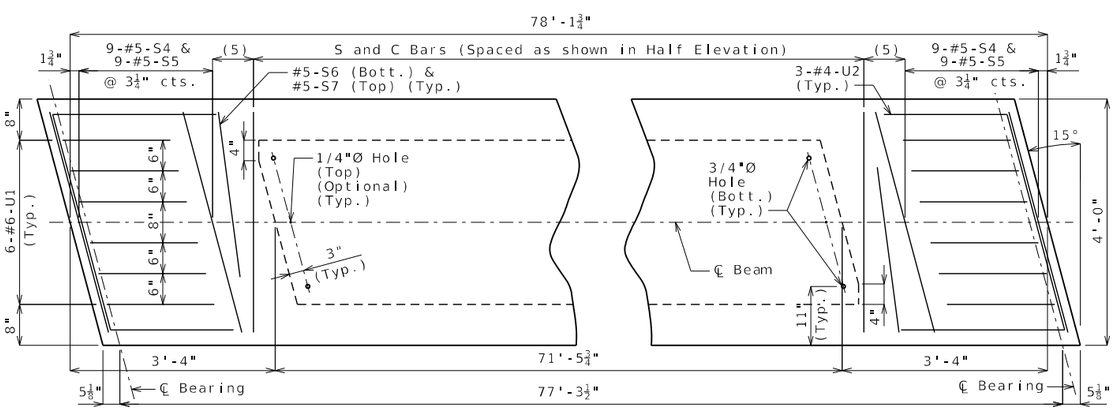
Dimensions taken along ℄ Beam.

(5) 2 Spa. @ 4"

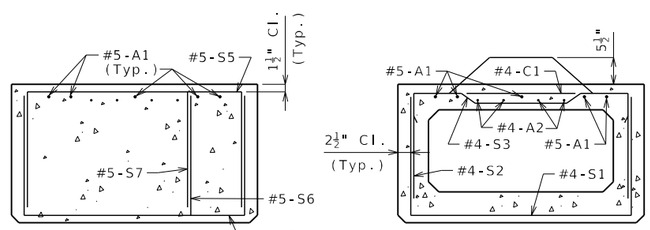


ELEVATION A-A

Strands not shown for clarity.



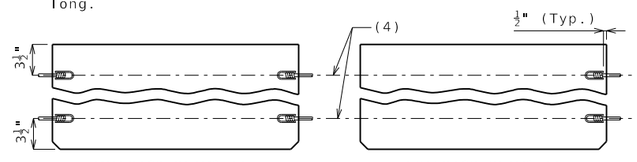
PART PLAN



SECTION B-B

SECTION C-C

(4) ℄ 3/4"Ø (Min.) Coil Tie Rods 2'-4" long.



INTERIOR BEAMS AT INTERMEDIATE BENTS

EXTERIOR BEAMS AT INTERMEDIATE BENTS

COIL TIES

Coil tie inserts shall be staggered a minimum distance so that the coil tie rods of adjacent beams do not conflict.

General Notes:

Concrete for prestressed beams shall be Class A-1 with f'c = 10,000 psi and f'ci = 7,500 psi.

Use 38 strands, 0.6"Ø Grade 270, with an initial prestress force of 1670 kips.

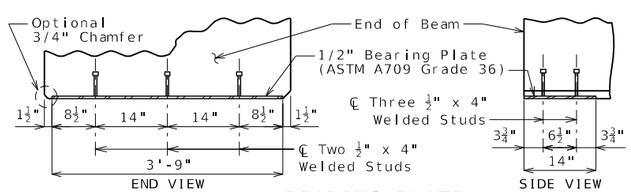
Pretensioned members shall be in accordance with Sec 1029.

Fabricator shall be responsible for location and design of lifting devices.

Exterior and interior beams are the same except: coil ties.

For Beam Camber Diagram, see Sheet No. 28.

For location of coil ties at concrete bent diaphragms, see Sheet No. 27.



BEARING PLATE

Detailed DEC 2024
Checked JAN 2025

SPREAD BOX BEAMS - SPAN (5-6)

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025

ROUTE	STATE
I-670	MO
DISTRICT	SHEET NO.
BR	24

COUNTY JACKSON

JOB NO. JKU0024

CONTRACT ID.

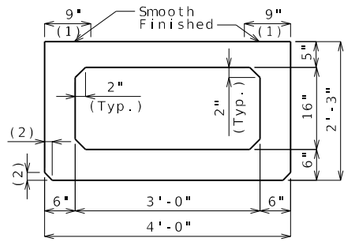
PROJECT NO.

BRIDGE NO. A9599

DESCRIPTION	DATE

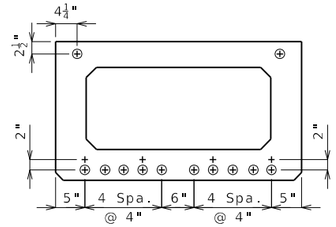
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



DIMENSIONS

(1) Fabricator shall apply a bond breaker to this region.

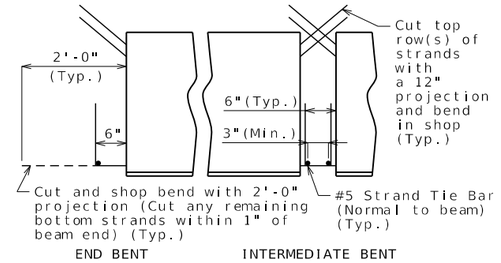


STRAND ARRANGEMENT

All strands are fully bonded unless otherwise noted.

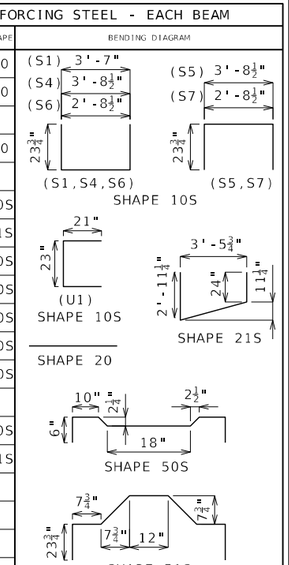
+ Indicates prestressing strand.

○ Indicates cut and shop bend with projection as noted in detial.



STRANDS AT BEAM ENDS

BILL OF REINFORCING STEEL - EACH BEAM				
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAM
5	5 A1	40'-10"	20	
4	4 A2	40'-10"	20	
12	4 C1	3'-7"	20	
44	4 S1	7'-5"	10S	
44	4 S2	7'-10"	51S	
44	4 S3	4'-6"	50S	
18	5 S4	7'-6"	10S	
18	5 S5	7'-6"	10S	
2	5 S6	6'-6"	10S	
2	5 S7	6'-6"	10S	
12	6 U1	5'-1"	10S	
6	4 U2	8'-4"	21S	



All dimensions are out to out. Use symmetry for dimensions not shown.

Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures, Stirrup and Tie Dimensions.

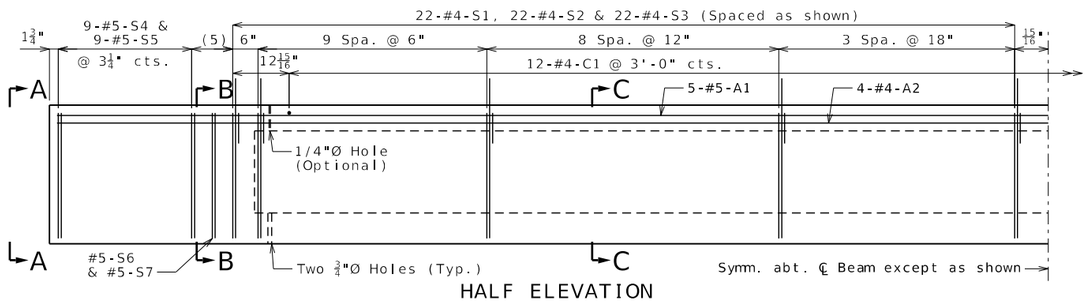
Actual lengths are measured along centerline of bar to the nearest inch.

Minimum clearance to reinforcing shall be one inch, unless otherwise shown.

All reinforcement shall be Grade 60.

All S2 bars shall be epoxy coated.

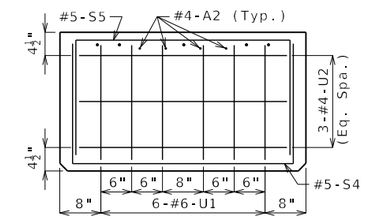
(2) 1½" (Typ.) (¾" Optional)



HALF ELEVATION

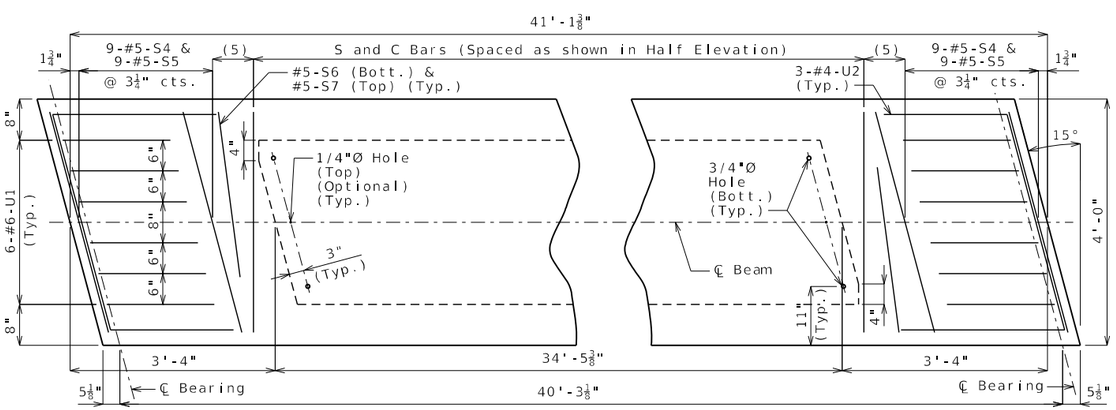
Dimensions taken along ℄ Beam.

(5) 2 Spa. @ 4"

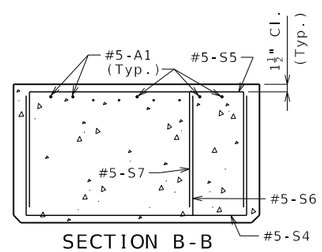


ELEVATION A-A

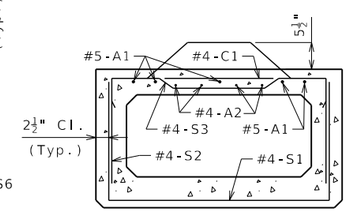
Strands not shown for clarity.



PART PLAN



SECTION B-B



SECTION C-C

General Notes:

Concrete for prestressed beams shall be Class A-1 with f'c = 10,000 psi and f'ci = 7,500 psi.

Use 16 strands, 0.6"Ø Grade 270, with an initial prestress force of 703 kips.

Pretensioned members shall be in accordance with Sec 1029.

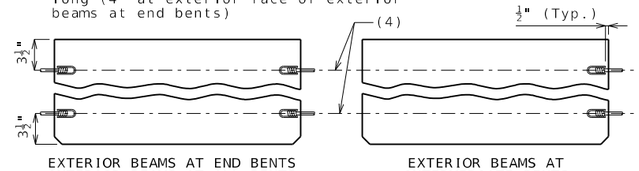
Fabricator shall be responsible for location and design of lifting devices.

Exterior and interior beams are the same except: coil ties.

For Beam Camber Diagram, see Sheet No. 28.

For location of coil ties at concrete bent diaphragms, see Sheets No. 16 and 27.

(4) ℄ 3/4"Ø (Min.) Coil Tie Rods 2'-4" long (4" at exterior face of exterior beams at end bents)

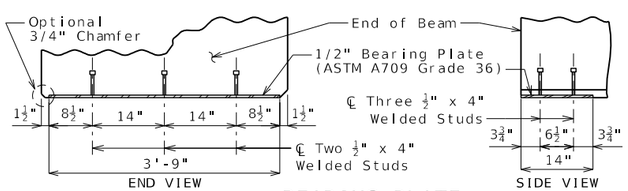


EXTERIOR BEAMS AT END BENTS
INTERIOR BEAMS AT ALL BENTS

EXTERIOR BEAMS AT INTERMEDIATE BENTS

COIL TIES

Coil tie inserts shall be staggered a minimum distance so that the coil tie rods of adjacent beams do not conflict.



BEARING PLATE

Detailed DEC 2024
Checked JAN 2025

SPREAD BOX BEAMS - SPAN (6-7)

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025

ROUTE	STATE
I-670	MO
DISTRICT	SHEET NO.
BR	25

COUNTY: JACKSON

JOB NO.: JKU0024

CONTRACT ID.

PROJECT NO.

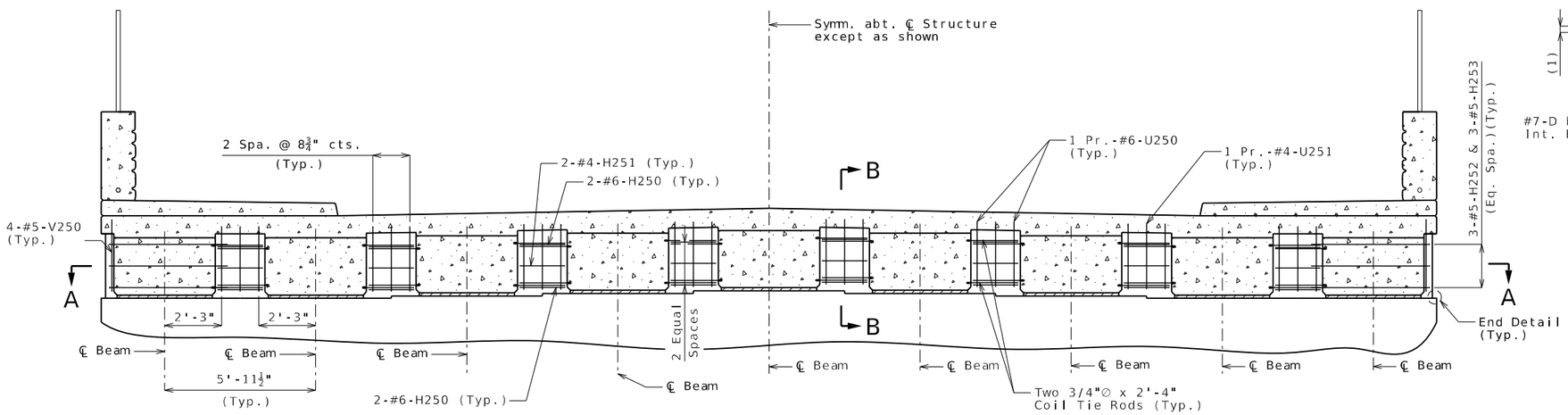
BRIDGE NO.: A9599

DESCRIPTION

DATE

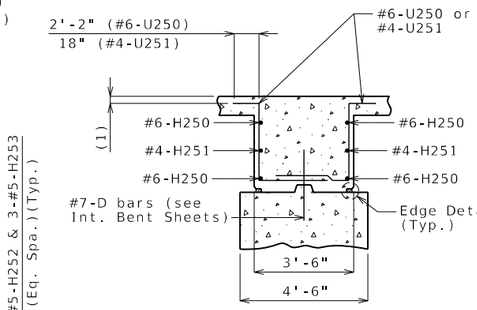
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY NO. 001270

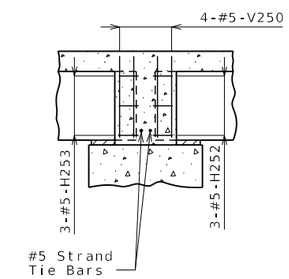


SECTION NEAR INTERMEDIATE BENT

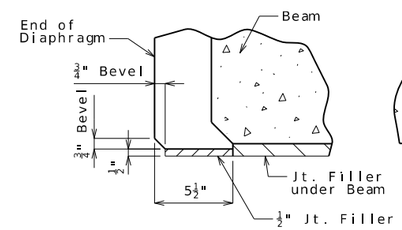
(Normal to ℄ Roadway)



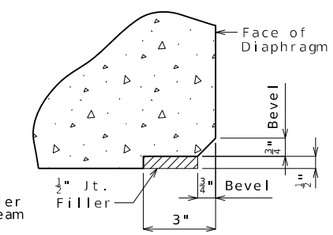
SECTION B-B



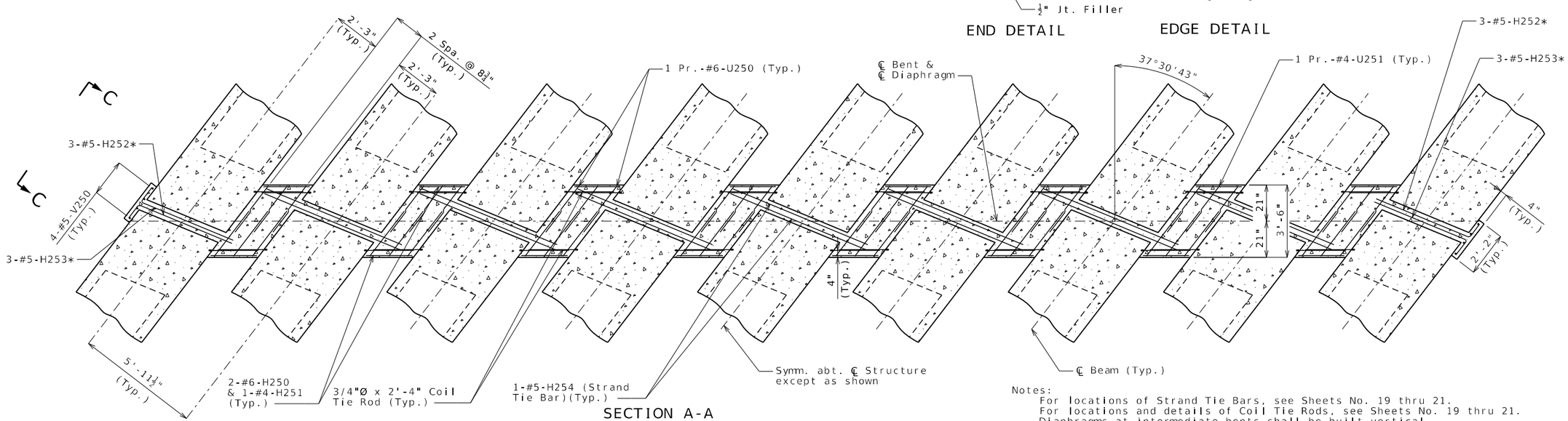
PART ELEVATION C-C



END DETAIL



EDGE DETAIL



SECTION A-A

Notes:
For locations of Strand Tie Bars, see Sheets No. 19 thru 21.
For locations and details of Coil Tie Rods, see Sheets No. 19 thru 21.
Diaphragms at intermediate bents shall be built vertical.
All U-Bars at intermediate diaphragms are to be placed parallel to ℄ Roadway
For location of #7-D dowel bars, see Sheet No. 10.
Bar marks are shown for Intermediate Bent No. 2 using "200" series for barmarks. Intermediate Bent No. 3 is similar, except use "300" series bar marks.
*Bottom bar of set to be used as strand tie bar.

DETAILS OF CONCRETE DIAPHRAGM AT INTERMEDIATE BENTS NO. 2 AND 3

Detailed DEC 2024
Checked JAN 2025

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

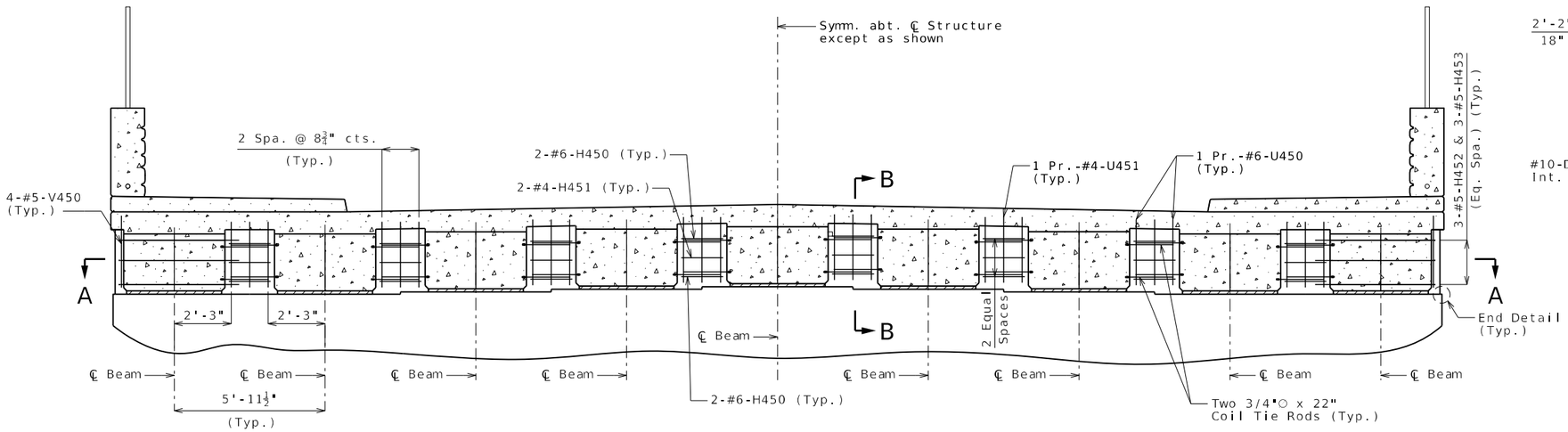
DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	26
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

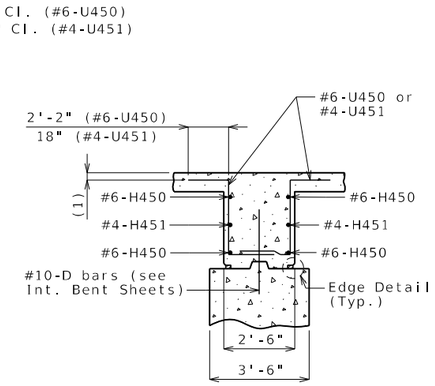
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

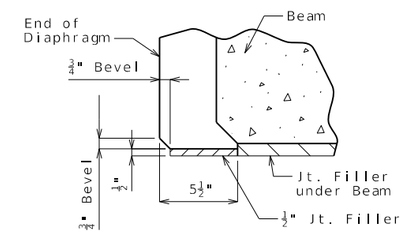


SECTION NEAR INTERMEDIATE BENT

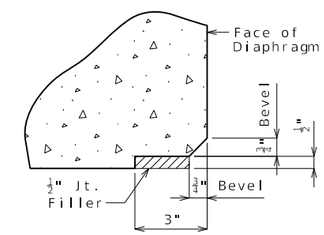
(Normal to ℄ Roadway)



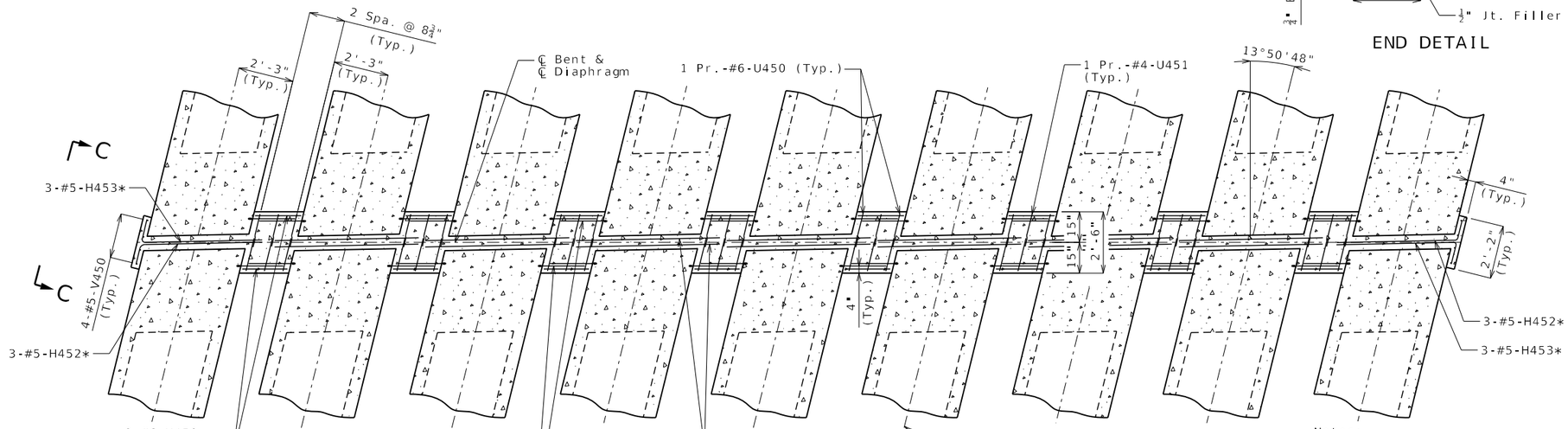
SECTION B-B



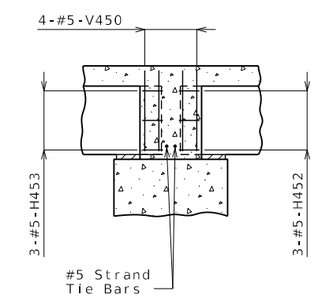
END DETAIL



EDGE DETAIL



SECTION A-A



PART ELEVATION C-C

Notes:

For locations of Strand Tie Bars, see Sheets No. 21 thru 25.

For locations and details of Coil Tie Rods, see Sheets No. 21 thru 25.

Diaphragms at intermediate bents shall be built vertical.

For location of #10-D dowel bars, see Sheet No. 13.

All U-Bars at intermediate diaphragms are to be placed parallel to ℄ Roadway.

Barmarks are shown for Intermediate Bent No. 4 using "400" series for barmarks. Intermediate Bent No. 5 and Intermediate Bent No. 6 are similar, except use "500" and "600" series barmarks, respectively.

*Bottom bar of set to be used as strand tie bar.

DETAILS OF CONCRETE DIAPHRAGM AT INTERMEDIATE BENTS NO. 4, 5 AND 6

Detailed DEC 2024
Checked JAN 2025

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

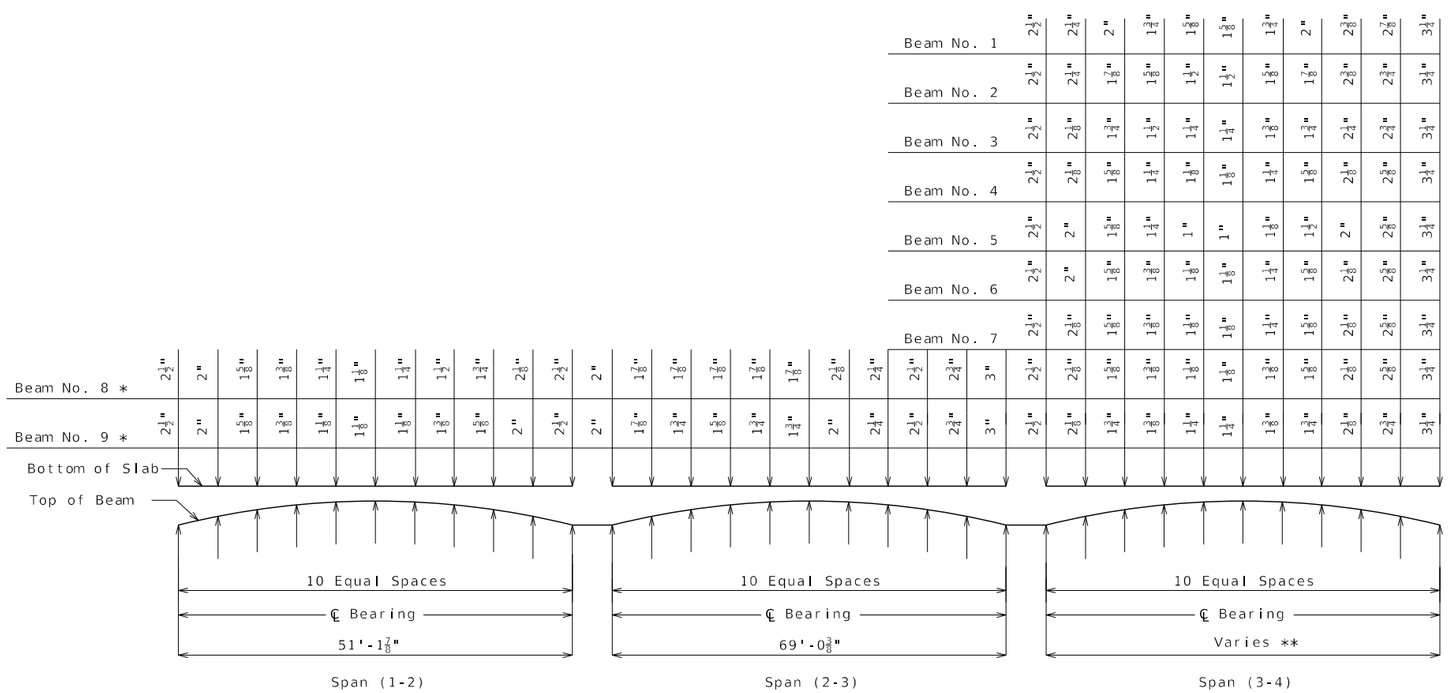
DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	27
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

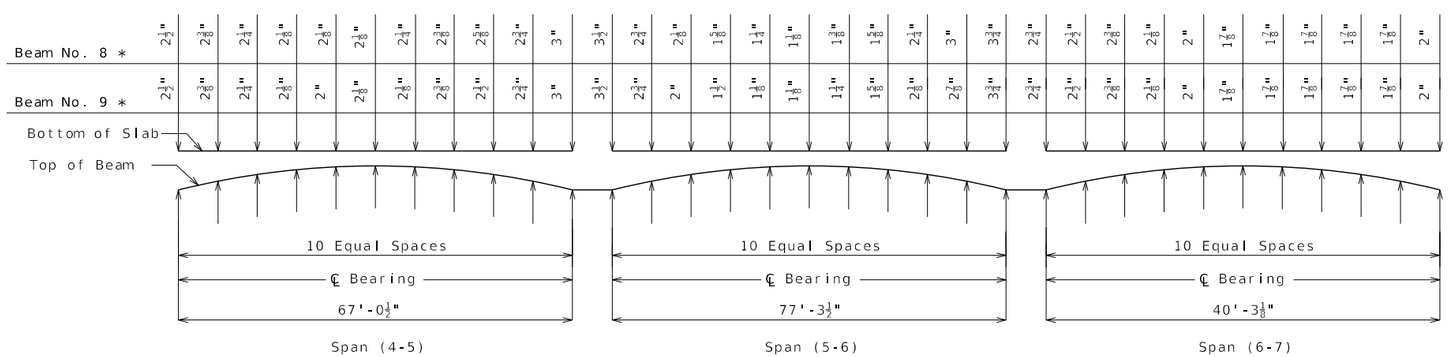
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

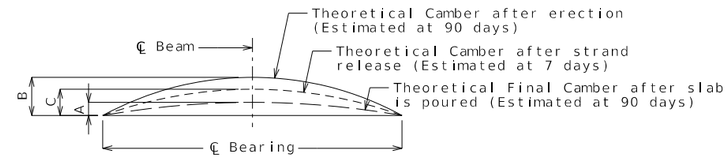


* For all spans except Span (3-4), Beam 8 and 9 values apply to all interior and exterior beams, respectively.

** See Sheets No. 21 & 22 for Span (3-4) lengths.



THEORETICAL SLAB HAUNCHING DIAGRAM



BEAM	Span (1-2)		
	A	B	C
Ext. Beam	3/8"	5/8"	1/2"
Int. Beam	3/8"	5/8"	1/2"
BEAM	**Span (2-3)**		
	A	B	C
Ext. Beam	1 3/4"	2 3/4"	2"
Int. Beam	1 3/4"	2 3/4"	2"
BEAM	**Span (3-4)**		
	A	B	C
1	2 3/4"	4 3/8"	3 1/8"
2	2 7/8"	4 1/4"	3"
3	2 7/8"	4 1/8"	2 5/8"
4	3"	4"	2 3/4"
5	3"	3 7/8"	2 5/8"
6	2 3/4"	3 1/2"	2 1/2"
7	2 5/8"	3 1/4"	2 1/4"
8*	2 1/2"	3"	2 1/8"
9*	2 3/8"	2 3/4"	2"
BEAM	**Span (4-5)**		
	A	B	C
Ext. Beam	1 7/8"	2 3/4"	1 7/8"
Int. Beam	1 3/4"	2 3/4"	1 7/8"
BEAM	**Span (5-6)**		
	A	B	C
Ext. Beam	2 7/8"	4 3/8"	3 1/8"
Int. Beam	2 3/4"	4 3/8"	3 1/8"
BEAM	**Span (6-7)**		
	A	B	C
Ext. Beam	1/2"	5/8"	3/8"
Int. Beam	1/2"	5/8"	3/8"

BEAM CAMBER DIAGRAM

Conversion Factors for Beam Camber (Estimated at 90 days)

0.1 pt. = 0.314 x 0.5 pt.
0.2 pt. = 0.593 x 0.5 pt.
0.3 pt. = 0.813 x 0.5 pt.
0.4 pt. = 0.952 x 0.5 pt.

If beam camber is different from that shown in the camber diagram, in order to maintain minimum slab thickness, an adjustment of the slab haunches, an increase in slab thickness or a raise in grade uniformly throughout the structure shall be necessary. No payment will be made for additional labor or materials required for variation in haunching, slab thickness or grade adjustment.

Concrete in the slab haunches is included in the Estimated Quantities for Slab on Concrete Beam.

THEORETICAL SLAB HAUNCHING DIAGRAM AND BEAM CAMBER DIAGRAM

Detailed DEC 2024
Checked JAN 2025

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
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CERTIFICATE OF AUTHORITY
NO. 001270

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	28
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION
DATE

Theoretical Bottom of Slab Elevations at Centerline of Beam (Prior to forming for slab)(Estimated at 90 days)*

Beam Number	Span (1-2) (51'-1⅞" ℄ Brg. - ℄ Brg.)										
	℄ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	℄ Brg.
1	869.12	868.96	868.81	868.67	868.53	868.40	868.27	868.14	868.02	867.91	867.80
2	868.97	868.82	868.68	868.54	868.41	868.28	868.16	868.04	867.93	867.82	867.71
3	868.91	868.76	868.63	868.50	868.37	868.25	868.14	868.02	867.92	867.81	867.69
4	868.86	868.73	868.60	868.48	868.36	868.24	868.13	868.03	867.92	867.81	867.69
5	868.83	868.70	868.58	868.46	868.35	868.24	868.13	868.03	867.92	867.81	867.70
6	868.61	868.49	868.37	868.26	868.16	868.05	867.95	867.84	867.73	867.62	867.51
7	868.40	868.28	868.17	868.07	867.97	867.87	867.77	867.66	867.55	867.44	867.32
8	868.21	868.10	868.00	867.90	867.80	867.70	867.60	867.49	867.38	867.26	867.14
9	868.10	868.00	867.90	867.80	867.71	867.61	867.50	867.40	867.28	867.17	867.04

Beam Number	Span (2-3) (69'-0⅜" ℄ Brg. - ℄ Brg.)										
	℄ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	℄ Brg.
1	867.77	867.66	867.55	867.43	867.30	867.15	866.99	866.81	866.62	866.41	866.19
2	867.68	867.57	867.46	867.34	867.20	867.05	866.88	866.70	866.50	866.29	866.07
3	867.66	867.56	867.45	867.32	867.18	867.02	866.85	866.66	866.46	866.24	866.01
4	867.66	867.56	867.44	867.31	867.17	867.01	866.83	866.64	866.43	866.21	865.97
5	867.67	867.56	867.44	867.30	867.15	866.99	866.80	866.61	866.39	866.17	865.93
6	867.48	867.37	867.24	867.10	866.95	866.78	866.59	866.39	866.17	865.94	865.69
7	867.29	867.17	867.04	866.90	866.74	866.56	866.37	866.16	865.94	865.71	865.46
8	867.11	866.99	866.85	866.70	866.54	866.36	866.16	865.95	865.73	865.48	865.23
9	867.01	866.88	866.74	866.58	866.41	866.23	866.03	865.81	865.58	865.34	865.08

Beam Number	Span (3-4) (Varies ℄ Brg. - ℄ Brg.)**										
	℄ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	℄ Brg.
1	866.15	865.98	865.79	865.58	865.36	865.11	864.83	864.54	864.22	863.88	863.53
2	866.02	865.85	865.66	865.46	865.23	864.99	864.73	864.44	864.13	863.81	863.48
3	865.97	865.79	865.61	865.40	865.18	864.95	864.69	864.41	864.12	863.82	863.50
4	865.93	865.75	865.56	865.36	865.15	864.92	864.67	864.40	864.13	863.83	863.53
5	865.88	865.71	865.52	865.33	865.11	864.89	864.65	864.40	864.13	863.85	863.56
6	865.65	865.47	865.29	865.10	864.89	864.68	864.45	864.20	863.95	863.69	863.41
7	865.41	865.24	865.06	864.87	864.67	864.46	864.24	864.01	863.77	863.52	863.26
8	865.18	865.01	864.84	864.66	864.46	864.26	864.05	863.83	863.60	863.36	863.12
9	865.03	864.87	864.70	864.52	864.33	864.14	863.94	863.73	863.51	863.29	863.06

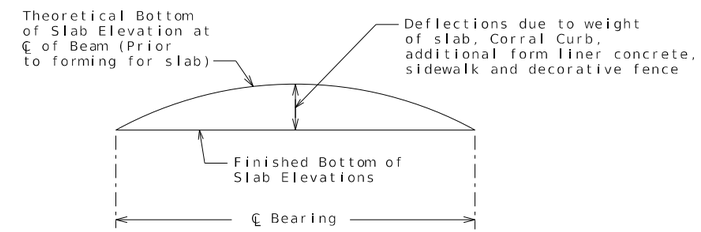
Beam Number	Span (4-5) (67'-0½" ℄ Brg. - ℄ Brg.)										
	℄ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	℄ Brg.
1	863.47	863.23	862.98	862.71	862.44	862.14	861.84	861.51	861.18	860.83	860.47
2	863.41	863.17	862.92	862.66	862.38	862.08	861.77	861.45	861.11	860.76	860.40
3	863.44	863.19	862.94	862.67	862.39	862.10	861.78	861.46	861.12	860.77	860.41
4	863.47	863.22	862.97	862.70	862.42	862.12	861.81	861.48	861.14	860.79	860.42
5	863.50	863.26	863.00	862.73	862.45	862.15	861.83	861.51	861.16	860.81	860.44
6	863.35	863.10	862.84	862.57	862.29	861.99	861.67	861.34	861.00	860.64	860.28
7	863.20	862.95	862.69	862.42	862.13	861.83	861.51	861.18	860.83	860.48	860.11
8	863.06	862.81	862.54	862.27	861.98	861.68	861.36	861.03	860.68	860.32	859.96
9	863.00	862.74	862.48	862.20	861.91	861.61	861.29	860.95	860.61	860.25	859.89

Beam Number	Span (5-6) (77'-3½" ℄ Brg. - ℄ Brg.)										
	℄ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	℄ Brg.
1	860.40	860.06	859.71	859.36	859.00	858.62	858.22	857.82	857.39	856.97	856.53
2	860.32	859.99	859.65	859.29	858.93	858.55	858.16	857.75	857.33	856.90	856.46
3	860.33	859.99	859.65	859.30	858.94	858.56	858.16	857.75	857.33	856.90	856.46
4	860.35	860.01	859.67	859.32	858.96	858.58	858.18	857.77	857.35	856.92	856.48
5	860.37	860.03	859.69	859.34	858.98	858.60	858.20	857.79	857.37	856.94	856.50
6	860.20	859.87	859.52	859.17	858.81	858.43	858.04	857.63	857.21	856.77	856.34
7	860.03	859.70	859.36	859.01	858.64	858.26	857.87	857.46	857.04	856.61	856.17
8	859.88	859.55	859.20	858.85	858.49	858.11	857.72	857.31	856.89	856.45	856.02
9	859.81	859.47	859.13	858.77	858.41	858.03	857.64	857.23	856.81	856.38	855.94

Beam Number	Span (6-7) (40'-3⅛" ℄ Brg. - ℄ Brg.)										
	℄ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	℄ Brg.
1	856.45	856.26	856.06	855.86	855.66	855.46	855.26	855.05	854.85	854.65	854.44
2	856.38	856.18	855.98	855.79	855.59	855.39	855.18	854.98	854.78	854.57	854.37
3	856.39	856.19	855.99	855.79	855.59	855.39	855.19	854.99	854.78	854.58	854.37
4	856.41	856.21	856.01	855.81	855.61	855.41	855.21	855.01	854.80	854.60	854.39
5	856.43	856.23	856.03	855.83	855.63	855.43	855.23	855.03	854.82	854.62	854.41
6	856.26	856.06	855.86	855.66	855.46	855.26	855.06	854.86	854.66	854.45	854.25
7	856.09	855.89	855.70	855.50	855.30	855.10	854.90	854.69	854.49	854.28	854.08
8	855.94	855.74	855.54	855.35	855.15	854.95	854.74	854.54	854.34	854.13	853.93
9	855.87	855.67	855.47	855.27	855.07	854.87	854.67	854.47	854.26	854.06	853.85

*Elevations are based on a constant slab thickness of 8 1/2" and include allowance for theoretical dead load deflections due to weight of slab (including Corral Curb, additional form liner concrete, sidewalk and decorative fence).

**See Sheets No. 21 & 22 for Span (3-4) lengths.



TYPICAL SLAB ELEVATIONS DIAGRAM

Detailed DEC 2024
Checked JAN 2025

THEORETICAL BOTTOM OF SLAB ELEVATIONS

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025

ROUTE	STATE
I-670	MO
DISTRICT	SHEET NO.
BR	29

COUNTY: JACKSON
JOB NO.: JKU0024
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9599

DATE	DESCRIPTION

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
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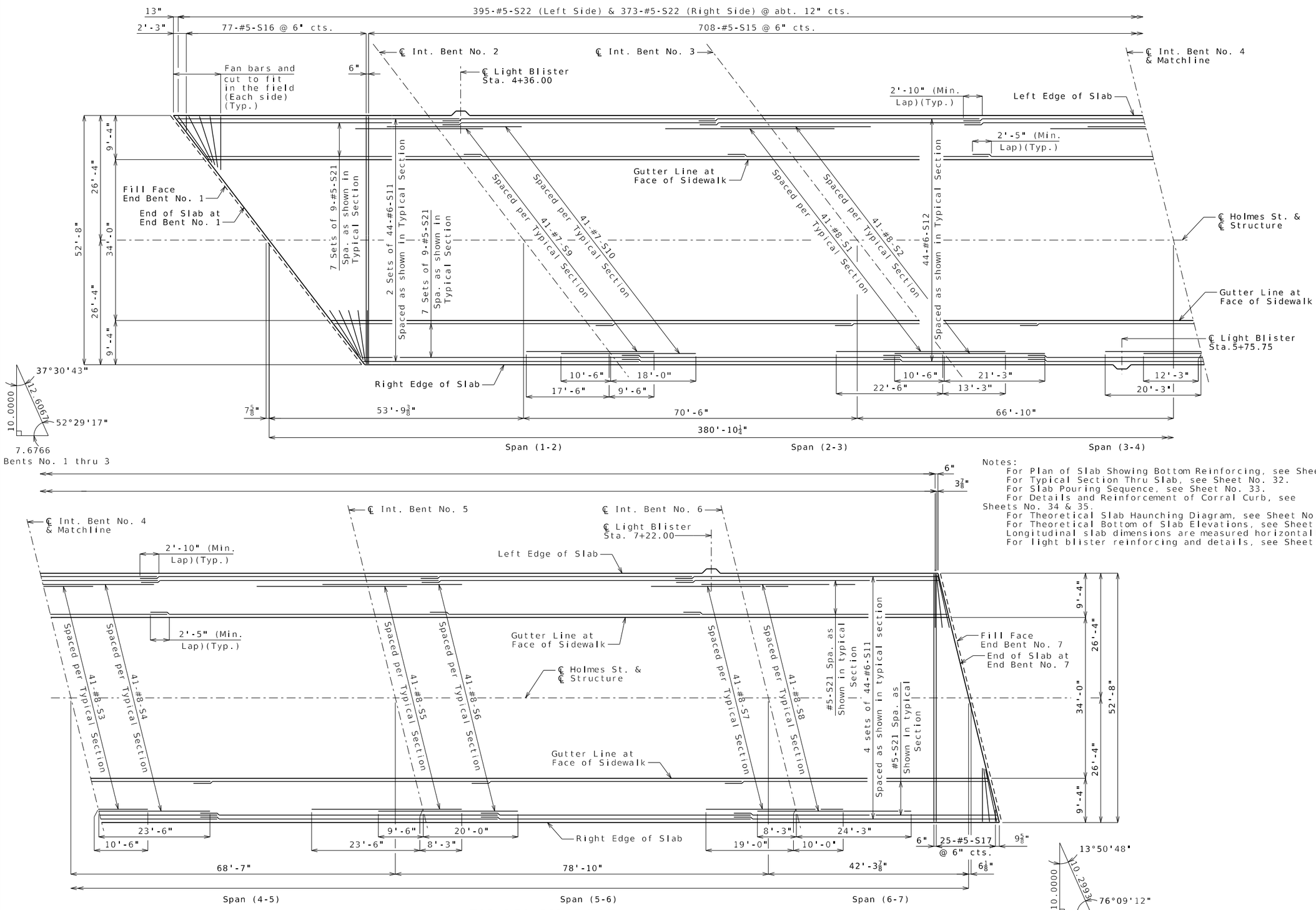

Notes:
For Plan of Slab Showing Bottom Reinforcing, see Sheet No. 31.
For Typical Section Thru Slab, see Sheet No. 32.
For Slab Pouring Sequence, see Sheet No. 33.
For Details and Reinforcement of Corral Curb, see Sheets No. 34 & 35.
For Theoretical Slab Haunching Diagram, see Sheet No. 28
For Theoretical Bottom of Slab Elevations, see Sheet No. 29.
Longitudinal slab dimensions are measured horizontally.
For light blister reinforcing and details, see Sheet No. 37.

TOP REINFORCEMENT

PLAN OF SLAB SHOWING TOP REINFORCEMENT

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

Sheet No. 30 of 51

Detailed DEC 2024
Checked FEB 2025

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	30
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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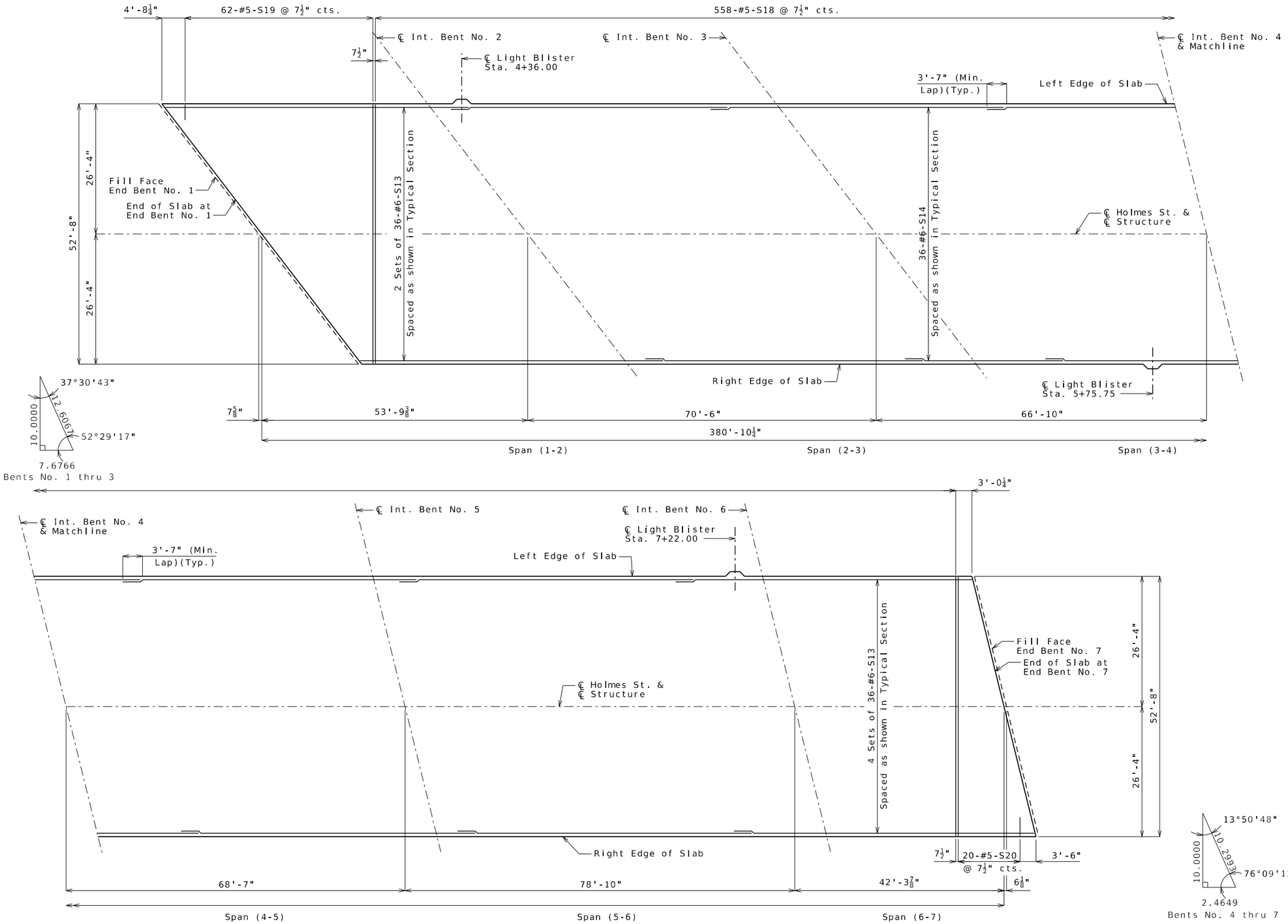

BOTTOM REINFORCEMENT

PLAN OF SLAB SHOWING BOTTOM REINFORCEMENT

Note:
Work this sheet with Sheet No. 30.

Detailed DEC 2024
Checked FEB 2025

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DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	31
COUNTY	JACKSON
JOB NO.	JKU0024
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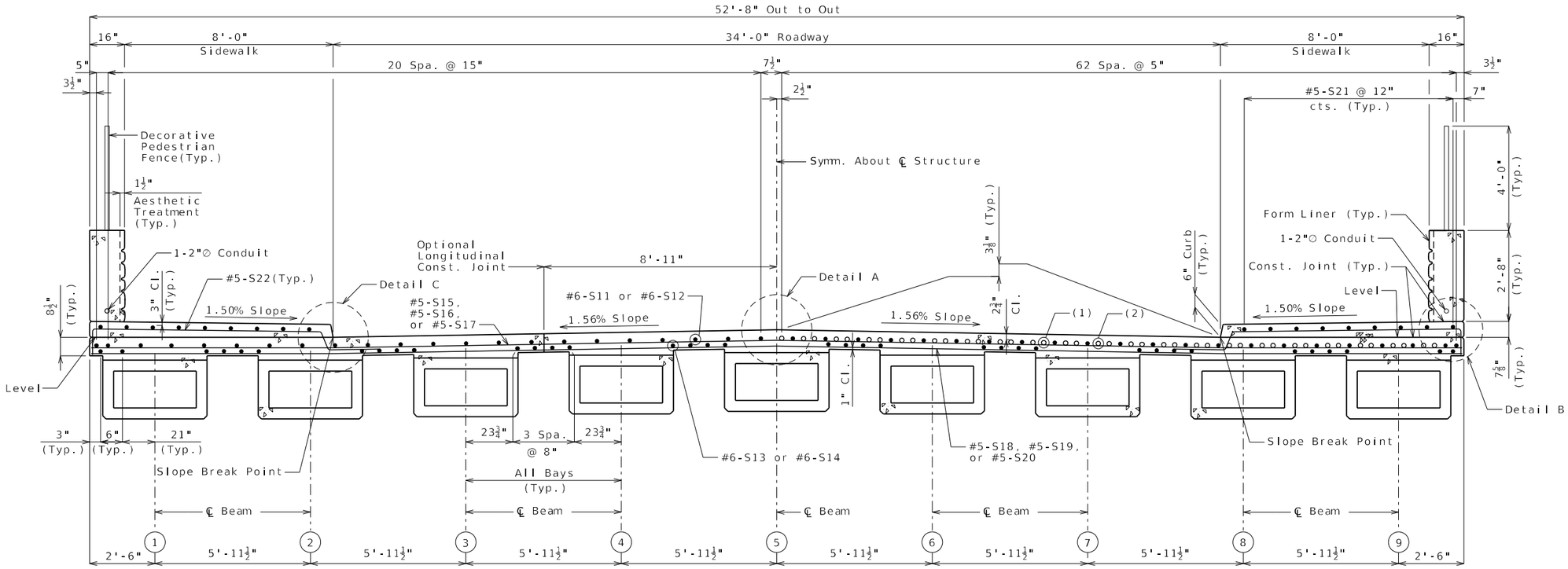
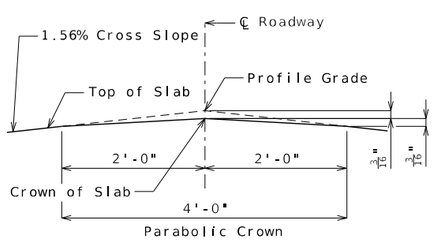


HALF SECTION NEAR MIDSPAN

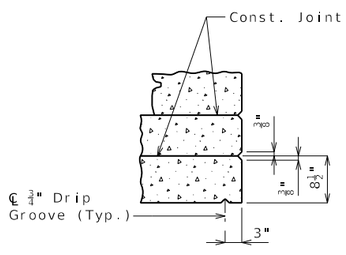
HALF SECTION NEAR INTERMEDIATE BENT

SECTION THRU SLAB

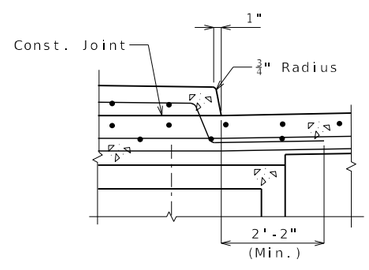
(1) #8-S1, #8-S3, #8-S5, #8-S7, or #7-S9
(2) #8-S2, #8-S4, #8-S6, #8-S8, or #7-S10



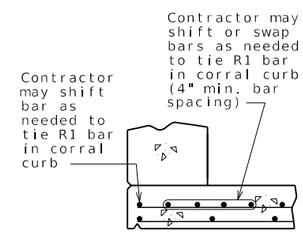
DETAIL A



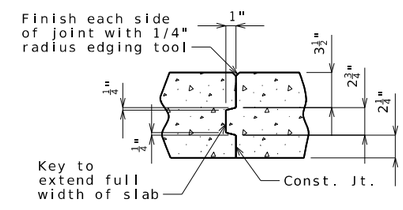
DETAIL B



DETAIL C



OPTIONAL SHIFTING TOP BARS AT CORRAL CURB



SLAB CONSTRUCTION JOINT

Notes:
For Plan of Slab showing Top and Bottom Reinforcement, see Sheets No. 30 and 31.
For Corral Curb conduit details, see Sheet No. 39.
For additional notes, Slab Pouring Sequence and Optional Stay-In-Place Corrugated Steel Forms details, see Sheet No. 33.
For Decorative Pedestrian Fence Details, see Sheet No. 40.
For Form Liner details not shown, see Sheet No. 38.

SLAB DETAILS

Detailed DEC 2024
Checked FEB 2025

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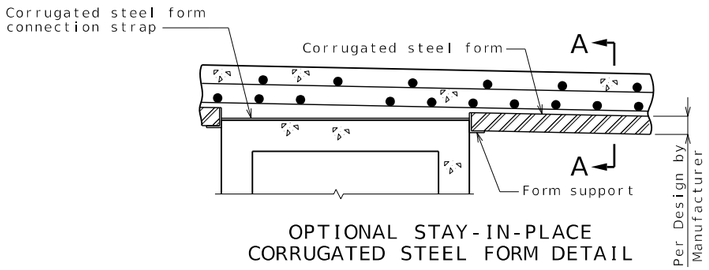
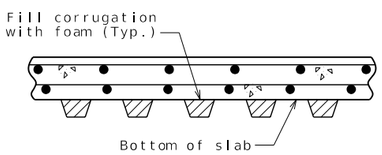
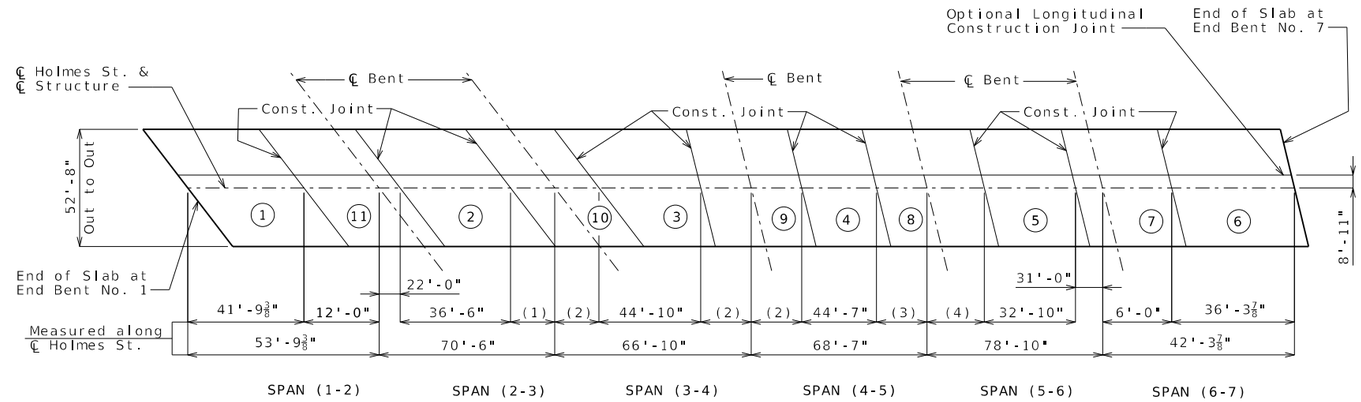


OPTIONAL STAY-IN-PLACE
CORRUGATED STEEL FORM DETAIL



SECTION A-A



(1) 12'-0"
(2) 11'-0"
(3) 13'-0"
(4) 15'-0"

	Sequence of Pours											Min. Rate of Pour Cu. Yds./Hr.
	Direction											With Retarder
Basic Sequence	6	7	5	8	4	9	3	10	2	11	1	25*
	End to 7	6 to 5	7 to 8	5 to 4	8 to 9	4 to 3	9 to 10	3 to 2	10 to 11	2 to 1	11 to End	
Alternate pours to the basic skip sequence are subject to the approval of the engineer in accordance with Sec 703.												
Alternate A Pours	6	7 + 5		8 + 4		9 + 3		10 + 2		11 + 1		33
	End to 7	6 to 8		5 to 9		4 to 10		3 to 11		2 to End		
Alternate B Pours	6 + 7 + 5		8 + 4 + 9			3 + 10			2 + 11 + 1			33
	End to 8		5 to 3			9 to 2			10 to End			
Alternate C Pours	6 + 7 + 5 + 8 + 4					9 + 3 + 10 + 2 +11 + 1						33
	End to 9					4 to End						
Alternate D Pours	6 + 7 + 5 + 8 + 4 + 9 + 3 + 10 + 2 + 11 + 1											33
	End to End (Upgrade)											

The contractor shall furnish an approved retarder to retard the set of the concrete to 2.5 hours, and shall pour and satisfactorily finish the slab pours at the rate given.

The contractor shall pour slab up grade from end to end at a minimum rate of 25 cubic yards per hour.

The concrete diaphragm at the intermediate bents and integral end bents shall be poured a minimum of 30 minutes and a maximum of 2 hours before the slab is poured.

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

* A minimum finishing rate of 20 LF/HR shall be maintained, otherwise the optional longitudinal construction joint shall be required.

SLAB POURING SEQUENCE

Stay-In-Place Corrugated Steel Form Notes:

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.

Note:
For additional slab details, see Sheets No. 30 thru 32.

Detailed DEC 2024
Checked FEB 2025

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

SLAB DETAILS

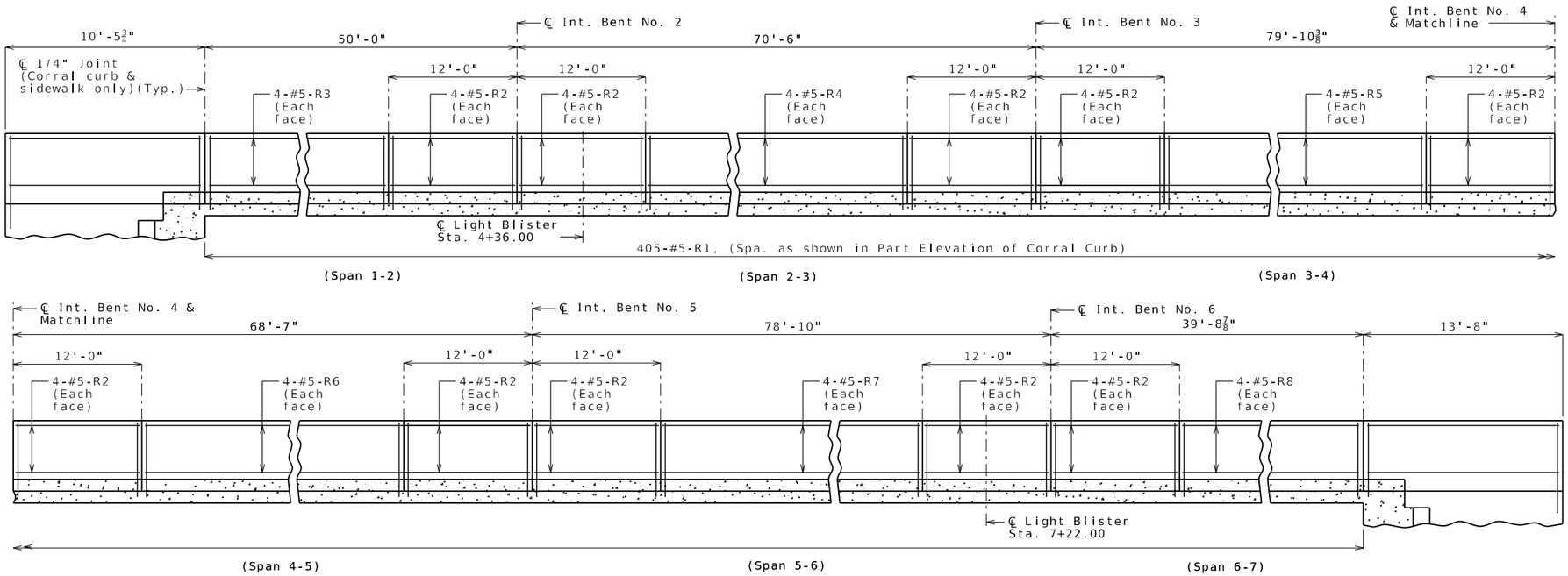
STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025
ROUTE I-670
STATE MO
DISTRICT BR
SHEET NO. 33
COUNTY JACKSON
JOB NO. JKU0024
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9599

DESCRIPTION
DATE

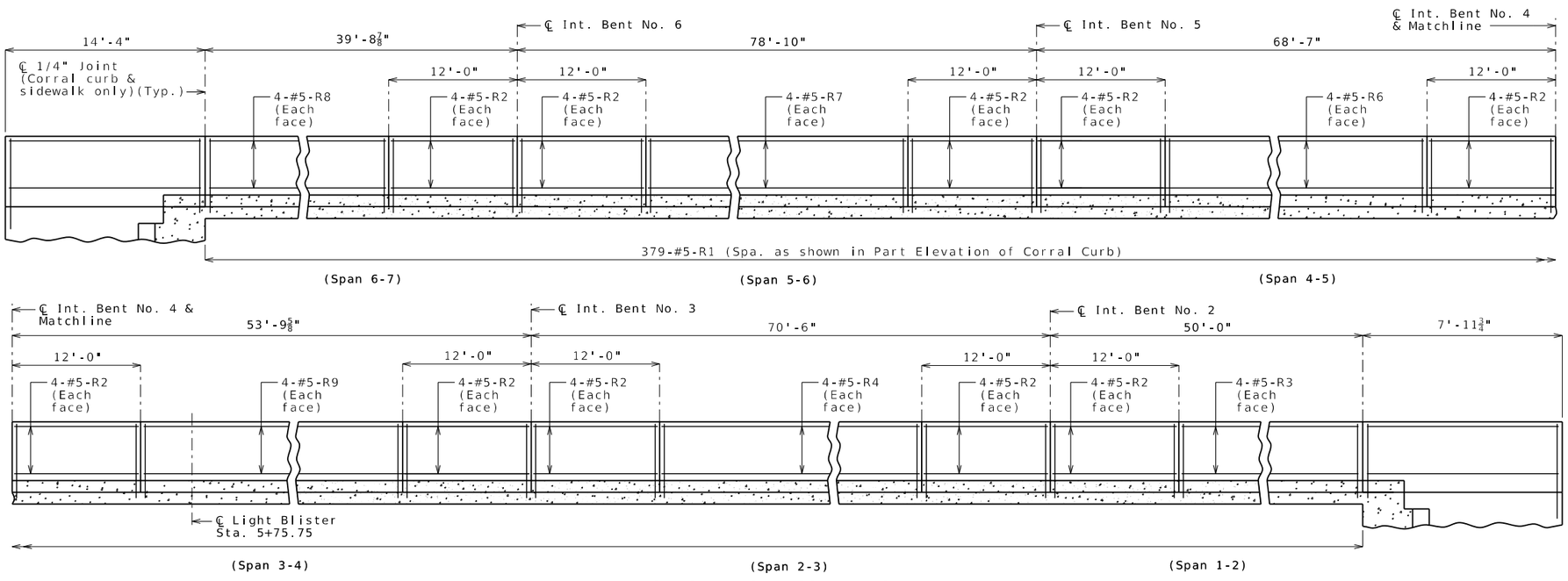
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



ELEVATION OF LEFT CORRAL CURB

Longitudinal dimensions are horizontal.



ELEVATION OF RIGHT CORRAL CURB

Longitudinal dimensions are horizontal.

General Notes:

Conventional forming shall be used. Saw cut joints may be used.

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

All exposed edges of Corral Curb 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 Corral Curb per linear foot.

Concrete in Corral Curb shall be Class B-1.

Measurement of Corral Curb 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 Corral Curb delineators shall be placed on top of the Corral Curb 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 Corral Curb delineators will be considered completely covered by the contract unit price for Corral Curb.

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

Plastic waterstop shall not be used with saw cut joints.

For Details and Reinforcement of Light Blister, see Sheet No. 37.

For conduit details, see Sheet No. 39.

For Form Liner details not shown, see Sheet No. 38.

Notes:
For corral curb additional details, see Sheet No. 35.

DETAILS OF CORRAL CURB

Detailed DEC 2024
Checked FEB 2025

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

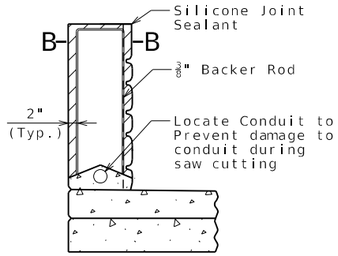
STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025
ROUTE I-670 | STATE MO
DISTRICT BR | SHEET NO. 34
COUNTY JACKSON
JOB NO. JKU0024
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9599

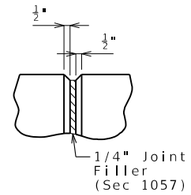
DESCRIPTION | DATE

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

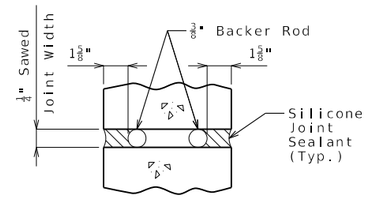
HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



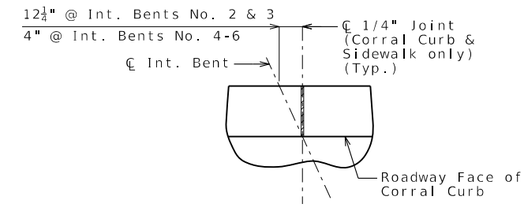
SECTION THRU SAW CUT JOINT



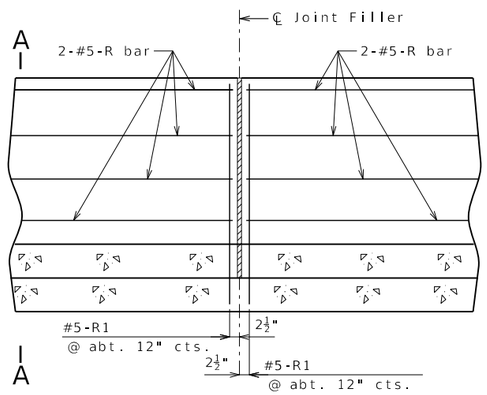
PART ELEVATION AT FORMED JOINT



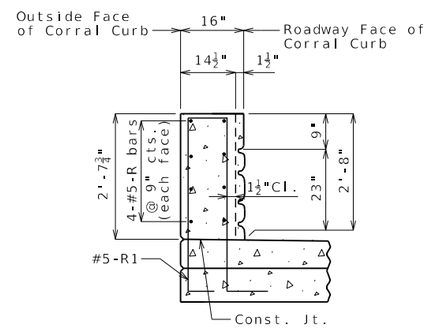
SECTION B-B



PART PLAN SHOWING JOINT LOCATION

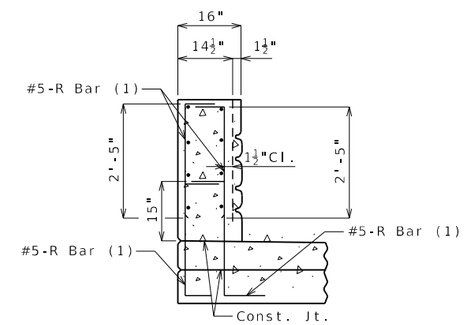


PART ELEVATION OF CORRAL CURB



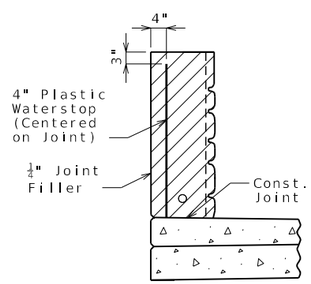
SECTION A-A

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



R-BAR PERMISSIBLE ALTERNATE SHAPE

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



WATERSTOP DETAIL

Plastic waterstop shall be placed in all formed joints, except structures with superelevation, use on lower joints only.

Cost of plastic waterstop, complete in place, will be considered completely covered by the contract unit price for Corral Curb.

Note:
For corral curb elevations, see Sheet No. 34.

DETAILS OF CORRAL CURB

Detailed DEC 2024
Checked FEB 2025

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	35
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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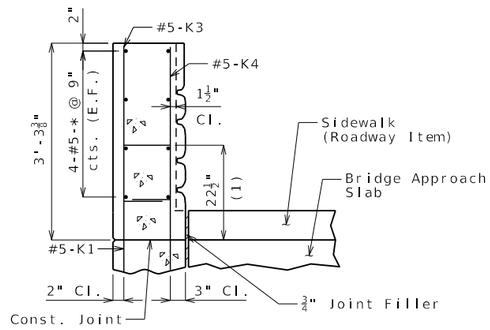
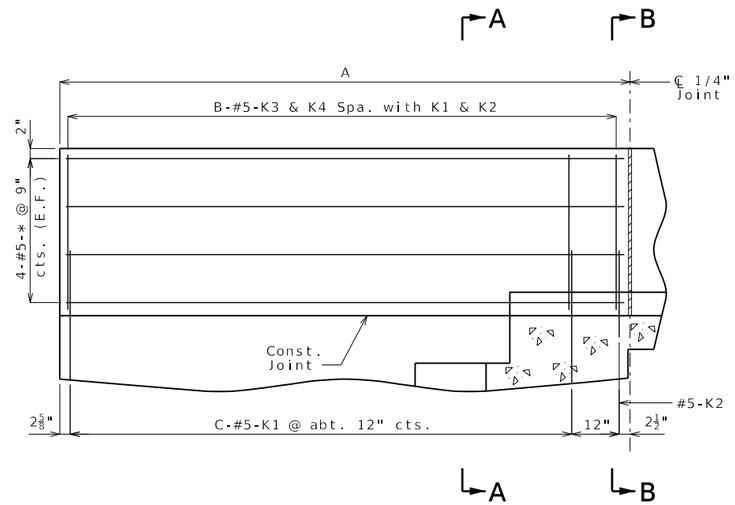
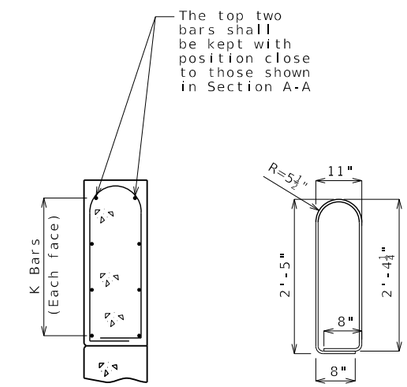
HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



SECTION A-A



PART ELEVATION



K3-K4 BAR PERMISSIBLE ALTERNATE SHAPE

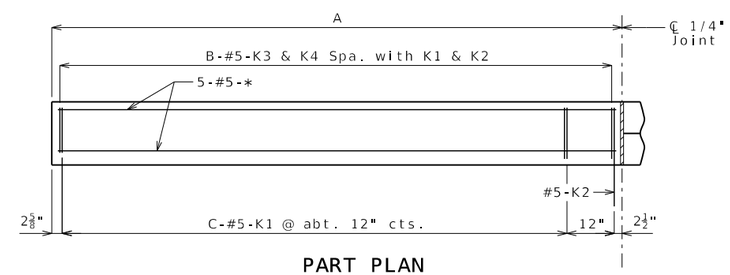
(Other K bars not shown for clarity)

The K3-K4 bar combination may be furnished as one bar as shown, at the contractor's option.

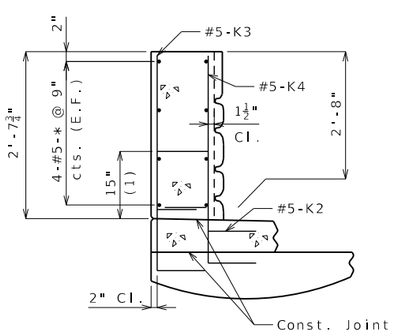
All dimensions are out to out.

TABLE OF VARIABLES			
	A	B	C
End Bent No. 1 Left	10'-5¾"	11	10
End Bent No. 1 Right	7'-11¾"	9	8
End Bent No. 7 Left	13'-8"	15	14
End Bent No. 7 Right	14'-4"	15	14

(1) To top of bar



PART PLAN



SECTION B-B

* K5 at End Bent No. 1 Left
K6 at End Bent No. 1 Right
K7 at End Bent No. 7 Left
K8 at End Bent No. 7 Right

General Notes:

E.F. denotes "each face"
For Form Liner details not shown, see Sheet No. 38.

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

CORRAL CURB AT END BENTS

(End Bent No. 1 left Corral Curb shown, right Corral Curb and End Bent No. 7 similar)

Detailed DEC 2024
Checked JAN 2025

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

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ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	36
COUNTY	JACKSON
JOB NO.	JKU0024
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BRIDGE NO.	A9599

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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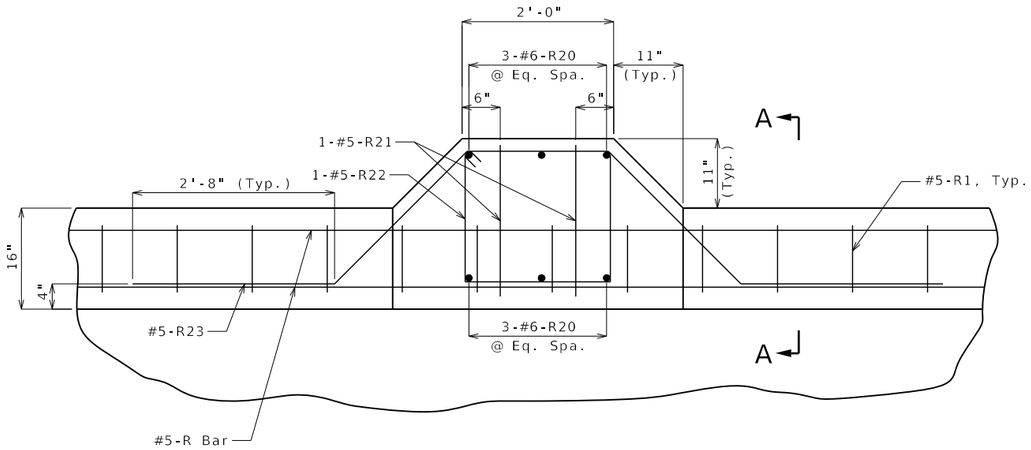
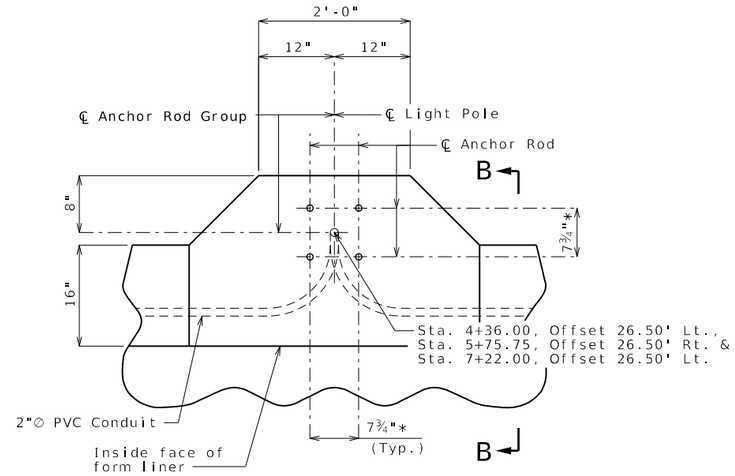
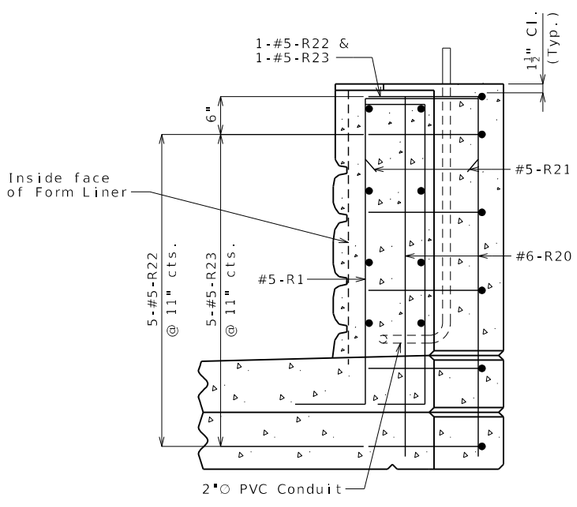
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



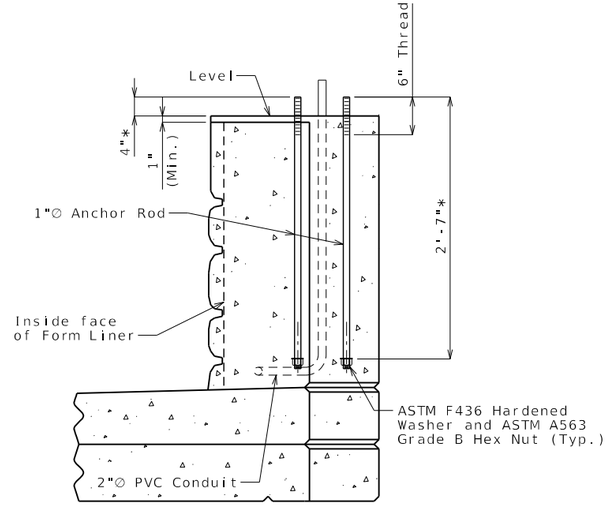
LIGHT POLE MOUNTING PLAN SHOWING REINFORCEMENT



LIGHT POLE MOUNTING PLAN
(Sta. 4+36.00 shown, Sta. 5+75.75 & Sta. 7+22.00 similar)



SECTION A-A



SECTION B-B

Notes:

* Contractor shall confirm dimension with light pole manufacturer before setting anchor bolts.

Anchor bolts and nuts shall be ASTM F1554 Grade 55. Anchor bolts, nuts and washers shall be galvanized in accordance with AASHTO M 232 (ASTM A153), Class C or ASTM B695, Class 55.

Light standards, wiring and fixtures shall be furnished and installed by others.

Top of light standard supports shall be made horizontal; anchor rods shall be placed vertically.

Cost of furnishing and placing anchor bolts for light standard will be considered completely covered by the contract unit price for other items.

For details of light standards, lighting, and wiring, see lighting plans.

For locations of light blister, see Sheet No. 30.

For Form Liner details not shown, see Sheet No. 38.

LIGHT BLISTER DETAILS

Detailed DEC 2024
Checked JAN 2025

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	37
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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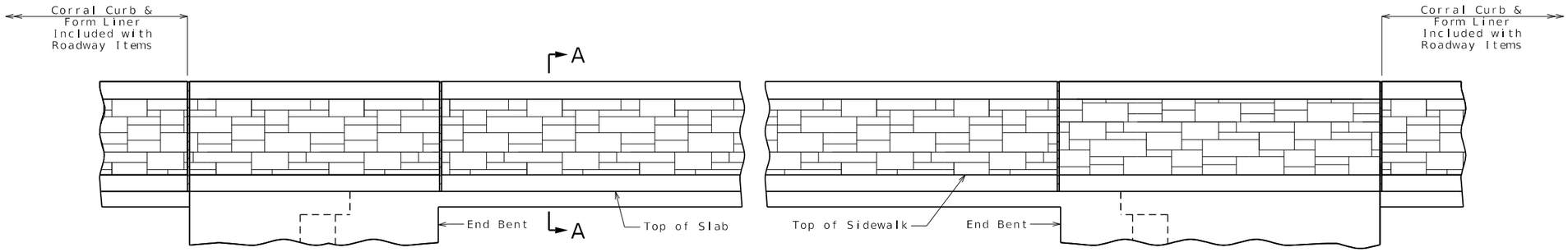
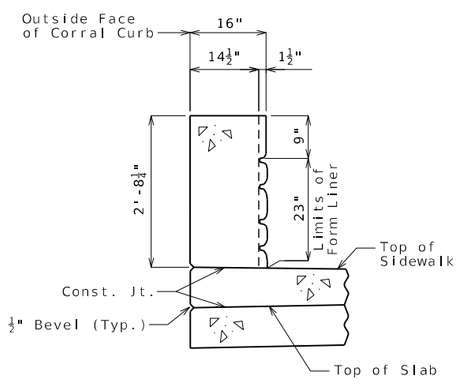
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

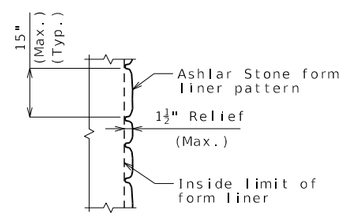


LIMITS OF FORM LINER AT TRAFFIC FACE OF CORRAL CURB

(Form liner pattern for illustrative purposes only)



SECTION A-A



FORM LINER DETAIL

General Notes:

Concrete and masonry protective coating and sacrificial graffiti protective coating shall be applied in accordance with Sec 711 to roadway face of corral curb, bridge wingwall face, and end face of end bent to a minimum of 18" below finished ground line.

Concrete Form Liner Notes:

Form liner shall be constructed in accordance with Special Provisions.

The Contractor shall submit a proposed form liner for this project. Pattern of form liner shall appear natural and non-repeating.

Place form liner such that the predominate orientation of the simulated mortar joints are horizontal and vertical.

The following is a list of form liner manufacturers and types which may be used. Depth of relief for all form liner patterns shall vary up to 1 1/2". The height of any single "stone' shall be 15" maximum.

-Scott System, Inc.: Form liner pattern #167 "Ashlar Stone"

-Fitzgerald Form liners: Form liner pattern #16986 "Ashlar Stone"

-Greenstreak: Form liner pattern #330 "Ashlar Stone

-Spec Form liners: Form liner pattern #1515 "Ashlar Stone"

-Customrock: Form liner pattern #12020 "Tollway Ashlar"

-An approved equal

FORM LINER DETAILS

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

Detailed DEC 2024
Checked JAN 2025

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	38
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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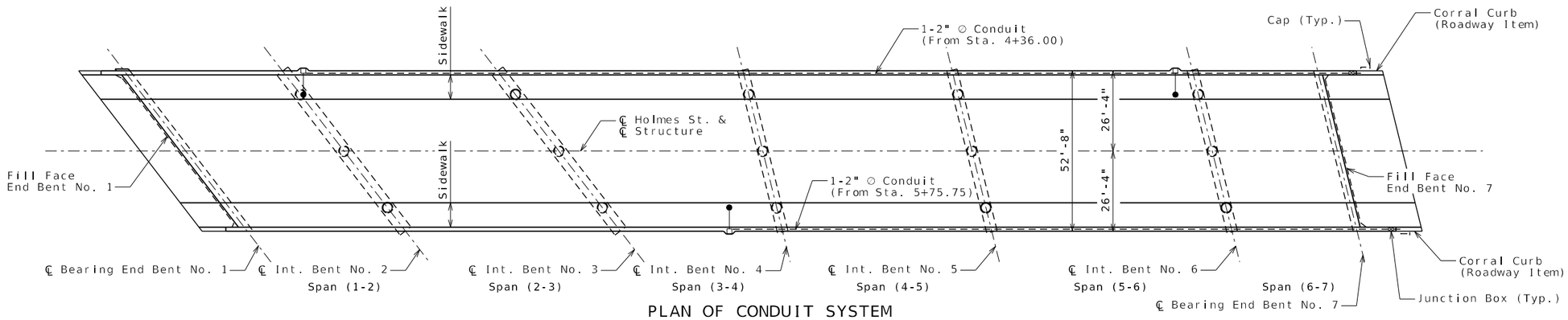
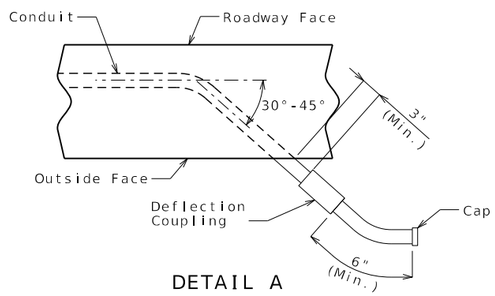
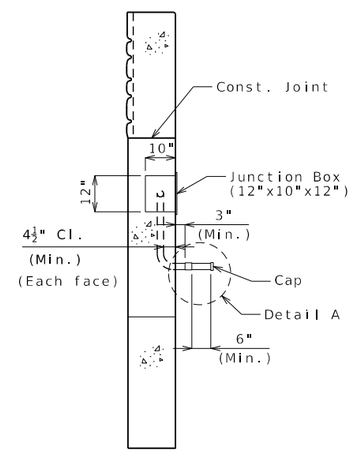
HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



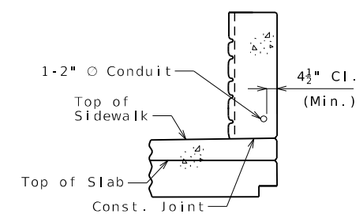
PLAN OF CONDUIT SYSTEM



DETAIL A

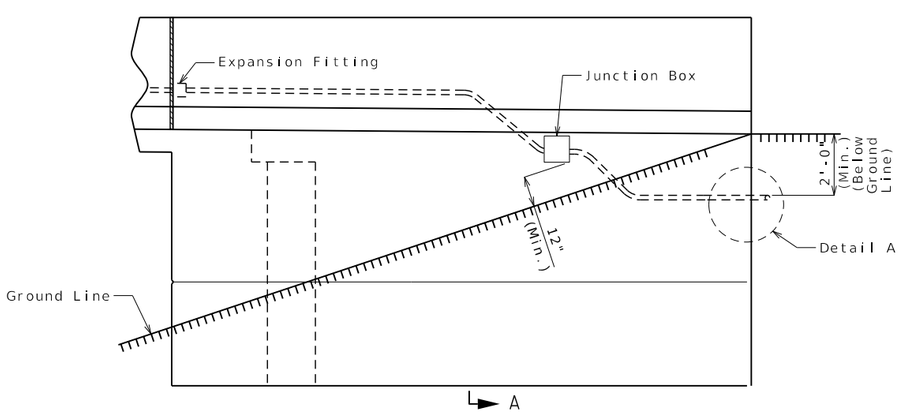


SECTION A-A



SECTION OF CONDUIT
IN CORRAL CURB

A



A

PART WINGWALL ELEVATION
(Exterior face of End Bent No. 7 Right Wingwall shown)

Notes:

All conduit shall be rigid non-metallic schedule 40 heavy wall PVC (polyvinyl chloride plastic) with 4½" minimum cover in concrete. Each section of conduit shall bear the Underwriters Laboratories (UL) label.

Shift reinforcing steel in field where necessary to clear conduit and junction boxes.

Expansion fittings shall be placed as shown and set in accordance with the manufacturer's requirements and based on the air temperature at the time of setting given an estimated total expansion movement of 1 inch at filled joints using a maximum temperature range of 120°F and a maximum temperature of 110°F.

All end bent junction boxes shall be PVC molded in accordance with Sec 1062 and designed for flush mounting. The conduit terminations shall be permanent or separable. The terminations and covers shall be of watertight construction and shall meet requirements for NEMA 4X enclosure.

Drainage shall be provided at low points or other critical locations of all conduits and all junction boxes in accordance with Sec 707. All conduits shall be sloped to drain where possible.

Junction box size shown on plan may require special order. No other size may be substituted.

MoDOT Construction Personnel: Indicate in field and on bridge plans for future work the exact location of buried conduit at ends of bridge that are capped and not immediately used.

Payment for furnishing and installing Conduit System, complete in place, will be considered completely covered by the contract lump sum price for Conduit System on Structure.

For additional conduit details not shown, see Lighting Plans.

DETAILS OF CONDUIT SYSTEM ON STRUCTURE

Detailed DEC 2024
Checked JAN 2025

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	39
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

Notes:

These details are a general representation of a Decorative Pedestrian Fence. The actual fence components and component positions may be different than what is shown.

Fence shall have a gloss black finish (Federal Standard #17038). See special provisions.

Base plate shall be ASTM A709, Grade 50.

All base plates, U bolts, hex nuts and washers shall be galvanized in accordance with ASTM A123 and Sec 1081.

Measurement of pedestrian fence will be made horizontally and to the nearest linear foot along centerline fence.

Payment for furnishing and erecting the fence, complete in place, will be considered completely covered by the contract unit price for (48 in.) Decorative Pedestrian Fence (Structures).

All fence posts shall be vertical.

Mortar shall be placed under the post base plates in accordance with Sec 1066.

Decorative pedestrian fencing shall be in accordance with 2020-AASHTO LRFD Bridge Design Specifications, 9th Ed.

Shop drawings and structural calculations will not be required for the decorative pedestrian fences on the Bridge Pre-qualified Products List.

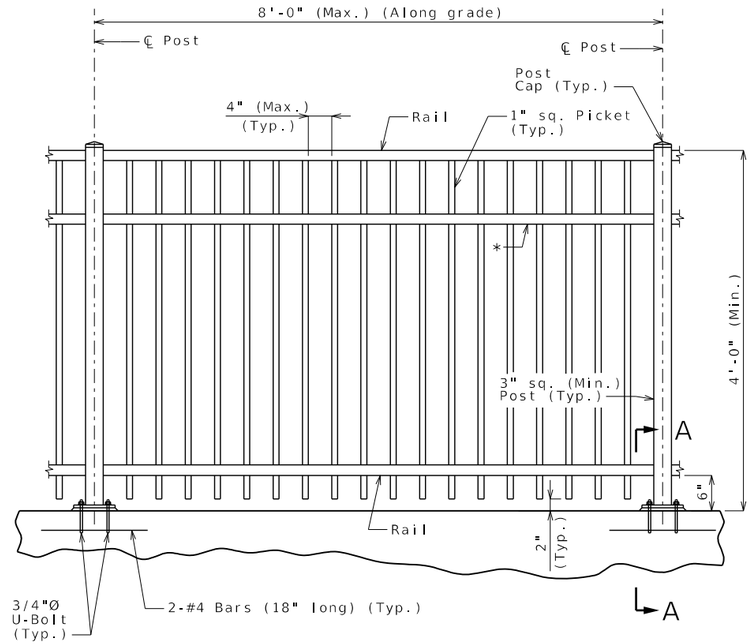
All materials used in fabrication and construction of the decorative pedestrian fencing shall be in accordance with the manufacturer's specifications, except as modified in the contract documents.

Decorative pedestrian fencing system shall be supplied by only one manufacturer. Decorative pedestrian fencing system shall include all components except the anchor bolts and hardware, and #4 bars welded to the anchor bolts. The assembly of the pickets to the rails and the rails to the posts shall be the same as the style mentioned for the manufacturer.

See Bridge Pre-qualified Products List (BPPL) for a list of approved manufacturers.

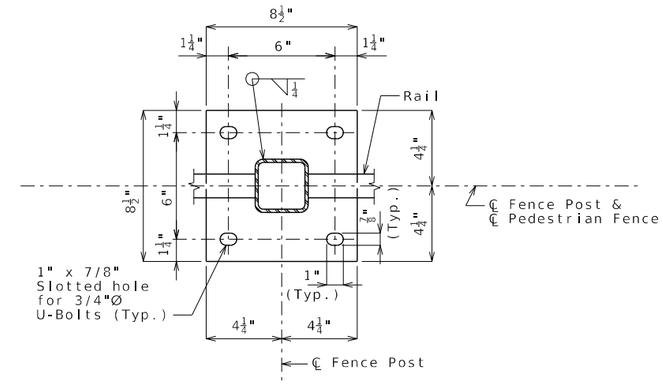
Substitution for the U-bolt cages will not be permitted.

For details of corral curb, see Sheets No. 34 thru 36.

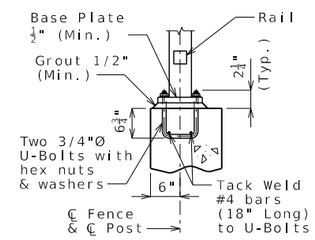


TYPICAL PART ELEVATION

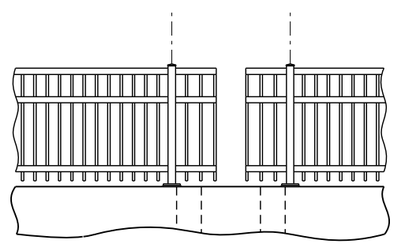
* Optional rail. Need is based on design computations performed by the manufacturer and approved by MoDOT, or may be added for aesthetics.

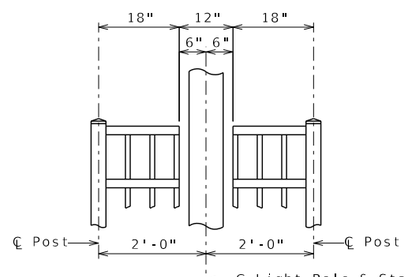


PART PLAN SHOWING BASE PLATE



SECTION A-A





℄ Light Pole & Standard @ Sta. 4+36.00 Lt., Sta. 5+75.75 Rt., & Sta. 7+22.00 Lt.

TYPICAL DETAIL OF FENCE AT LIGHT STANDARDS

DECORATIVE PEDESTRIAN FENCE

Detailed DEC 2024
Checked JAN 2025

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025

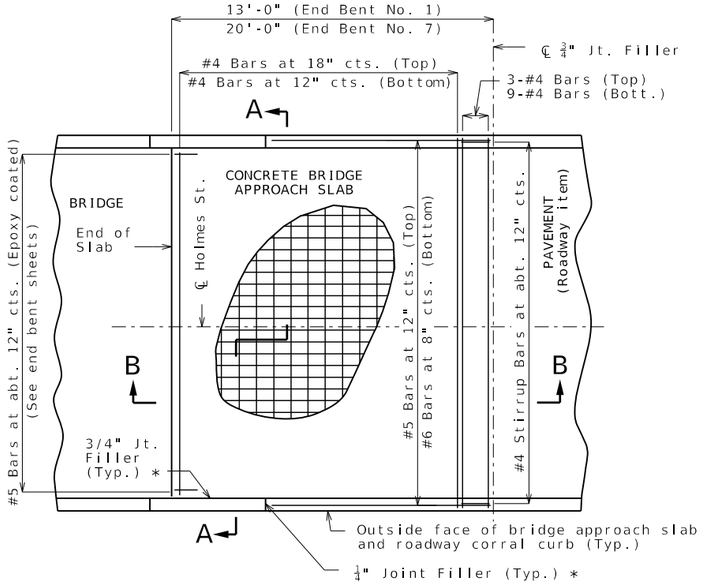
ROUTE	STATE
I-670	MO
DISTRICT	SHEET NO.
BR	40

COUNTY JACKSON
JOB NO. JKU0024
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9599

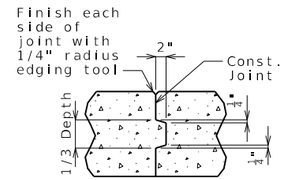
DESCRIPTION
DATE

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

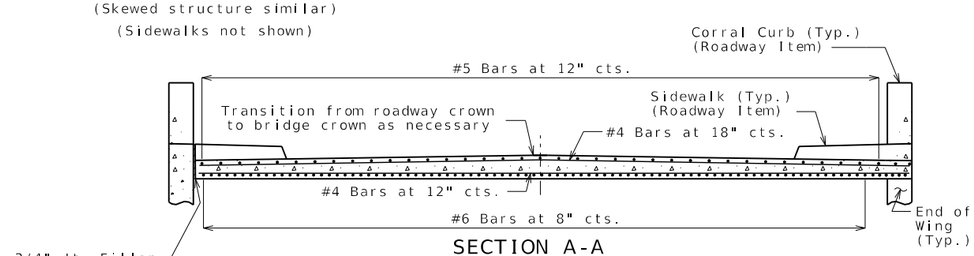
HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



PART PLAN OF SQUARED STRUCTURE
(Skewed structure similar)
(Sidewalks not shown)

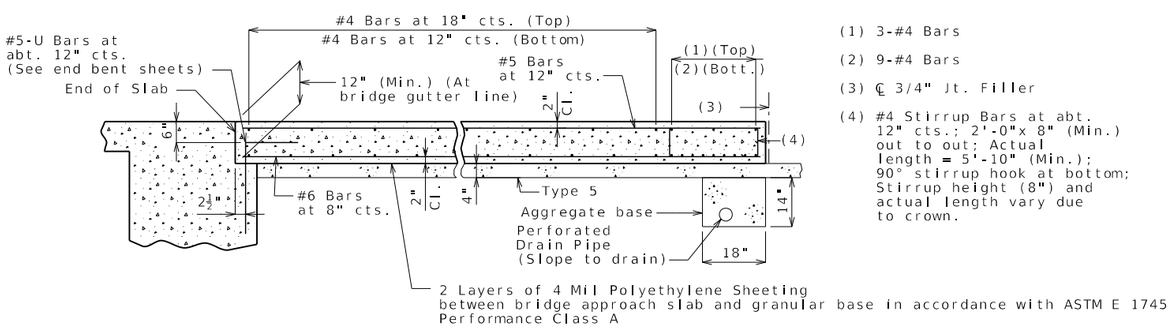


CONSTRUCTION JOINT DETAIL



SECTION A-A

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



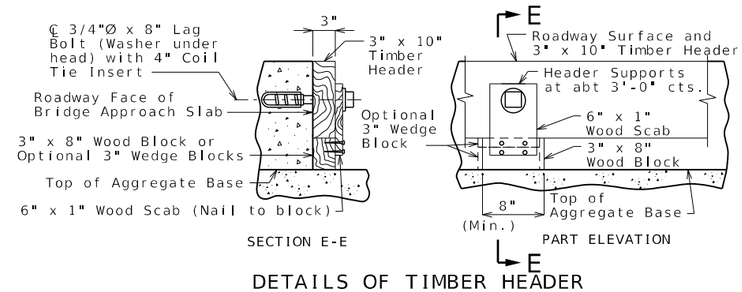
(1) 3-#4 Bars

(2) 9-#4 Bars

(3) ℄ 3/4" Jt. Filler

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

SECTION B-B



SECTION E-E

PART ELEVATION

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

Notes:

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.

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.

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	41
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION	DATE

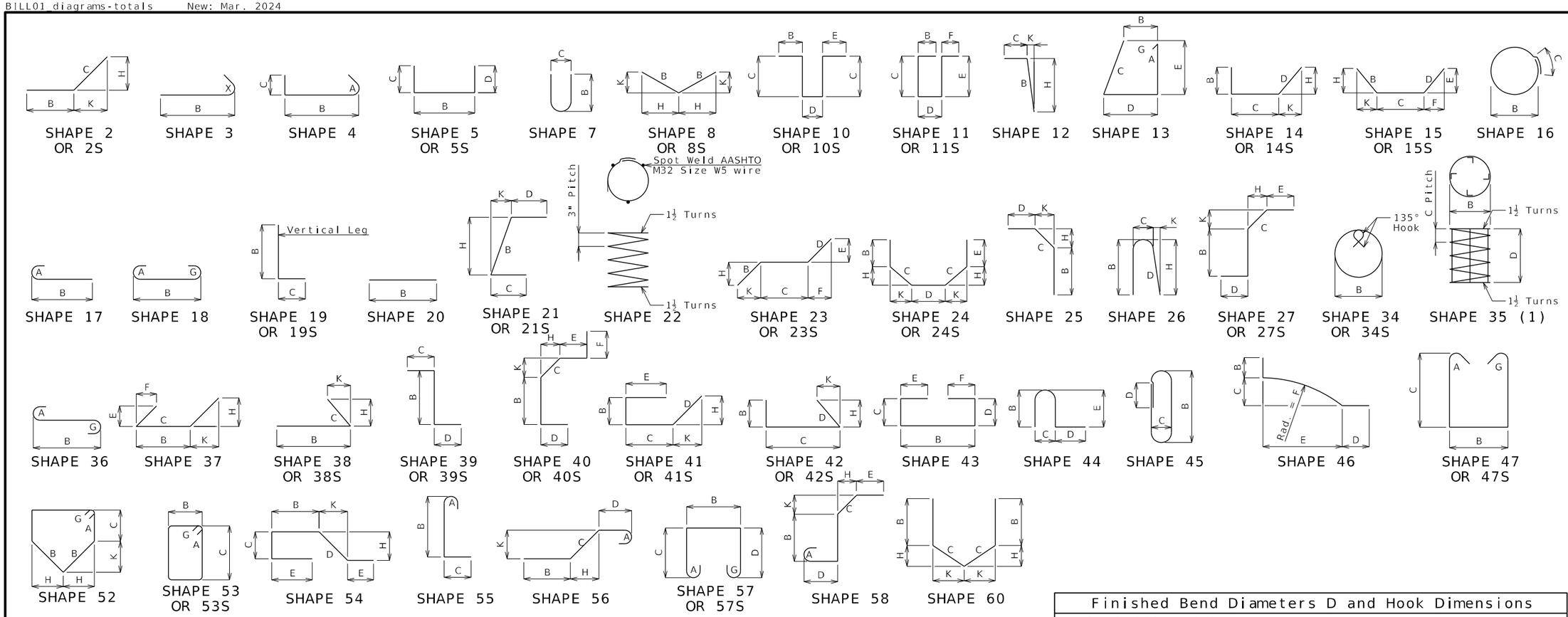
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

BRIDGE APPROACH SLAB (MINOR)

Detailed DEC 2024
Checked JAN 2025

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



(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.

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.

Reinforcing Steel Totals (Pounds)

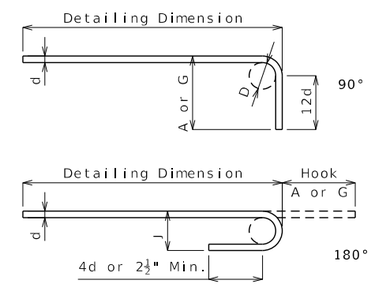
		Substructure		Superstructure				Entire Bridge	
				Slab					
	Size	Plain	Epoxy	Plain	Epoxy	Corral Curb	Side walk	Plain	Epoxy
By Size	W5	0	0	0	0	0	0	0	0
	4	2,084	4,992	0	452	0	0	2,084	5,444
	5	1,408	9,314	0	79,097	14,951	17,764	1,408	121,126
	6	0	1,878	0	59,575	95	0	0	61,548
	7	0	164	0	4,651	0	0	0	4,815
	8	0	0	0	29,048	0	0	0	29,048
	9	0	9,084	0	0	0	0	0	9,084
	10	8,701	17,201	0	0	0	0	8,701	17,201
	11	23,431	10,218	0	0	0	0	23,431	10,218
	14	0	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0	0
By Type		35,624	52,851	0	172,823	15,046	17,764	35,624	258,484

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

Finished Bend Diameters D and Hook Dimensions

Standard Pin Bend Shapes

Size	Case	D	A or G 90°	A or G 180°	J 180°
#4	1	3"	8"	6"	4"
#5	1	3¾"	10"	7"	5"
#6	1	4½"	12"	8¼"	6"
#7	2	5¼"	14"	9¾"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¾"	10"
#9	1	9½"	19½"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¼"	28¼"

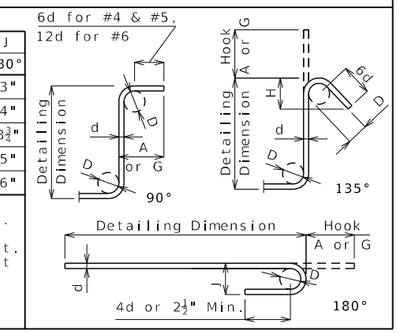


Stirrup Pin Bend Shapes (S)

Size	Case	D	A or G 90°	A or G 135°	A or G 180°	H 135°	J 180°
#4	2	2"	4¼"	4¾"	5"	2⅞"	3"
	3	3"	5"	5¼"	6"	3"	4"
#5	2	2½"	5¾"	5¾"	5¾"	3⅜"	3¾"
	3	3¾"	6¼"	6¾"	7"	3⅞"	5"
#6	1	4½"	12"	7¾"	8¼"	4⅝"	6"

Applicable for all grades of steel.

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



BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

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

Detailed DEC 2024
Checked JAN 2025

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025

ROUTE	STATE
I-670	MO
DISTRICT	SHEET NO.
BR	42

COUNTY: JACKSON
JOB NO.: JKU0024
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9599

DESCRIPTION	DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	Codes SH	Codes V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
		SUBSTRUCTURE													
		INT. BENT NO. 2													
16	7D200	Key	E	20		2'-6"							2'-6"	2'-6"	82
8	10H200	Beam	E	20		41'-9"							41'-9"	41'-9"	1,437
8	10H201	Beam	E	20		31'-4"							31'-4"	31'-4"	1,079
20	10H202	Beam	E	17		36'-7"							38'-0"	38'-0"	3,270
6	6H203	Beam	E	20		19'-9"							19'-9"	19'-9"	178
6	6H204	Beam	E	20		35'-10"							35'-10"	35'-10"	323
20	4H206	Beam	E	20		34'-1"							34'-1"	34'-1"	455
15	4H207	Beam	E	5		4'-1¾"	2'-9"	2'-9"					9'-8"	9'-6"	95
51	4P200	Column	E	16		2'-6"	2'-1"						10'-0"	10'-0"	341
51	5P201	Drilled Shaft		16		2'-6"	2'-1"						10'-0"	10'-0"	532
83	4U200	Beam	E	5S		4'-3"	8"	8"					5'-7"	5'-5"	300
34	5U201	Beam	E	53S		2'-5"	3'-9"						13'-3"	13'-0"	461
34	5U202	Beam	E	53S		2'-5"	4'-0"						13'-9"	13'-6"	479
76	5U203	Beam	E	53S		2'-5"	4'-4"						14'-5"	14'-2"	1,123
4	5U205	Beam	E	5S		4'-3"	3'-9"	3'-9"					11'-9"	11'-6"	48
8	5U206	Beam	E	5S		4'-3"	4'-4"	4'-4"					12'-11"	12'-8"	106
36	10V200	Column	E	20		18'-9"							18'-9"	18'-9"	2,905
36	10V201	Drilled Shaft		20		23'-1"							23'-1"	23'-1"	3,576
		INT. BENT NO. 3													
16	7D300	Key	E	20		2'-6"							2'-6"	2'-6"	82
8	10H300	Beam	E	20		41'-9"							41'-9"	41'-9"	1,437
8	10H301	Beam	E	20		31'-4"							31'-4"	31'-4"	1,079
20	10H302	Beam	E	17		36'-7"							38'-0"	38'-0"	3,270
6	6H303	Beam	E	20		19'-9"							19'-9"	19'-9"	178
6	6H304	Beam	E	20		35'-10"							35'-10"	35'-10"	323
6	6H305	Beam	E	20		5'-8"							5'-8"	5'-8"	51
20	4H306	Beam	E	20		34'-1"							34'-1"	34'-1"	455
15	4H307	Beam	E	5		4'-1¾"	2'-9"	2'-9"					9'-8"	9'-6"	95
42	4P300	Column	E	16		2'-6"	2'-1"						10'-0"	10'-0"	281
84	5P301	Drilled Shaft		16		2'-6"	2'-1"						10'-0"	10'-0"	876
83	4U300	Beam	E	5S		4'-3"	8"	8"					5'-7"	5'-5"	300
34	5U301	Beam	E	53S		2'-5"	3'-9"						13'-3"	13'-0"	461
34	5U302	Beam	E	53S		2'-5"	4'-0"						13'-9"	13'-6"	479
60	5U303	Beam	E	53S		2'-5"	4'-4"						14'-5"	14'-2"	887
16	5U304	Beam	E	53S		2'-5"	4'-10"						15'-5"	15'-2"	253
4	5U305	Beam	E	5S		4'-3"	3'-9"	3'-9"					11'-9"	11'-6"	48
8	5U306	Beam	E	5S		4'-3"	4'-4"	4'-4"					12'-11"	12'-8"	106
36	10V300	Column	E	20		15'-11"							15'-11"	15'-11"	2,466
36	10V301	Drilled Shaft		20		33'-1"							33'-1"	33'-1"	5,125
		INT. BENT NO. 4													
8	10D400	Key	E	20		2'-6"							2'-6"	2'-6"	86
8	9H400	Beam	E	20		54'-5"							54'-5"	54'-5"	1,480
8	9H401	Beam	E	18		54'-5"							56'-11"	56'-11"	1,548
5	6H402	Beam	E	20		36'-7"							36'-7"	36'-7"	275
10	4H403	Beam	E	20		54'-5"							54'-5"	54'-5"	364
15	4H404	Beam	E	5		3'-1¾"	2'-9"	2'-9"					8'-8"	8'-6"	85
57	4P400	Column	E	16		2'-6"	2'-1"						10'-0"	10'-0"	381
72	4P401	Drilled Shaft		16		2'-6"	2'-1"						10'-0"	10'-0"	481
43	4U400	Beam	E	5S		3'-3"	8"	8"					4'-7"	4'-5"	127
30	5U401	Beam	E	53S		2'-3"	3'-9"						12'-11"	12'-8"	396
78	5U402	Beam	E	53S		2'-3"	4'-1"						13'-7"	13'-4"	1,085
8	5U403	Beam	E	5S		3'-3"	4'-3"	4'-3"					11'-9"	11'-6"	96
4	5U404	Beam	E	5S		3'-3"	3'-9"	3'-9"					10'-9"	10'-6"	44
36	11V400	Column	E	20		21'-2"							21'-2"	21'-2"	4,049
36	11V401	Drilled Shaft		20		30'-5"							30'-5"	30'-5"	5,818

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	Codes SH	Codes V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
		INT. BENT NO. 5													
8	10D500	Key	E	20		2'-6"							2'-6"	2'-6"	86
8	9H500	Beam	E	20		54'-5"							54'-5"	54'-5"	1,480
8	9H501	Beam	E	18		54'-5"							56'-11"	56'-11"	1,548
5	6H502	Beam	E	20		36'-7"							36'-7"	36'-7"	275
10	4H503	Beam	E	20		54'-5"							54'-5"	54'-5"	364
15	4H504	Beam	E	5		3'-1¾"	2'-9"	2'-9"					8'-8"	8'-6"	85
48	4P500	Column	E	16		2'-6"	2'-1"						10'-0"	10'-0"	321
105	4P501	Drilled Shaft		16		2'-6"	2'-1"						10'-0"	10'-0"	701
43	4U500	Beam	E	5S		3'-3"	8"	8"					4'-7"	4'-5"	127
30	5U501	Beam	E	53S		2'-3"	3'-9"						12'-11"	12'-8"	396
78	5U502	Beam	E	53S		2'-3"	4'-1"						13'-7"	13'-4"	1,085
8	5U503	Beam	E	5S		3'-3"	4'-3"	4'-3"					11'-9"	11'-6"	96
4	5U504	Beam	E	5S		3'-3"	3'-9"	3'-9"					10'-9"	10'-6"	44
36	11V500	Column	E	20		17'-11"							17'-11"	17'-11"	3,427
36	11V501	Drilled Shaft		20		40'-11"							40'-11"	40'-11"	7,826
		INT. BENT NO. 6													
8	10D600	Key	E	20		2'-6"							2'-6"	2'-6"	86
8	9H600	Beam	E	20		54'-5"							54'-5"	54'-5"	1,480
8	9H601	Beam	E	18		54'-5"							56'-11"	56'-11"	1,548
5	6H602	Beam	E	20		36'-7"							36'-7"	36'-7"	275
10	4H603	Beam	E	20		54'-5"							54'-5"	54'-5"	364
15	4H604	Beam	E	5		3'-1¾"	2'-9"	2'-9"					8'-8"	8'-6"	85
36	4P600	Column	E	16		2'-6"	2'-1"						10'-0"	10'-0"	240
135	4P601	Drilled Shaft		16		2'-6"	2'-1"						10'-0"	10'-0"	902
43	4U600	Beam	E	5S		3'-3"	8"	8"					4'-7"	4'-5"	127
30	5U601	Beam	E	53S		2'-3"	3'-9"						12'-11"	12'-8"	396
78	5U602	Beam	E	53S		2'-3"	4'-1"						13'-7"	13'-4"	1,085
8	5U603	Beam	E	5S		3'-3"	4'-3"	4'-3"					11'-9"	11'-6"	96
4	5U604	Beam	E	5S		3'-3"	3'-9"	3'-9"					10'-9"	10'-6"	44
36	11V600	Column	E	20		14'-4"							14'-4"	14'-4"	2,742
36	11V601	Drilled Shaft		20		51'-2"							51'-2"	51'-2"	9,787
		SUPERSTRUCTURE													
		END BENT NO. 1													
9	6F100	Wingwall	E	15S		15"	7'-2"	2'-0"	10⅝"	21½"	11⅜"	9¾"	10'-5"	10'-5"	141
9	6F101	Wingwall	E	2S		21"	2'-7"				2'-4"	13¾"	4'-4"	4'-4"	59
3	6F102	Wingwall	E	38S		5'-9"	3'-11"				3'-1¼"	2'-4⅝"	9'-8"	9'-8"	44
3	6F103	Wingwall	E	2S		4'-9"	3'-11"				3'-1¼"	2'-4⅝"	8'-8"	8'-8"	39
24	6H100	Beam	E	20		35'-3"							35'-3"	35'-3"	1,271
32	6H101	Diaphragm	E	20		2'-2"							2'-2"	2'-2"	104
8	6H102	Diaphragm	E	20		35'-3"							35'-3"	35'-3"	424
8	6H103	Diaphragm	E	20		35'-3"							35'-3"	35'-3"	424
16	8H104	Wingwall	E	20		8'-8"							8'-8"	8'-8"	370
36	6H105	Wingwall	E	20		8'-8"							8'-8"	8'-8"	469
9	5H106	Strand Tie	E	23		12"	4'-2"	12"	4⅝"	11⅛"	4⅝"	11⅛"	6'-2"	6'-2"	58
13	5U100	Beam	E	47S		3'-11"	5'-3"						15'-4"	15'-2"	206
57	5U101	Beam	E	53S		3'-11"	2'-8"						14'-1"	13'-10"	822
33	5U102	Beam	E	5S		3'-11"	2'-8"	2'-8"					9'-3"	9'-0"	310
19	5U103	Diaphragm	E	47S		2'-8"	2'-8"						8'-11"	8'-9"	173
19	6U104	Diaphragm	E	19S		2'-0"	2'-8"						4'-8"	4'-7"	131
86	6U105	Diaphragm	E	19S		3'-0"	4'-9"						7'-9"	7'-8"	990
50	5U106	Diaphragm	E	19S		2'-0"	15"						3'-3"	3'-2"	165
12	5V100	Beam	E	17		5'-3"							5'-10"	5'-10"	73
63	6V101	Diaphragm	E	20		2'-0"							2'-0"	2'-0"	189
12	6V102	Wingwall	E	20		6'-3"							6'-3"	6'-3"	113
10	6V103	Wingwall	E	20		6'-4"							6'-4"	6'-4"	95

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

For bending diagrams and steel reinforcing totals, see Sheet No. 42.

All bars shall be Grade 60.

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

SH = Required shape, see bending diagrams.

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

Detailed DEC 2024
Checked JAN 2025

BILL OF REINFORCING STEEL

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025

ROUTE	STATE
I-670	MO
DISTRICT	SHEET NO.
BR	43

COUNTY: JACKSON
JOB NO.: JKU0024
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9599

DESCRIPTION | DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	Codes SH	Codes V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
		END BENT NO. 7													
10	6F700	Wingwall	E	15S		15"	6'-0"	22"	13 5/8"	17 1/4"	9"	12"	9'-1"	9'-1"	136
10	6F701	Wingwall	E	23S		18"	3'-4"	18"	14 1/8"	11 1/8"	14 1/8"	11 1/8"	6'-4"	6'-4"	95
3	6F702	Wingwall	E	38S		5'-0"	2'-9"				2'-8"	7 7/8"	7'-9"	7'-9"	35
3	6F703	Wingwall	E	2S		3'-7"	2'-9"				2'-8"	7 7/8"	6'-4"	6'-4"	29
32	6H700	Beam	E	20		28'-9"							28'-9"	28'-9"	1,382
32	6H701	Diaphragm	E	20		21"							21"	21"	84
8	6H702	Diaphragm	E	20		28'-9"							28'-9"	28'-9"	345
8	6H703	Diaphragm	E	20		28'-9"							28'-9"	28'-9"	345
16	8H704	Wingwall	E	20		13'-4"							13'-4"	13'-4"	570
40	6H705	Wingwall	E	20		13'-4"							13'-4"	13'-4"	801
9	5H706	Strand Tie	E	20		6'-2"							6'-2"	6'-2"	58
16	5U700	Beam	E	47S		2'-8"	7'-0"						17'-7"	17'-5"	291
66	5U701	Beam	E	53S		2'-8"	4'-8"						15'-7"	15'-4"	1,056
15	5U702	Beam	E	5S		2'-8"	4'-8"	4'-8"					12'-0"	11'-9"	184
18	5U703	Diaphragm	E	47S		2'-2"	2'-6"						8'-1"	7'-11"	149
18	6U704	Diaphragm	E	19S		2'-0"	2'-8"						4'-8"	4'-7"	124
69	6U705	Diaphragm	E	19S		3'-0"	4'-9"						7'-9"	7'-8"	795
50	5U706	Diaphragm	E	19S		2'-0"	15"						3'-3"	3'-2"	165
4	5V700	Beam	E	17		7'-0"							7'-7"	7'-7"	32
54	6V701	Diaphragm	E	20		21"							21"	21"	142
22	6V702	Wingwall	E	20		7'-3"							7'-3"	7'-3"	240
24	6V703	Wingwall	E	20		7'-2"							7'-2"	7'-2"	258
		INT. DIAPHRAGMS													
32	6H250	Diaphragm	E	20		2'-1"							2'-1"	2'-1"	100
16	4H251	Diaphragm	E	20		2'-1"							2'-1"	2'-1"	22
6	5H252	Diaphragm	E	2		5'-7"	9"				8 3/4"	2 3/8"	6'-4"	6'-4"	40
6	5H253	Diaphragm	E	38		5'-7"	10"				9 3/8"	2 3/8"	6'-5"	6'-5"	40
14	5H254	Diaphragm	E	20		6'-8"							6'-8"	6'-8"	97
32	6U250	Diaphragm	E	39S		2'-11"	2'-2"	2'-9"					7'-10"	7'-7"	364
16	4U251	Diaphragm	E	39S		2'-11"	18"	2'-9"					7'-2"	7'-0"	75
8	5V250	Diaphragm	E	20		2'-11"							2'-11"	2'-11"	24
32	6H350	Diaphragm	E	20		2'-1"							2'-1"	2'-1"	100
16	4H351	Diaphragm	E	20		2'-1"							2'-1"	2'-1"	22
6	5H352	Diaphragm	E	2		5'-7"	9"				8 3/4"	2 3/8"	6'-4"	6'-4"	40
6	5H353	Diaphragm	E	38		5'-7"	10"				9 3/8"	2 3/8"	6'-5"	6'-5"	40
14	5H354	Diaphragm	E	20		6'-8"							6'-8"	6'-8"	97
32	6U350	Diaphragm	E	39S		2'-11"	2'-2"	2'-9"					7'-10"	7'-7"	364
16	4U351	Diaphragm	E	39S		2'-11"	18"	2'-9"					7'-2"	7'-0"	75
8	5V350	Diaphragm	E	20		2'-11"							2'-11"	2'-11"	24
32	6H450	Diaphragm	E	20		21"							21"	21"	84
16	4H451	Diaphragm	E	20		21"							21"	21"	19
6	5H452	Diaphragm	E	2		5'-0"	9"				8 3/4"	2 3/8"	5'-9"	5'-9"	36
6	5H453	Diaphragm	E	38		5'-0"	10"				9 3/8"	2 3/8"	5'-10"	5'-10"	37
14	5H454	Diaphragm	E	20		6'-2"							6'-2"	6'-2"	90
32	6U450	Diaphragm	E	39S		2'-11"	2'-2"	2'-0"					7'-1"	6'-10"	328
16	4U451	Diaphragm	E	39S		2'-11"	18"	2'-0"					6'-5"	6'-3"	67
8	5V450	Diaphragm	E	20		2'-11"							2'-11"	2'-11"	24
32	6H550	Diaphragm	E	20		21"							21"	21"	84
16	4H551	Diaphragm	E	20		21"							21"	21"	19
6	5H552	Diaphragm	E	2		5'-0"	9"				8 3/4"	2 3/8"	5'-9"	5'-9"	36
6	5H553	Diaphragm	E	38		5'-0"	10"				9 3/8"	2 3/8"	5'-10"	5'-10"	37
14	5H554	Diaphragm	E	20		6'-2"							6'-2"	6'-2"	90
32	6U550	Diaphragm	E	39S		2'-11"	2'-2"	2'-0"					7'-1"	6'-10"	328
16	4U551	Diaphragm	E	39S		2'-11"	18"	2'-0"					6'-5"	6'-3"	67
8	5V550	Diaphragm	E	20		2'-11"							2'-11"	2'-11"	24

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	Codes SH	Codes V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
32	6H650	Diaphragm	E	20		21"							21"	21"	84
16	4H651	Diaphragm	E	20		21"							21"	21"	19
6	5H652	Diaphragm	E	2		5'-0"	9"				8 3/4"	2 3/8"	5'-9"	5'-9"	36
6	5H653	Diaphragm	E	38		5'-0"	10"				9 3/8"	2 3/8"	5'-10"	5'-10"	37
14	5H654	Diaphragm	E	20		6'-2"							6'-2"	6'-2"	90
32	6U650	Diaphragm	E	39S		2'-11"	2'-2"	2'-0"					7'-1"	6'-10"	328
16	4U651	Diaphragm	E	39S		2'-11"	18"	2'-0"					6'-5"	6'-3"	67
8	5V650	Diaphragm	E	20		2'-11"							2'-11"	2'-11"	24
		SLAB													
41	8S1	Slab	E	20		35'-9"							35'-9"	35'-9"	3,914
41	8S2	Slab	E	20		31'-9"							31'-9"	31'-9"	3,476
41	8S3	Slab	E	20		30'-9"							30'-9"	30'-9"	3,366
41	8S4	Slab	E	20		35'-9"							35'-9"	35'-9"	3,914
41	8S5	Slab	E	20		31'-9"							31'-9"	31'-9"	3,476
41	8S6	Slab	E	20		29'-6"							29'-6"	29'-6"	3,229
41	8S7	Slab	E	20		29'-0"							29'-0"	29'-0"	3,175
41	8S8	Slab	E	20		32'-6"							32'-6"	32'-6"	3,558
41	7S9	Slab	E	20		27'-0"							27'-0"	27'-0"	2,263
41	7S10	Slab	E	20		28'-6"							28'-6"	28'-6"	2,388
264	6S11	Slab	E	20		60'-0"							60'-0"	60'-0"	23,792
44	6S12	Slab	E	20	2	24'-9"							24'-9"	24'-9"	2,533
		Increment = 15 1/2"				51'-10 1/2"							51'-11"	51'-11"	
216	6S13	Slab	E	20		60'-0"							60'-0"	60'-0"	19,466
36	6S14	Slab	E	20	2	30'-1"							30'-1"	30'-1"	2,316
		Increment = 18"				55'-7"							55'-7"	55'-7"	
708	5S15	Slab	E	20		52'-5"							52'-5"	52'-5"	38,707
77	5S16	Slab	E	20	1	2'-4"							2'-4"	2'-4"	2,158
		Increment = 7 3/4"				51'-5"							51'-5"	51'-5"	
25	5S17	Slab	E	20	1	2'-2"							2'-2"	2'-2"	689
		Increment = 24 1/4"				50'-8"							50'-8"	50'-8"	
558	5S18	Slab	E	20		52'-5"							52'-5"	52'-5"	30,506
62	5S19	Slab	E	20	1	2'-3 1/4"							2'-4"	2'-4"	1,751
		Increment = 9 3/4"				51'-10"							51'-10"	51'-10"	
20	5S20	Slab	E	20	1	3'-8 1/4"							3'-9"	3'-9"	581
		Increment = 30 1/2"				52'-0"							52'-0"	52'-0"	
126	5S21	Sidewalk	E	20		60'-0"							60'-0"	60'-0"	7,885
768	5S22	Sidewalk	E	90S		9'-0"	11"	6 5/8"	2'-3"		6 1/2"	1"	12'-9"	12'-4"	9,879
		CORRAL CURB													
46	5K1	Corral Curb	E	5		11"	3'-8"	3'-8"					8'-3"	8'-0"	384
4	5K2	Corral Curb	E	11		9"	2'-3"	11"	2'-3"	9"			6'-11"	6'-5"	27
50	5K3	Corral Curb	E	19		2'-5"	9"						3'-2"	3'-1"	161
50	5K4	Corral Curb	E	19		2'-5"	9"						3'-2"	3'-1"	161
8	5K5	Corral Curb	E	20		10'-1"							10'-1"	10'-1"	84
8	5K6	Corral Curb	E	20		7'-7"							7'-7"	7'-7"	63
8	5K7	Corral Curb	E	20		13'-4"							13'-4"	13'-4"	111
8	5K8	Corral Curb	E	20		14'-0"							14'-0"	14'-0"	117
784	5R1	Corral Curb	E	11S		9"	3'-6"	11 1/2"	3'-6"	9"			9'-6"	8'-11"	7,291
160	5R2	Corral Curb	E	20		11'-8"							11'-8"	11'-8"	1,947
16	5R3	Corral Curb	E	20		37'-8"							37'-8"	37'-8"	629
16	5R4	Corral Curb	E	20		46'-2"							46'-2"	46'-2"	770
8	5R5	Corral Curb	E	20		55'-6"							55'-6"	55'-6"	463
16	5R6	Corral Curb	E	20		44'-3"							44'-3"	44'-3"	738
16	5R7	Corral Curb	E	20		54'-6"							54'-6"	54'-6"	909
16	5R8	Corral Curb	E	20		27'-5"							27'-5"	27'-5"	458
8	5R9	Corral Curb	E	20		29'-5"							29'-5"	29'-5"	245
18	6R20	Light Blister	E	20		3'-6"							3'-6"	3'-6"	95
6	5R21	Light Blister	E	5S		23"	18"	18"					4'-11"	4'-8"	29
18	5R22	Light Blister	E	53S		23"	20"						8'-1"	7'-10"	147
18	5R23	Light Blister	E	67		2'-8"	2'-5 3/4"	20"			21"	21"	12'-0"	11'-7"	217

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

For bending diagrams and steel reinforcing totals, see Sheet No. 42.

All bars shall be Grade 60.

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

SH = Required shape, see bending diagrams.

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

Detailed DEC 2024
Checked JAN 2025

BILL OF REINFORCING STEEL

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

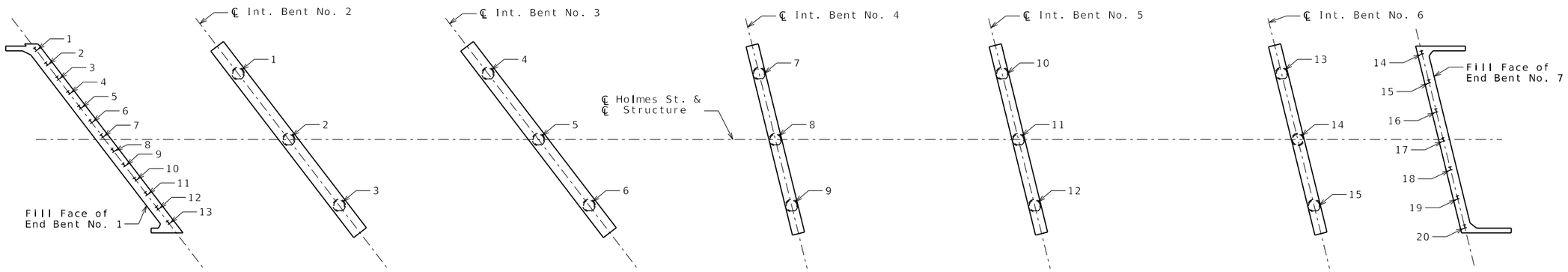
STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025
ROUTE I-670 | STATE MO
DISTRICT BR | SHEET NO. 44
COUNTY JACKSON
JOB NO. JKU0024
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9599

DESCRIPTION | DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270



PART PLAN SHOWING NUMBERING FOR RECORDING AS-BUILT PILE & DRILLED SHAFT DATA

As-Built Pile Data

Pile No.	Length in Place (ft)	PDA Nom. Axial Compressive Resistance (kips)	PDA End of Drive Blow Count (blows/in.)	Actual End of Drive Blow Count (blows/in.)	Remarks
					End Bent No. 1
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
					End Bent No. 7
14					
15					
16					
17					
18					
19					
20					

As-Built Drilled Shaft Data

Shaft No.	Top of Sound Rock (Elev.)	Tip of Casing (Elev.)	Bottom of Rock Socket (Elev.)	Remarks
				Intermediate Bent No. 2
1				
2				
3				
				Intermediate Bent No. 3
4				
2				
6				
				Intermediate Bent No. 4
7				
8				
9				
				Intermediate Bent No. 5
10				
11				
12				
				Intermediate Bent No. 6
13				
14				
15				

Note:

Indicate in remarks column:
A. Pile type ad grade,
B. Batter.
C. Driven to practical refusal.

Note:
This sheet is to be completed by MoDOT construction personnel.

Detailed DEC 2024
Checked JAN 2025

AS-BUILT PILE AND DRILLED SHAFT DATA

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED 04/03/2025
ROUTE I-670 STATE MO
DISTRICT BR SHEET NO. 45
COUNTY JACKSON
JOB NO. JKU0024
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9599

DESCRIPTION	DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

HNTB — LOG OF BORING

BORING NO. B-1
PAGE 1 **OF** 1

PROJECT Holmes Street over I-670 - 84948
LOCATION Kansas City, Missouri
DATE STARTED 05/23/2024 **DATE COMPLETED** 05/24/2024
EXPLORATION CONTRACTOR Palmerton and Parrish, Inc.
DRILLER Eric Porter **DRILL RIG** CME-550X
HAMMER TYPE Auto **HAMMER EFFICIENCY** 1.26
LOGGED BY Zac Boyd **CHECKED BY** AWW

STATION / NORTHING / 1067102.6
OFFSET / EASTING / 2767616.6
SURFACE ELEVATION 868.6 ft
DATUM
GROUND WATER LEVELS:
AT TIME OF DRILLING NATD
AFTER N/A

DRILLING METHOD	DEPTH (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	CORE REC % (RQD %)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	UNCONFINED (tsf/psi)	DRY DENSITY (pcf)	WATER CONTENT (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PASSING #200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION (Unified (Visual) Classification System)	ELEVATION (ft)
	0													ASPHALT - 3 Inches (0.3)	868.6
														CONCRETE - 11 inches (1.1)	
SSA 4.5														Brown, loose, fine to medium, SAND, moist (FILL)	
		SPT J-1	12		2-3-3 (6)							6.4			
	10													(10.0)	860
		SPT J-2	18		2-3-3 (6)	0.5			25.8	42	18			Light to dark brown, firm, oxidized iron, LEAN CLAY, moist (CL)	
														(15.1)	
		ST U-1	24			1		96.9	25.1	54	18			Dark brown, firm, FAT CLAY, moist (CH)	
		SPT J-3	18		3-3-3 (6)	.75									
	20														850
		SPT J-4	18		3-5-7 (12)	2.5			28.7	59	21			20.0' - becomes brown, stiff	
														(23.3)	
														Dark grey , FAT CLAY (CH) (24.5)	
CORE BARREL NQ	24.5	NQ C-1		94% (6%)										INTERBEDDED LIMESTONE AND SHALE, light grey and brown, moderately hard	
														(28.5)	
	28.75													SHALE (29.5)	840
	30	NQ C-2		100% (92%)				9651 psi	159.7	0.8				LIMESTONE, gray, slightly weathered to fresh, hard	
	33.75	NQ C-3		100% (88%)				11704 psi	161.3	0.3					
								43 psi	127.3	8.8				(37.1)	
														SHALE, dark grey, highly weathered, soft	
	38.75														830
	40	NQ C-4		100% (57%)				135 psi	128.1	10.5					
														(43.8)	
	43.75	NQ C-5		100% (28%)										SHALE, dark grey, slightly weathered to weathered, moderately hard	
	48.75	NQ C-6		100% (75%)				180 psi 1844 psi	129.6 136.2	9.4 11.3				(50.1)	820
	50														

Boring backfilled with auger cuttings and bentonite, and the pavement was patched with asphalt cold patch with a spider plug.
Refusal at 24.5 feet.
Bottom of borehole at 50.1 feet.

HNTB — LOG OF BORING

BORING NO. B-2
PAGE 1 **OF** 1

PROJECT Holmes Street over I-670 - 84948
LOCATION Kansas City, Missouri
DATE STARTED 05/23/2024 **DATE COMPLETED** 05/23/2024
EXPLORATION CONTRACTOR Palmerton and Parrish, Inc.
DRILLER Eric Porter **DRILL RIG** CME-550X
HAMMER TYPE Auto **HAMMER EFFICIENCY** 1.26
LOGGED BY Zac Boyd **CHECKED BY** AWW

STATION / NORTHING / 1067130.8
OFFSET / EASTING / 2767650.8
SURFACE ELEVATION 869.7 ft
DATUM
GROUND WATER LEVELS:
AT TIME OF DRILLING NATD
AFTER N/A

DRILLING METHOD	DEPTH (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	CORE REC % (RQD %)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	UNCONFINED (tsf/psi)	DRY DENSITY (pcf)	WATER CONTENT (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PASSING #200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION (Unified (Visual) Classification System)	ELEVATION (ft)
	0													ASPHALT - 2 Inches (0.1)	869.7
														CONCRETE - 10 Inches (1.0)	
SSA 4.5		ST U-1	24			.25	2.302	101.7	23.5	41	19			Brown, firm, some oxidized iron, LEAN CLAY, moist (CL)	
		SPT J-1	18		3-2-3 (5)	.5									
	10														860
		SPT J-2	18		3-3-3 (6)	1								10.0' - change to dark grey with hydrocarbon odor	
		ST U-2	24			1.5		96.2	26.7	41	18			(15.0)	
		SPT J-3	13		2-50/4"	>4.0								LIMESTONE, white to light grey, hard, highly weathered, fine grained (17.1)	
														Dark grey, hard, FAT CLAY, moist, shaley structure (CH)	
CORE BARREL NQ	20	SPT J-4	17		11-15-19 (34)	>4.0			23.6	53	25				850
		SPT J-5	10		50/5"	>4.0								(25.8)	
	25.8	NQ C-1		100% (32%)				2091 psi	141.8	3.3				INTERBEDDED LIMESTONE AND SHALE, tan and grey, fine grained, weathered, soft to moderately hard	
	30	NQ C-2		100% (90%)				2138 psi 7809 psi	151.9 164.2	4.3 0.4				(32.6)	840
	33.9	NQ C-3		100% (92%)				4957 psi	160.5	0.7				LIMESTONE, grey, oxidized iron seams, slightly weathered, moderately hard	
														(38.6)	
	38.9	NQ C-4		100% (75%)				87 psi	125	10.4				SHALE, dark grey, highly weathered, soft	830
														(42.6)	
	43.9	NQ C-5		100% (88%)				585 psi	136.2	7.9				SHALE, dark grey, slightly weathered to weathered, moderately hard to hard 44.3' - becomes slightly weathered to fresh, hard	
	48.9	NQ C-6		100% (94%)				1341 psi	149	2.1				(51.7)	820
	50														

Boring backfilled with auger cuttings and bentonite, and the pavement was patched with asphalt cold patch with a spider plug.
Refusal at 25.8 feet.
Bottom of borehole at 51.7 feet.

STATE OF MISSOURI — VAN WILLIAM ROBBINS — PE-2017015106 — PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	46
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION
DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

BORING LOG W/ LAB DATA COLUMNS - HNTB_OFC001_TEMPLATE.GDT - 1/28/25 12:47 - \\KCOW00\JOBS\84948\DESIGN\GEOTECH\DSTIGN\T84948 - HOLMES ROAD.GPJ

BORING DATA

Note: For locations of borings, see Sheet No. 4.

Detailed DEC 2024
Checked JAN 2025

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

HNTB — LOG OF BORING

BORING NO. B- 3
PAGE 1 **OF** 1

PROJECT Holmes Street over I-670 - 84948
LOCATION Kansas City, Missouri
DATE STARTED 06/03/2024 **DATE COMPLETED** 06/03/2024
EXPLORATION CONTRACTOR Palmerton and Parrish, Inc.
DRILLER Eric Porter **DRILL RIG** CME-550X
HAMMER TYPE Auto **HAMMER EFFICIENCY** 1.26
LOGGED BY Zac Boyd **CHECKED BY** AWW

STATION / NORTHING / 1067033.1
OFFSET / EASTING / 2767575.4
SURFACE ELEVATION 844.5 ft
DATUM
GROUND WATER LEVELS:
AT TIME OF DRILLING NATD
AFTER N/A

DRILLING METHOD	DEPTH (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	CORE REC % (RQD %)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	UNCONFINED (tsf/psi)	DRY DENSITY (pcf)	WATER CONTENT (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PASSING #200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION (Unified (Visual) Classification System)	ELEVATION (ft)
	0														844.5
CORE BARREL NQ														CONCRETE - 12 inches 1.0	
														Light grey, loose, fine gravel, GRAVEL, moist (FILL) 3.6	
	3.6 / 3.9	NQ C-1		100% (0%)			8967 psi	158.9	0.8					LIMESTONE, light grey, hard, oxidized iron	
	5														840
		NQ C-2		100% (98%)			10876 psi	147	0.9					6.9' - 1.5' thick clay seam	
	8.9 / 10						9264 psi	161	0.8						835
		NQ C-3		100% (93%)										11.9	
							82 psi	118.2	15.2					SHALE, dark grey to black, highly weathered, soft	
	13.9 / 15														830
		NQ C-4		100% (73%)			26 psi	116.9	13.9						
	18.9 / 20													19.6	
		NQ C-5		100% (67%)			469 psi	133.2	8.5					SHALE, dark grey to black, slightly weathered to fresh, moderately hard	825
	23.9 / 25														820
		NQ C-6		100% (27%)										24.7 - 25.2' - highly weathered, soft to moderately hard zone	
							528 psi	138.5	8.1					28.9	

Boring backfilled with auger cuttings and bentonite, and the pavement was patched with asphalt cold patch with a spider plug.
Refusal at 3.6 feet.
Bottom of borehole at 28.9 feet.

BORING LOG W/ LAB DATA COLUMNS - HNTB_OFC001_TEMPLATE.GDT - 1/28/25 12:47 - \\KCOW00\JOBS\84948\DESIGN\GEOTECH\DST\GINT\84948 - HOLMES ROAD.GPJ

HNTB — LOG OF BORING

BORING NO. B- 6
PAGE 1 **OF** 1

PROJECT Holmes Street over I-670 - 84948
LOCATION Kansas City, Missouri
DATE STARTED 05/29/2024 **DATE COMPLETED** 05/29/2024
EXPLORATION CONTRACTOR Palmerton and Parrish, Inc.
DRILLER Eric Porter **DRILL RIG** CME-550X
HAMMER TYPE Auto **HAMMER EFFICIENCY** 1.26
LOGGED BY Zac Boyd **CHECKED BY** AWW

STATION / NORTHING / 1067014.4
OFFSET / EASTING / 2767660
SURFACE ELEVATION 848.3 ft
DATUM
GROUND WATER LEVELS:
AT TIME OF DRILLING NATD
AFTER N/A

DRILLING METHOD	DEPTH (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	CORE REC % (RQD %)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	UNCONFINED (tsf/psi)	DRY DENSITY (pcf)	WATER CONTENT (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PASSING #200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION (Unified (Visual) Classification System)	ELEVATION (ft)
	0														848.3
SSA 4.5														Dark brown, fine grained, LEAN CLAY, moist (FILL) 4.0	
	5	SPT J-1	8		34-50/2"	>4.0								Brown, some oxidized iron, FAT CLAY, moist, with limestone stringers (CH) 6.0	845
CORE BARREL NQ	6													LIMESTONE, tan to grey, highly weathered, soft to moderately hard 8.0	
		NQ C-1		95% (48%)			77 psi	112.2	15.8					SHALE, dark grey, weathered, soft 9.7	840
	10.5													LIMESTONE, light grey/tan, some oxidized iron seams 0.25" to 1" thick, slightly weathered, hard	
		NQ C-2		100% (97%)			9158 psi	164.5	0.9						835
	15.5													16.5	
		NQ C-3		100% (65%)			53 psi	114.4	15.4					SHALE, dark grey, highly weathered, soft 19.5	
	20.5													SHALE, dark grey, slightly weathered to weathered, moderately hard, fissile	830
		NQ C-4		93% (0%)											
	25.5														825
		NQ C-5		98% (18%)			190 psi	131.2	9.3						
	30.5													30.3	820
		NQ C-6		100% (62%)			77 psi	128	10.4					LIMESTONE, dark to light grey, weathered, hard, fossilized 33.5	
							4793 psi	157.1	2.2					SHALE, dark grey, highly weathered, soft 36.5	815
	35.5						1581 psi	142.3	6.7					LIMESTONE INTERBEDDED WITH SHALE, light grey and dark grey, slightly weathered to weathered, hard, fossilized	
		NQ C-7		100% (95%)			11102 psi	166.4	1.1						810
	40.5	NQ C-8		95% (90%)			2304 psi	142.3	6.2					41.3	

Boring backfilled with cuttings and bentonite
Refusal at 6.0 feet.
Bottom of borehole at 41.3 feet.

BORING LOG W/ LAB DATA COLUMNS - HNTB_OFC001_TEMPLATE.GDT - 1/28/25 12:47 - \\KCOW00\JOBS\84948\DESIGN\GEOTECH\DST\GINT\84948 - HOLMES ROAD.GPJ

STATE OF MISSOURI — VAN WILLIAM ROBBINS PE-2017015106 — PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	47
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION
DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

BORING DATA

Note: For locations of borings, see Sheet No. 4.
Note: This drawing is not to scale. Follow dimensions.

Detailed DEC 2024
Checked JAN 2025

HNTB — LOG OF BORING

BORING NO. B-7
PAGE 1 **OF** 1

PROJECT Holmes Street over I-670 - 84948
LOCATION Kansas City, Missouri
DATE STARTED 05/30/2024 **DATE COMPLETED** 05/31/2024
EXPLORATION CONTRACTOR Palmerton and Parrish, Inc.
DRILLER Eric Porter **DRILL RIG** CME-550X
HAMMER TYPE Auto **HAMMER EFFICIENCY** 1.26
LOGGED BY Zac Boyd **CHECKED BY** AWW

STATION / NORTHING / 1066905.8
OFFSET / EASTING / 2767572.6
SURFACE ELEVATION 838.4 ft
DATUM
GROUND WATER LEVELS:
AT TIME OF DRILLING NATD
AFTER N/A

DRILLING METHOD: CORE BARREL NQ

DEPTH (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	CORE REC % (RQD %)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	UNCONFINED (tsf/psi)	DRY DENSITY (pcf)	WATER CONTENT (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PASSING #200 (%)	MATERIAL DESCRIPTION (Unified (Visual) Classification System)	ELEVATION (ft)
0													838.4
												Light brown to grey, loose, medium grained, GRAVEL, moist (FILL)	
5	SPT J-1	6		3-1-1 (2)									835
6.5													
	NQ C-1		100% (80%)			66 psi	113.2	17.8				SHALE, brown to dark grey, highly weathered, soft	
9 10													830
	NQ C-2		100% (70%)			22 psi	107.6	17.7					
14 15													
	NQ C-3		100% (52%)			624 psi	138.5	8.4				SHALE, dark grey, slightly weathered to weathered, moderately hard to hard	
												16.5' - becomes slightly weathered	820
19 20						298 psi	135.3	9.5					
	NQ C-4		100% (27%)										
23.2													
												LIMESTONE, light and dark grey, weathered, moderately hard to hard, fossilized	815
24 25						4962 psi	161.8	0.7					
	NQ C-5		100% (92%)			630 psi	138.1	8.1				SHALE, light and dark grey, weathered, moderately hard, fossilized	
29 30													810
	NQ C-6		100% (100%)			12140 psi	167	1.4				INTERBEDDED LIMESTONE AND SHALE, light grey and dark grey, weathered to slightly weathered, shale is moderately hard to hard, limestone is hard	
25.0													
29.0													
32.0													

Boring backfilled with cuttings and bentonite
Bottom of borehole at 32.0 feet.

BORING LOG W/ LAB DATA COLUMNS - HNTB_OFC001_TEMPLATE.GDT - 1/28/25 12:47 - \\KCOW00\JOBS\84948\DESIGN\GEOTECH\DST\GINT\84948 - HOLMES ROAD.GPJ

HNTB — LOG OF BORING

BORING NO. B-8
PAGE 1 **OF** 1

PROJECT Holmes Street over I-670 - 84948
LOCATION Kansas City, Missouri
DATE STARTED 05/30/2024 **DATE COMPLETED** 05/30/2024
EXPLORATION CONTRACTOR Palmerton and Parrish, Inc.
DRILLER Eric Porter **DRILL RIG** CME-550X
HAMMER TYPE Auto **HAMMER EFFICIENCY** 1.26
LOGGED BY Zac Boyd **CHECKED BY** AWW

STATION / NORTHING / 1066956
OFFSET / EASTING / 2767660.1
SURFACE ELEVATION 841.8 ft
DATUM
GROUND WATER LEVELS:
AT TIME OF DRILLING NATD
AFTER N/A

DRILLING METHOD: CORE BARREL NQ 4.5

DEPTH (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	CORE REC % (RQD %)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	UNCONFINED (tsf)	DRY DENSITY (pcf/psi)	WATER CONTENT (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PASSING #200 (%)	MATERIAL DESCRIPTION (Unified (Visual) Classification System)	ELEVATION (ft)
0													841.8
												Dark brown and grey, LEAN CLAY, some gravel, moist (TOPSOIL)	
1.0													
	NQ C-1		98% (83%)			9627 psi	167.4	0.2				LIMESTONE, light grey, slightly weathered with orange-brown iron staining, hard 1.25'-1.85' decomposed clay zone	840
5													
	NQ C-2		100% (85%)			4873 psi	151.8	2.9					
7.5													835
												SHALE, dark grey, highly weathered, soft	
10	NQ C-3		100% (25%)			89 psi	118	14.0					
13.5													830
						356 psi	137.4	9.4				SHALE, dark grey, slightly weathered, moderately hard to hard	
15	NQ C-4		100% (13%)										825
20						372 psi	138	9.0					
	NQ C-5		97% (10%)			416 psi	140.1	8.6					820
25.2													
												LIMESTONE, dark grey, fine grained, moderately hard, fossilized	
27.3													815
	NQ C-6		100% (92%)			2549 psi	160	2.0				INTERBEDDED LIMESTONE AND SHALE, light grey and dark grey, weathered to slightly weathered, shale is moderately hard to hard, limestone is hard	
30						1718 psi	141.4	6.9					
30.0													

Boring backfilled using cuttings and bentonite
Refusal at 1.0 feet.
Bottom of borehole at 30.0 feet.

BORING LOG W/ LAB DATA COLUMNS - HNTB_OFC001_TEMPLATE.GDT - 1/28/25 12:47 - \\KCOW00\JOBS\84948\DESIGN\GEOTECH\DST\GINT\84948 - HOLMES ROAD.GPJ

STATE OF MISSOURI — VAN WILLIAM ROBBINS — PE-2017015106 — PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	48
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION | DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

BORING DATA

Note: For locations of borings, see Sheet No. 4.

Detailed DEC 2024
Checked JAN 2025

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

HNTB — LOG OF BORING

BORING NO. B- 9
PAGE 1 **OF** 1

PROJECT Holmes Street over I-670 - 84948
LOCATION Kansas City, Missouri
DATE STARTED 06/04/2024 **DATE COMPLETED** 06/04/2024
EXPLORATION CONTRACTOR Palmerton and Parrish, Inc.
DRILLER Eric Porter **DRILL RIG** CME-550X
HAMMER TYPE Auto **HAMMER EFFICIENCY** 1.26
LOGGED BY Zac Boyd **CHECKED BY** AWW

STATION / NORTHING / 1066836.8
OFFSET / EASTING / 2767570.1
SURFACE ELEVATION 838.3 ft
DATUM
GROUND WATER LEVELS:
AT TIME OF DRILLING NATD
AFTER N/A

DRILLING METHOD: CORE BARREL NQ

Depth (ft)	Sample Type Number	Sample Recovery (in)	Core Rec % (RQD %)	Blow Counts (N Value)	Pocket Pen. (tsf)	Unconfined (tsf/psi)	Dry Density (pcf)	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Passing #200 (%)	Elevation (ft)
0												838.3
5	SPT J-1	0		3-3-6 (9)								
10	SPT J-2	18		12-17-21 (38)	>4.0						40.6	
13	NQ C-1		100% (89%)			16 psi	98.1	25.5				
15.5	NQ C-2		53% (40%)			20 psi	103	23.1				
20.5	NQ C-3		73% (38%)			16 psi	102.5	24.0				
25.5	NQ C-4		85% (33%)			8599 psi 12735 psi 536 psi	164.5	1.8				
30.5	NQ C-5		100% (92%)			610 psi	144.8 / 165.2	0.5 / 6.3 / 9.5				
35.5	NQ C-6		70% (20%)				135.8					

GRAPHIC LOG

MATERIAL DESCRIPTION
Unified (Visual) Classification System

- 0.2 ASPHALT - 2 Inches
- 1.2 CONCRETE - 12 Inches
- Light brown, medium grained, poorly graded, SAND, moist (FILL)
- 10.5 Brown, stiff to hard, FAT CLAY, moist (CH)
- 13.0 SHALE, brown, fine grained, soft, highly weathered, clay seams 1" to 2" thick
- 20.5' - becomes dark grey
- 24.0 LIMESTONE, light grey, moderately hard
- 25.0 SHALE, dark grey to medium grey, highly weathered, moderately hard
- 28.5 LIMESTONE, light grey, slightly weathered to fresh, hard, fossilized
- 29.3 SHALE, dark grey, slightly weathered, hard
- 34.0' - becomes slightly weathered to weathered, moderately hard to hard
- 39.5

Elevations: 835, 830, 825, 820, 815, 810, 805, 800

Boring backfilled with auger cuttings and bentonite, and the pavement was patched with asphalt cold patch with a spider plug.
Bottom of borehole at 39.5 feet.

BORING LOG W/ LAB DATA COLUMNS - HNTB_OFC001_TEMPLATE.GDT - 1/28/25 12:47 - \\KCOW00\JOBS\84948\DESIGN\GEOTECH\DST\GINT\84948 - HOLMES ROAD.GPJ

HNTB — LOG OF BORING

BORING NO. B-10
PAGE 1 **OF** 1

PROJECT Holmes Street over I-670 - 84948
LOCATION Kansas City, Missouri
DATE STARTED 06/05/2024 **DATE COMPLETED** 06/05/2024
EXPLORATION CONTRACTOR Palmerton and Parrish, Inc.
DRILLER Eric Porter **DRILL RIG** CME-550X
HAMMER TYPE Auto **HAMMER EFFICIENCY** 1.26
LOGGED BY Zac Boyd **CHECKED BY** AWW

STATION / NORTHING / 1068853.5
OFFSET / EASTING / 2767655.9
SURFACE ELEVATION 839.4 ft
DATUM
GROUND WATER LEVELS:
AT TIME OF DRILLING NATD
AFTER N/A

DRILLING METHOD: CORE BARRES/A 4.5 NQ

Depth (ft)	Sample Type Number	Sample Recovery (in)	Core Rec % (RQD %)	Blow Counts (N Value)	Pocket Pen. (tsf)	Unconfined (tsf/psi)	Dry Density (pcf)	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Passing #200 (%)	Elevation (ft)
0												839.4
2.1	NQ C-1		100% 100%			4776 psi	160.5	0.9				
5.1	NQ C-2		70% (62%)			11543 psi	161.3	0.9				
10.1	NQ C-3		100% (92%)			23 psi	115.2	19.3				
15.1	NQ C-4		100% (72%)			36 psi	115.2	16.9				
20.1	NQ C-5		100% (92%)			29 psi	119.1	14.1				
25.1	NQ C-6		100% (90%)			193 psi	125.6	10.8				
30.1	NQ C-7		100% (80%)			144 psi	123.4	11.6				
35.1	NQ C-8		100% (92%)			866 psi	142.1	5.6				
						1364 psi	141.2	6.2				
						280 psi	145.6	11.2				

GRAPHIC LOG

MATERIAL DESCRIPTION
Unified (Visual) Classification System

- 0.2 ASPHALT - 3 Inches
- 1.1 CONCRETE - 10 inches
- 2.1 Light grey, loose, fine gravel, GRAVEL, moist (FILL)
- LIMESTONE, light grey, slightly weathered with orange-brown ironstaining, hard
- 6.1 SHALE, light brown, highly weathered, soft
- 11.6 SHALE, dark grey, weathered, moderately hard
- 30.0 LIMESTONE, light grey, slightly weathered to weathered, moderately hard
- 30.9 SHALE, dark grey to light grey, weathered, moderately hard
- 38.1

Elevations: 835, 830, 825, 820, 815, 810, 805

Boring backfilled with auger cuttings and bentonite, and the pavement was patched with asphalt cold patch with a spider plug.
Refusal at 2.1 feet.
Bottom of borehole at 38.1 feet.

BORING LOG W/ LAB DATA COLUMNS - HNTB_OFC001_TEMPLATE.GDT - 1/28/25 12:47 - \\KCOW00\JOBS\84948\DESIGN\GEOTECH\DST\GINT\84948 - HOLMES ROAD.GPJ

STATE OF MISSOURI — VAN WILLIAM ROBBINS — PE-2017015106 — PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	49
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION | DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

BORING DATA

Note: For locations of borings, see Sheet No. 4.

Detailed DEC 2024
Checked JAN 2025

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

HNTB — LOG OF BORING

BORING NO. B-11
PAGE 1 **OF** 1

PROJECT Holmes Street over I-670 - 84948
LOCATION Kansas City, Missouri
DATE STARTED 06/06/2024 **DATE COMPLETED** 06/07/2024
EXPLORATION CONTRACTOR Palmerton and Parrish, Inc.
DRILLER Eric Porter **DRILL RIG** CME-550X
HAMMER TYPE Auto **HAMMER EFFICIENCY** 1.26
LOGGED BY Zac Boyd **CHECKED BY** AWW

STATION / NORTHING / 1066779.4
OFFSET / EASTING / 2767568.3
SURFACE ELEVATION 839.1 ft
DATUM
GROUND WATER LEVELS:
AT TIME OF DRILLING NATD
AFTER N/A

DRILLING METHOD: CORE BARREL NQ

Depth (ft)	Sample Type Number	Sample Recovery (in)	Core Rec % (RQD %)	Blow Counts (N Value)	Pocket Pen. (tsf)	Unconfined (tsf/psi)	Dry Density (pcf)	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Passing #200 (%)	Elevation (ft)
0												839.1
	SPT J-1	15		3-1-3 (4)	0.5							
10	SPT J-2	12		6-10-14 (24)	>4.0			23.3	51	23		830
	SPT J-3	18		17-33-48 (81)	>4.0							
16	NQ C-1		100% (81%)			252 psi	119.3	14.1				
20 19.5	NQ C-2		93% (67%)			212 psi	116.1	14.3				820
24.5	NQ C-3		80% (38%)			283 psi	136.8	7.3				
30 29.5	NQ C-4		100% (95%)			191 psi	127.3	11.5				810
34.5	NQ C-5		100% (75%)			1460 psi	146	3.5				
40 39.5	NQ C-6		100% (75%)			2188 psi	136.2	8.1				800
						16784 psi	163.3	0.5				
44.5	NQ C-7		100% (80%)			3087 psi	151	3.4				
50 49.5	NQ C-8		100% (100%)			11322 psi	159.9	0.9				790

MATERIAL DESCRIPTION — Unified (Visual) Classification System

- 0.3 — ASPHALT - 3 inches
- 1.3 — CONCRETE - 12 inches
- 4.8 — Light brown, loose, fine to medium grained, SAND, moist (FILL)
- 7.5 — Reddish brown, soft, LEAN CLAY, moist (CL)
- 16.0 — Light brown, very stiff, FAT CLAY, moist (CH)
- 23.2 — SHALE, light brown, weathered, moderately hard
- 23.6 — LIMESTONE, dark grey, highly weathered, moderately hard, fossilized
- 28.8 — SHALE, dark grey, highly weathered, soft to moderately hard
- 30.0 — LIMESTONE, dark grey, weathered with highly weathered zones, moderately hard to hard
- 35.3 — SHALE, dark grey, weathered with highly weathered zones, moderately hard with soft zones
- 40.8 — SHALE, grey, fresh, hard
- 54.5 — LIMESTONE, grey, slightly weathered to fresh with interbedded shale intil 42 feet, hard, some fossilization

Boring backfilled with auger cuttings and bentonite, and the pavement was patched with asphalt cold patch with a spider plug. Bottom of borehole at 54.5 feet.

BORING LOG W/ LAB DATA COLUMNS - HNTB_OFC001_TEMPLATE.GDT - 1/28/25 12:47 - \\KCOW00\JOBS\84948\DESIGN\GEOTECH\DST\GINT\84948 - HOLMES ROAD.GPJ

HNTB — LOG OF BORING

BORING NO. B-12
PAGE 1 **OF** 1

PROJECT Holmes Street over I-670 - 84948
LOCATION Kansas City, Missouri
DATE STARTED 06/07/2024 **DATE COMPLETED** 06/07/2024
EXPLORATION CONTRACTOR Palmerton and Parrish, Inc.
DRILLER Eric Porter **DRILL RIG** CME-550X
HAMMER TYPE Auto **HAMMER EFFICIENCY** 1.26
LOGGED BY Zac Boyd **CHECKED BY** AWW

STATION / NORTHING / 1066793
OFFSET / EASTING / 2767651.7
SURFACE ELEVATION 838.8 ft
DATUM
GROUND WATER LEVELS:
AT TIME OF DRILLING NATD
AFTER N/A

DRILLING METHOD: CORE BARREL NQ

Depth (ft)	Sample Type Number	Sample Recovery (in)	Core Rec % (RQD %)	Blow Counts (N Value)	Pocket Pen. (tsf)	Unconfined (tsf/psi)	Dry Density (pcf)	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Passing #200 (%)	Elevation (ft)
0												838.8
5	SPT J-1	18		3-4-8 (12)	2.5			23.4	54	18		835
10	SPT J-2	18		11-26-37 (63)	>4.0							830
15	SPT J-3	18		19-43-50/4"	>4.0			18.4	50	22		825
20 19.5	NQ C-1		50% (25%)			115 psi	123.2	12.0				820
25 24.5	NQ C-2		100% (58%)			66 psi	122.8	9.2				
						9934 psi	169.4	1.7				810

MATERIAL DESCRIPTION — Unified (Visual) Classification System

- 0.3 — ASPHALT - 3 inches
- 1.1 — CONCRETE 10 inches
- Light brown, stiff, FAT CLAY, moist, (CH)
- 8.0 — Light brown, hard, FAT CLAY, moist, shaley structure (CH)
- 19.5 — SHALE, dark grey, weathered, soft to moderately hard
- 23.5 — LIMESTONE, dark grey, highly weathered, moderately hard
- 24.0 — SHALE, dark grey, slightly weathered to weathered, moderately hard
- 29.0 — LIMESTONE, grey, moderately hard to hard
- 29.5

Boring backfilled with auger cuttings and bentonite, and the pavement was patched with asphalt cold patch with a spider plug. Bottom of borehole at 29.5 feet.

BORING LOG W/ LAB DATA COLUMNS - HNTB_OFC001_TEMPLATE.GDT - 1/28/25 12:47 - \\KCOW00\JOBS\84948\DESIGN\GEOTECH\DST\GINT\84948 - HOLMES ROAD.GPJ

STATE OF MISSOURI — VAN WILLIAM ROBBINS — PE-2017015106 — PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	50
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION | DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY
NO. 001270

BORING DATA

Note: For locations of borings, see Sheet No. 4.

Detailed DEC 2024
Checked JAN 2025

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

HNTB — LOG OF BORING

BORING NO. B-13
PAGE 1 **OF** 1

PROJECT Holmes Street over I-670 - 84948
LOCATION Kansas City, Missouri
DATE STARTED 05/28/2024 **DATE COMPLETED** 05/28/2024
EXPLORATION CONTRACTOR Palmerton and Parrish, Inc.
DRILLER Eric Porter **DRILL RIG** CME-550X
HAMMER TYPE Auto **HAMMER EFFICIENCY** 1.26
LOGGED BY Zac Boyd **CHECKED BY** AWW

STATION / NORTHING / 1066716.7
OFFSET / EASTING / 2767599.5
SURFACE ELEVATION 853.6 ft
DATUM
GROUND WATER LEVELS:
AT TIME OF DRILLING NATD
AFTER N/A

DRILLING METHOD	DEPTH (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	CORE REC % (RQD %)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	UNCONFINED (tsf/psi)	DRY DENSITY (pcf)	WATER CONTENT (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PASSING #200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION Unified (Visual) Classification System	ELEVATION (ft)
	0														853.6
SSA 4.5														ASPHALT - 2 Inches (0.1)	
														CONCRETE - 14 Inches (1.2)	
		SPT J-1	18		2-3-3 (6)	1.0			27.3	39	21			Dark grey, firm, LEAN CLAY, moist, some oxidized iron (CL)	850
	10	SPT J-2	18		3-3-3 (6)	1.0									
		ST U-1	24			1.25		98.4	25.5					(14.0)	
		SPT J-3	18		2-3-3 (6)	0.75								Brown, firm, LEAN CLAY, moist, some oxidized iron (CL)	840
	20	SPT J-4	18		3-3-5 (8)	1.5			23.5	46	16			(21.0)	
														Light brown and grey, hard, FAT CLAY, moist, shaley structure (CH)	830
		SPT J-5	18		8-12-17 (29)	>4.0			18.9	55	22				
	30	SPT J-6	18		11-19-25 (44)	>4.0									
		SPT J-7	18		16-27-45 (72)	>4.0			19.8	50	22				820
	40													(39.9)	
CORE BARREL NQ	39.9	SPT J-8	0		50/0"	>4.0								"LIMESTONE, light grey, moist, highly weathered, moderately hard, fossilized (40.4)	
		NQ C-1		83% (52%)			11138 psi	167.6	1.1					SHALE, dark grey, highly weathered to weathered, soft to moderately hard (44.0)	
	44.8	NQ C-2		100% (92%)			1498 psi	138.4	7.7					LIMESTONE, light to dark grey, hard, fossilized, Shaley Seams 1" to 2" thick (46.0)	810
	50	NQ C-3		100% (92%)			1306 psi	147.5	2.2					SHALE, dark grey, slightly weathered to fresh, hard, clay seams 1" to 2" thick	
	54.8	NQ C-4		100% (68%)			1995 psi	145	2.1						800
	60	NQ C-5		100% (92%)			19641 psi	160.3	0.3					(59.4)	
		NQ C-6		100% (100%)										LIMESTONE, light grey, hard, slightly weathered to fresh, hard, fossilized	
														(65.2)	790

Boring backfilled with auger cuttings and bentonite, and the pavement was patched with asphalt cold patch with a spider plug.
Refusal at 39.9 feet.
Bottom of borehole at 65.2 feet.

BORING LOG W/ LAB DATA COLUMNS - HNTB_OFC001_TEMPLATE.GDT - 1/28/25 12:47 - \\KCOW00\JOBS\84948\DESIGN\GEOTECH\DST\GINT\84948 - HOLMES ROAD.GPJ

HNTB — LOG OF BORING

BORING NO. B-14
PAGE 1 **OF** 1

PROJECT Holmes Street over I-670 - 84948
LOCATION Kansas City, Missouri
DATE STARTED 05/22/2024 **DATE COMPLETED** 05/22/2024
EXPLORATION CONTRACTOR Palmerton and Parrish, Inc.
DRILLER Eric Porter **DRILL RIG** CME-550X
HAMMER TYPE Auto **HAMMER EFFICIENCY** 1.26
LOGGED BY Zac Boyd **CHECKED BY** AWW

STATION / NORTHING / 1066722.7
OFFSET / EASTING / 2767637.8
SURFACE ELEVATION 854.0 ft
DATUM
GROUND WATER LEVELS:
AT TIME OF DRILLING NATD
AFTER N/A

DRILLING METHOD	DEPTH (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	CORE REC % (RQD %)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	UNCONFINED (tsf/psi)	DRY DENSITY (pcf)	WATER CONTENT (%)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PASSING #200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION Unified (Visual) Classification System	ELEVATION (ft)
	0														854.0
HSA 4.25"														ASPHALT - 2 Inches (0.1)	
														CONCRETE - 16 Inches (1.5)	
		SPT J-1	18		1-2-2 (4)	0.5								Brown, soft to firm, oxidized iron, LEAN CLAY, moist (CL)	850
	10	ST U-1	21			0.75		101.5	25.4	38	19				
		SPT J-2	18		2-2-3 (5)	0.5								(13.0)	
		SPT J-3	18		1-2-3 (5)	1.5								Red-brown, firm to stiff, FAT CLAY, moist, shaley structure (CH)	840
	20	SPT J-4	18		3-5-10 (15)	3.0			20.6	49	17			20.0' - becomes light brown	
		SPT J-5	18		8-15-22 (37)	>4.0								25.0' - change to hard, shaley	830
	30	SPT J-6	18		11-26-40 (66)	>4.0			16.4	52	24				
		SPT J-7	17		26-41-50/5"	>4.0									820
	40													(39.5)	
CORE BARREL NQ	40.9	SPT J-8	1		50/3"	>4.0								LIMESTONE, light grey to brown, slightly weathered, moderately hard (41.5)	
		NQ C-1		100% (90%)			4311 psi 751 psi	159.1 137.1	1.7 8.6					SHALE, dark grey, weathered to slightly weathered, moderately hard (43.7)	
	45	NQ C-2		97% (75%)			1171 psi 1001 psi	144.9 134.2	6.3 8.9					LIMESTONE, light grey, slightly weathered, hard (47.5)	810
	50	NQ C-3		100% (53%)										SHALE, dark grey, slightly weathered, moderately hard to hard	
	55	NQ C-4		100% (70%)			4560 psi 1061 psi	160.6 134.4	1.6 9.9						800
	60	NQ C-5		100% (88%)			7253 psi 5350 psi	162 156.2	1.1 1.2					(59.3)	
														LIMESTONE, light grey, slightly weathered, hard, few highly weathered, soft shale seams	
	65	NQ C-6		100% (100%)			3023 psi 3093 psi	161 137.3	0.5 6.8					(66.1)	790

Boring backfilled with auger cuttings and bentonite, and the pavement was patched with asphalt cold patch with a spider plug.
Refusal at 40.9 feet.
Bottom of borehole at 66.1 feet.

BORING LOG W/ LAB DATA COLUMNS - HNTB_OFC001_TEMPLATE.GDT - 1/28/25 12:47 - \\KCOW00\JOBS\84948\DESIGN\GEOTECH\DST\GINT\84948 - HOLMES ROAD.GPJ

STATE OF MISSOURI — VAN WILLIAM ROBBINS PE-2017015106 — PROFESSIONAL ENGINEER
04-03-25

DATE PREPARED	04/03/2025
ROUTE	I-670
STATE	MO
DISTRICT	BR
SHEET NO.	51
COUNTY	JACKSON
JOB NO.	JKU0024
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9599

DESCRIPTION | DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY NO. 001270

BORING DATA

Note: For locations of borings, see Sheet No. 4.
Note: This drawing is not to scale. Follow dimensions.

Detailed DEC 2024
Checked JAN 2025