DESIGN DESIGNATION CHARITON - ROUTE KK

A.A.D.T. - 2045 = 158D.H.V. = 13% T = 9% V = 55 M.P.H.D = 50%/50%

FUNCTIONAL CLASSIFICATION - MINOR COLLECTOR

A.A.D.T. - 2025 = 143

LIVINGSTON - ROUTE D

A.A.D.T. - 2025 = 446A.A.D.T. - 2045 = 482 D.H.V. = 7% T = 11% V = 55 M.P.H.

D = 40%/60%FUNCTIONAL CLASSIFICATION = MAJOR COLLECTOR

CARROLL - ROUTE B

A.A.D.T. - 2025 = 129A.A.D.T. - 2045 = 142D.H.V. = 10% T = 12% V = 55 M.P.H. D = 48%/52% FUNCTIONAL CLASSIFICATION = MAJOR COLLECTOR

CARROLL - ROUTE JJ

A.A.D.T. - 2025 = 170 A.A.D.T. - 2045 = 188D.H.V. = 10% T = 16% V = 55 M.P.H. D = 50%/50% FUNCTIONAL CLASSIFICATION = MAJOR COLLECTOR

NO RIGHT OF WAY ACQUISITION

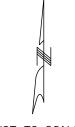
CONVENTIONAL SYMBOLS

	EXISTING	NEW
BUILDINGS AND STRUCTURES GUARD RAIL GUARD CABLE CONCRETE RIGHT-OF-WAY MARKER STEEL RIGHT-OF-WAY MARKER LOCATION SURVEY MARKER	0000	
UTILITIES FIBER OPTICS OVERHEAD CABLE TV UNDERGROUND CABLE TV OVERHEAD TELEPHONE UNDERGROUND TELEPHONE OVERHEAD POWER UNDERGROUND POWER SANITARY SEWER STORM SEWER GAS WATER	- FO - OTV - UTV - OT - UTV - OT - UT - OE - UE - SS - G - W - SAN	-FO-OTV-UTV-OT-OE-OE-SS-G-W
MANHOLE	HYD.)
FIRE HYDRANT	w _v	j
WATER VALVE	ww)
WATER METER	D)
DROP INLET		
DITCH BLOCK	=	=
GROUND MOUNTED SIGN	SIGN	-
LIGHT POLE		
H-FRAME POWER POLE		-
TELEPHONE PEDESTAL FENCE	PED _	_
CHAIN LINK WOVEN WIRE GATE POST	— \ — > 	/— <—
BENCHMARK	ВМ	3

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

PLANS FOR PROPOSED STATE HIGHWAY CHARITON, LIVINGSTON, AND CARROLL COUNTIES



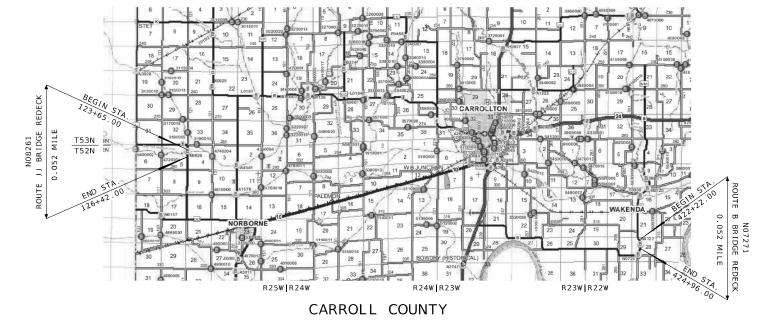
NOT TO SCALE

T55N R26W|R25W

LIVINGSTON COUNTY



CHARITON COUNTY



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

INDEX OF SHEETS

DESCRIPTION	SHEET NUMBEF
TITLE SHEET	1
TYPICAL SECTIONS (TS) (4 SHEETS)	2
QUANTITIES (QU) (5 SHEETS)	3
PLAN-PROFILE (PP)	4 - 7
SPECIAL SHEET (SS)	8 - 11
TRAFFIC CONTROL SHEETS (TC)	12-15
BRIDGE DRAWINGS (B)	
A18892	1 - 10
L05481	1 - 9
N07271	1 - 11
N08261	1 - 11

PROFILE	PE-20 PE-20	MBER 1802123 ALE THAS THAS ED ANE	LY.
4	DATE 1		025
	JTE		STATE
VA		1	MO
DIST	RICT	SH	EET NO.
	111	1	1
Ν			1
N	СО	JNTY	
N	co VAR	IOU	
N	CO VAR	I OU	is
	VAR JOE JNW	I OU 8 NO. 0 0 1	IS 0
	CO VAR	I OU 8 NO. 0 0 1	IS 0
	VAR JOE JNW CONTR	I OU 8 NO. 0 0 1	0 ID.
	J NW CONTR	IOU NO. OO1	0 ID.

LENGTH OF PROJECT

CHARITON - ROUTE KK STA. 644+44.00 BEGINNING END STA. 651+01.00 APPARENT LENGTH 657.00 FEET

LIVINGSTON - ROUTE D

STA 393+91.00

STA. 397+55.00 APPARENT LENGTH 364.00 FEET

CARROLL - ROUTE B BEGINNING STA. 422+22.00 END STA. 424+96.00

BEGINNING

END

APPARENT LENGTH 274.00 FEET

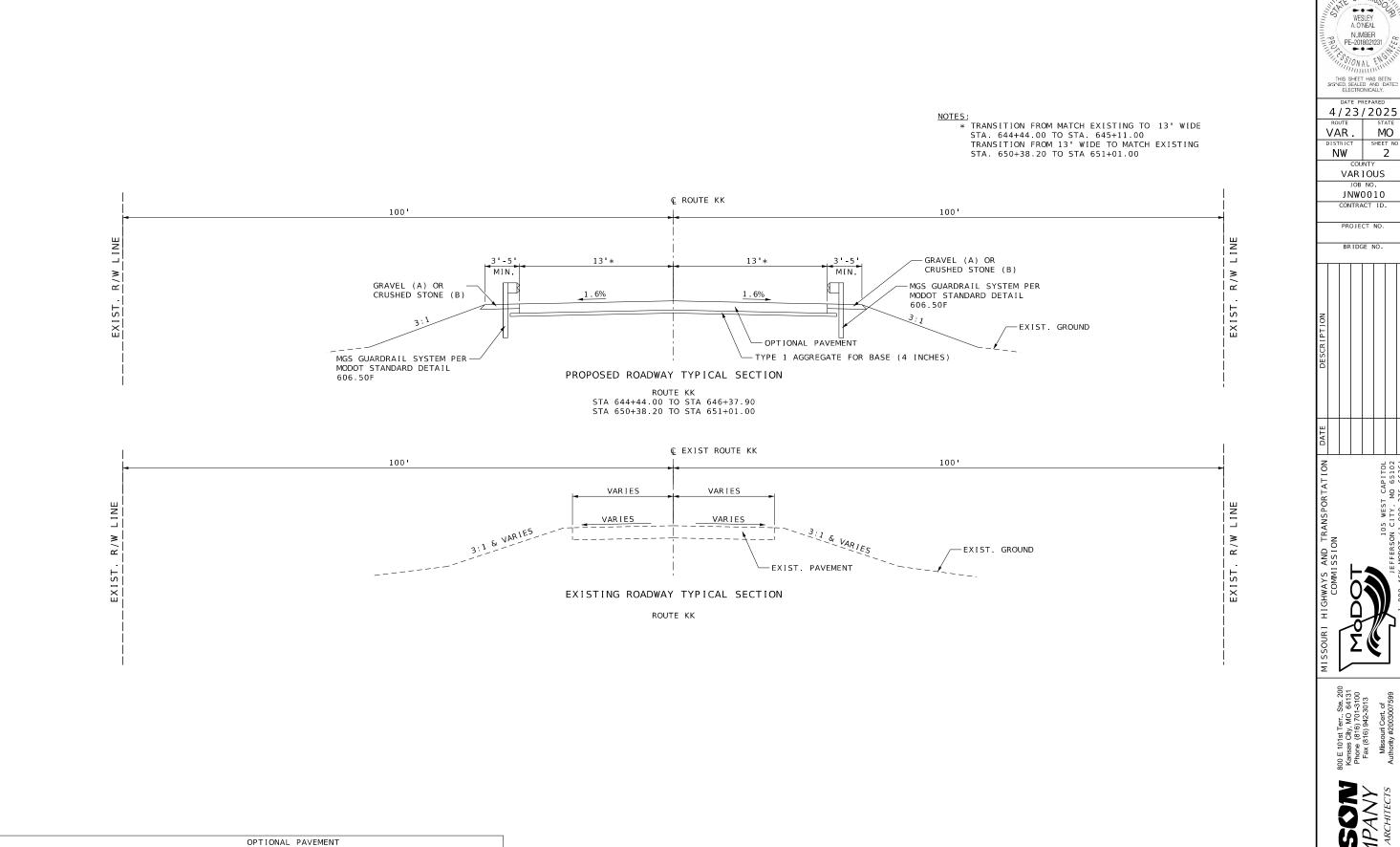
CARROLL - ROUTE JJ BEGINNING STA. 123+65.00 END STA. 126+42.00

APPARENT LENGTH 277.00 FEET

TOTAL CORRECTIONS 0.00 FEET NET LENGTH OF PROJECT 1572.00 FEET STATE LENGTH 0.298 MILES

FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES

0.6 ACRES



PCCP DESIGN

8.5" PCCP

15 FT. JOINT SPACING, $1\frac{1}{4}$ "
DOWELS, EXTENDED SLAB

LOCATION

MO ROUTE KK

HMA DESIGN

10.0" HMA

2" BITUMINOUS PAVEMENT MIXTURE PG58-28H (BP-1)

OVER 8" BITUMINOUS PAVEMENT MIXTURE PG64-22 (BASE)

800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013 TYPICAL SECTIONS CHARITON - ROUTE KK SHEET 1 OF 4

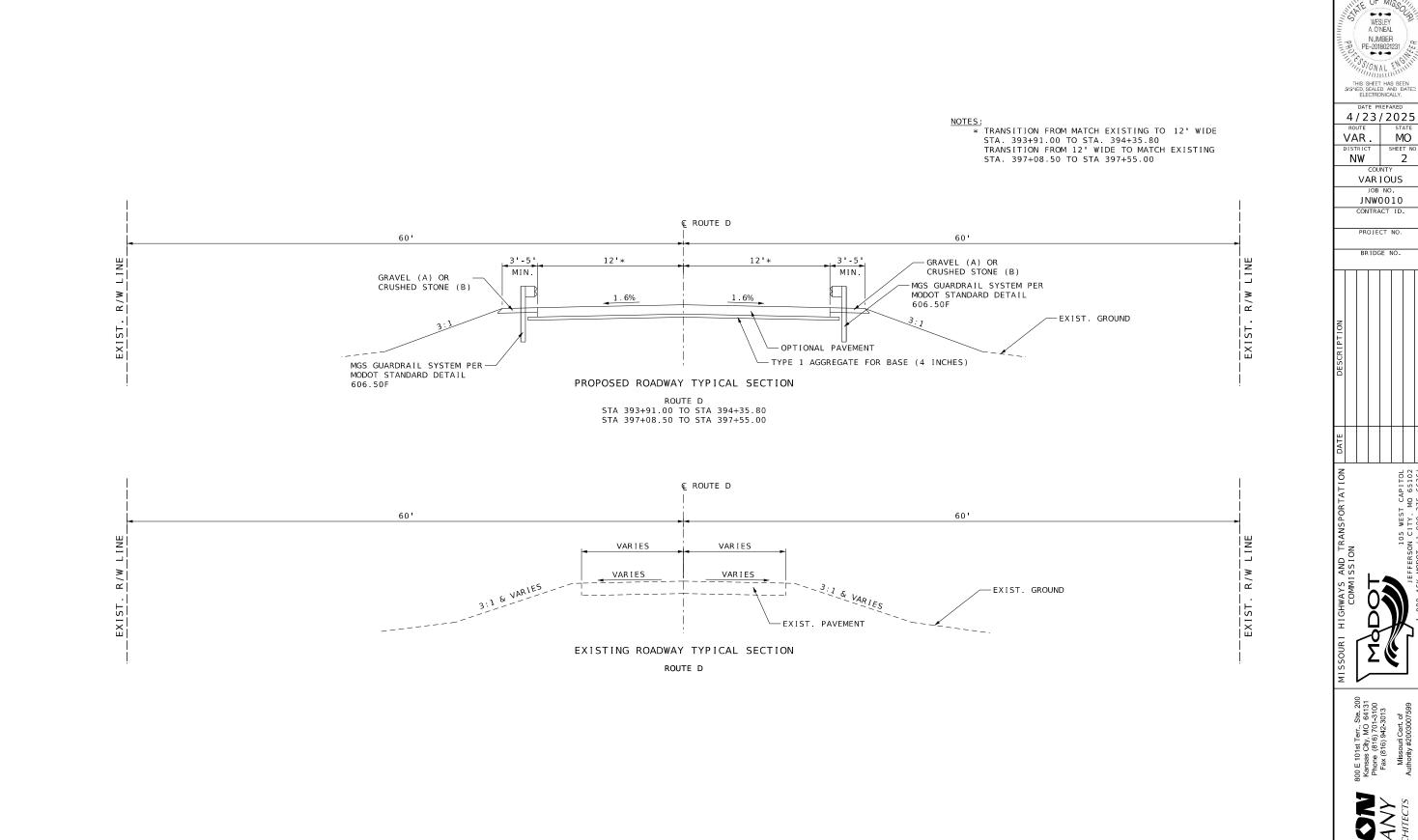
WESLEY A. O'NEAL

MO

SHEET NO

2

JOB NO.



OPTIONAL PAVEMENT

HMA DESIGN

10.0" HMA 2" BITUMINOUS PAVEMENT MIXTURE PG58-28H (BP-1)

OVER 8" BITUMINOUS PAVEMENT MIXTURE PG64-22 (BASE)

PCCP DESIGN

8.5" PCCP

15 FT. JOINT SPACING, $1\frac{1}{4}$ "
DOWELS, EXTENDED SLAB

LOCATION

MO ROUTE D

800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013 TYPICAL SECTIONS LIVINGSTON - ROUTE D SHEET 2 OF 4 002_TS_01-04_NW0010_I1_L0548_002.dgn 1:47:09 PM 7/1/2025

MO SHEET NO

2

JOB NO.

PROJECT NO.

BRIDGE NO.

NOTES:

* TRANSITION FROM MATCH EXISTING TO 11' WIDE

STA. 422+22.00 TO STA. 422+93.00

TRANSITION FROM 11' WIDE TO MATCH EXISTING STA. 424+56.30 TO STA 424+96.00 © ROUTE B 45' 45' EXIST. R/W LINE EXIST. R/W LINE 11'* 11'* OPTIONAL PAVEMENT -TYPE 1 AGGREGATE FOR BASE (4 INCHES) PROPOSED ROADWAY TYPICAL SECTION ROUTE B STA 422+22.00 TO STA 422+93.00 STA 424+56.30 TO STA 424+96.00 © ROUTE B 45' R/W LINE VARIES VARIES VARIES VARIES EXIST. EXIST. - EXIST. PAVEMENT EXISTING ROADWAY TYPICAL SECTION ROUTE B

ſ		OPTIONAL PAVEMENT	
Į		OPTIONAL PAVEMENT	
	LOCATION	HMA DESIGN	PCCP DESIGN
	MO ROUTE B	10.0" HMA 2" BITUMINOUS PAVEMENT MIXTURE PG58-28H (BP-1) OVER 8" BITUMINOUS PAVEMENT MIXTURE PG64-22 (BASE)	8.5" PCCP 15 FT. JOINT SPACING, $1\frac{1}{4}$ " DOWELS, EXTENDED SLAB
Ì			

TYPICAL SECTIONS CARROLL - ROUTE B SHEET 3 OF 4

WESLEY A ONEAL NUMBER PE-2018021231 4/23/2025 VAR. MO SHEET NO. NW VARIOUS JOB NO.
JNW0010
CONTRACT ID. PROJECT NO. BRIDGE NO.

> 800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013 Missouri Cert. of

NOTES:

* TRANSITION FROM MATCH EXISTING TO 11' WIDE

STA. 123+65.00 TO STA. 124+22.20

TRANSITION FROM 11' WIDE TO MATCH EXISTING STA. 125+92.90 TO STA 126+42.00 © ROUTE JJ 45' 45' EXIST. R/W LINE EXIST. R/W LINE 11'* 11'* OPTIONAL PAVEMENT -TYPE 1 AGGREGATE FOR BASE (4 INCHES) PROPOSED ROADWAY TYPICAL SECTION ROUTE JJ STA 123+65.00 TO STA 124+22.20 STA 125+92.90 TO STA 126+42.00 © ROUTE JJ 45' 45' R/W LINE VARIES VARIES VARIES VARIES EXIST. EXIST. - EXIST. PAVEMENT EXISTING ROADWAY TYPICAL SECTION ROUTE JJ

	OPTIONAL PAVEMENT	
LOCATION	HMA DESIGN	PCCP DESIGN
MO ROUTE JJ	10.0" HMA 2" BITUMINOUS PAVEMENT MIXTURE PG58-28H (BP-1) OVER 8" BITUMINOUS PAVEMENT MIXTURE PG64-22 (BASE)	$\frac{\text{8.5" PCCP}}{\text{15 FT. JOINT SPACING, }} 1^{1}\!$

TYPICAL SECTIONS CARROLL - ROUTE JJ SHEET 4 OF 4

WESLEY A ONEAL NJMBER PE-2018021231 4/23/2025 VAR. MO SHEET NO. NW VARIOUS JOB NO.
JNW0010
CONTRACT ID. PROJECT NO. BRIDGE NO.

800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013

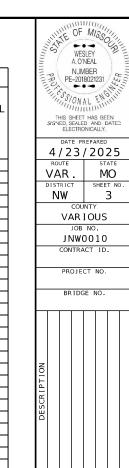
KCOMPANY ENGINEERS & ARCHITECTS

			MOVAL OF I			
BEGIN	END	SIDE	DESCRIPTION	QUANTITY	UNITS	REMARKS
STATION	STATION					
A1889 - F	ROUTE KK					
644+44		RT/LT	SAW CUT	22	LF	
651+01		RT/LT	SAW CUT	23	LF	
646+58		RT/LT	SIGN	2	EA	OBJECT MARKER
650+18		RT/LT	SIGN	2	EA	OBJECT MARKER
644+44	646+58	RT/LT	PAVEMENT	600.6	SY	
650+18	651+01	RT/LT	PAVEMENT	222.4	SY	
646+00	646+52	RT	GUARDRA I L	59	LF	
645+74	646+46	LT	GUARDRA I L	83	LF	
650+32	651+97	RT	GUARDRA I L	165	LF	
650+26	651+79	LT	GUARDRA I L	153	LF	
			TOTAL	1	LS	
L0548 - F	ROUTE D		T			
393+91		RT/LT	SAW CUT	22	LF	
397+55		RT/LT	SAW CUT	22	LF	
394+56		RT/LT	SIGN	2	EA	OBJECT MARKER
396+88	204.50	RT/LT	SIGN	2	EA	OBJECT MARKER
393+91	394+56	RT/LT	PAVEMENT	163.0	SY	
396+89	397+55	RT/LT	PAVEMENT	166.1	SY	
NO 7 2 7	OUTE B		TOTAL	1	LS	
N0727 - F	T I	DT/LT	SAW CUT	20	1.5	
422+22 424+96		RT/LT RT/LT	SAW CUT	20	LF LF	
						TRUCKS OVER 14 TON
414+23		RT	SIGN	1	EA	TRUCKS OVER 14 TON
416+59		RT	SIGN	1	EA	YIELD
423+13		RT/LT	SIGN	2	EA	OBJECT MARKER
424+36		RT/LT	SIGN	2	EA	OBJECT MARKER
426+56		LT	SIGN	1	EA	YIELD
431+08		LT	SIGN	1	EA	TRUCKS OVER 14 TON
433+70		LT	SIGN	1	EA	ONE LANE BRIDGE
422+22	423+13	RT/LT	PAVEMENT	212.9	SY	
424+36	424+96	RT/LT	PAVEMENT	141.3	SY	
			TOTAL	1	LS	
N0826 - F	ROUTE JJ					
123+65		RT/LT	SAW CUT	22	LF	
126+42		RT/LT	SAW CUT	21	LF	
124+42		RT/LT	SIGN	2	EA	OBJECT MARKER
125+72		RT/LT	SIGN	2	EA	OBJECT MARKER
123+19	ļ	RT	SIGN	1	EA	YIELD
127+00	ļ	LT	SIGN	1	EA	YIELD
123+65	124+42	RT/LT	PAVEMENT	181.2	SY	
125+73	126+42	RT/LT	PAVEMENT	159.1	SY	
			TOTAL	1	LS	
			PAY TOTAL	1	LS	

CLEARING & GRUBBING							
BEGIN	END	QTY	REMARKS				
STATION	STATION	(ACRE)					
L0548 - R	OUTE D						
394+56	396+89	0.5	BRUSH AND SMALL TREE REMOVAL				
	TOTAL	0.5					
N0826 - R	N0826 - ROUTE JJ						
124+42	125+73	0.5	BRUSH AND SMALL TREE REMOVAL				
	TOTAL	0.5					
PA	Y TOTAL	1.00					

GUARDRA I L									
				MGS BRIDGE	TYPE A			BR I DGE	
BEGIN	END	SIDE	MGS	APPROACH	CRASHWORTHY	TYPE A	END	ANCHOR	ASYMMETR I CAL
STATION	STATION		GUARDRAIL	TRANSITION SECTION	FND TERMINAL	GUARDRATI	ANCHOR	END SECTION	TRANSITION
317(110)			00/11/01/17/12	(REGULAR/NO CURB)	(MASH)	00/11/0/17	, arenon	(THRIE BEAM)	SECTION
			/IE)	i i	1	(15)	(EA)		
A1000 DOUTE KK			(LF)	(EA)	(EA)	(LF)	(EA)	(EA)	(EA)
A1889 - ROUTE KK		D.T.				25.0	1		
646+07	646+24	RT				25.0			
645+73	646+17	LT				50.0			
650+52	651+16	LT	62.5						
650+61	650+74	RT	12.5						
646+06	646+07	RT					1		
645+69	645+73	LT					1		
646+24	646+62	RT						1	1
646+17	646+55	LT						1	1
650+23	650+61	RT		1					
650+16	650+52	LT		1					
650+74	651+24	RT			1				
651+16	651+66	LT			1				
		TOTAL	75.0	2	2	75	2	2	2
L0548 - ROUTE D					T	T			
393+43	394+18	RT	75.0						
394+05	394+18	LT	12.5						
397+26	397+38	RT	12.5						
397+27	398+02	LT	75.0						
394+18	394+56	RT		1					
394+18	394+56	LT		1					
396+89	397+26	RT		1					
396+89	397+27	LT		1					
392+92	393+43	RT			1				
393+55	394+05	LT			1				
397+38	397+90	RT			1				
398+02	398+53	LT			1				
		TOTAL	175.0	4	4	0	0	0	0
		PAY TOTAL	250.0	6	6	75	2	2	2

PERMANENT EROSION CONTROL								
			FURNISHING	PLACING			PERMANENT	
BEGIN	l end l	SIDE	TYPE 1	TYPE 1	FURNISHING	PLACING	EROSION	
STATION	STATION		ROCK DITCH	ROCK DITCH	TYPE 2	TYPE 2	CONTROL	
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			LINER	LINER		ROCK BLANKET		
			(CY)	(CY)	(CY)		(SY)	
A1889 - R	OUTE KK		(С1)	(С1)	(СТ)	(CY)	(51)	
646+53	646+56	RT	2	2	Г		13	
646+46	646+49	I T	2	2			13	
650+27	650+30	RT	2	2			13	
650+20	650+23	LT	2	2			13	
030120	030123	TOTAL	8	8			52	
L0548 - R	OUTE D	101712	Ü				, J2	
394+26	394+77	LT/RT			271	271	363	
396+68	397+19	LT/RT			265	265	354	
		TOTAL			536	536	717	
N0727 - R	OUTE B						•	
423+04	423+07	RT	1	1			6	
423+04	423+07	LT	2	2			10	
424+42	424+45	RT	1	1			6	
424+42	424+45	LT	2	2			10	
		TOTAL	6	6			32	
N0826 - R	OUTE JJ							
124+36	124+39	RT	2	2			13	
124+36	124+39	LT	2	2			11	
125+79	125+79	RT	2	2			13	
125+79	125+79	LT	3	3			16	
		TOTAL	9	9			53	
	PA	Y TOTAL	23	23	536	536	854	



MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

MADOT

105 WEST CAPITON
LEFFERSON CITY, MO 6510.

800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013 Missouri Cert. of Authority #2003007599



TEMPORARY EROSION CONTROL							
					TYPE 2C		
BEGIN	END	SIDE	SILT	ROCK	EROS LON	TYPE C	SEDIMENT
	STATION	3.52	FENCE	DITCH		l	REMOVAL
STATION	STATION		ILINCL				KLMOVAL
					BLANKET		(6)()
			(LF)	(LF)	(SY)	(LF)	(CY)
A1889 - F							
644+40	646+67	RT	267				2.7
644+41	646+52	LT	214				2.1
650+13	652+03	RT	213				2.1
650+13	652+04	LT	200				2.0
646+07	646+41	RT			38		
645+56	646+45	LT			98		
651+13	652+00	RT			92		
651+64	652+04	LT			36		
10510 5	OUTE D	TOTAL	894		264		9
L0548 - F		D.T. 1	107	I	T	Ι	2.0
392+62	394+54	RT	197				2.0
392+59	393+15	LT	56				0.6
397+00	398+92	RT	199				2.0
394+22		LT		113			1.0
397+47		LT		113			1.0
392+62	394+36	RT			197		
393+19	394+36	LT			458		
397+08	398+26	RT			229		
397+08	398+87	LT			581		
394+31	394+83	RT/LT				159	10.0
396+62	397+31	RT/LT				182	10.0
		TOTAL	452	226	1465	341	27
N0727 - F							
422+22	423+17	RT	98				1.0
422+20	423+14	LT	102				1.0
424+34	424+98	RT	71				0.7
424+35	424+98	LT	75				0.8
422+22	423+13	RT			58		
422+22	423+13	LT			43		
424+36	424+96	RT			22		
424+36	424+96	LT			30		
		TOTAL	346		153		4
N0826 - F							
123+65	124+51	RT	102				1.0
123+65	124+46	LT	91				0.9
125+68	125+68	RT	98				1.0
125+64	125+64	LT	104				1.0
123+65	124+42	RT			38		
123+64	124+42	LT			45		
125+73	126+42	RT			35		
125+73	126+43	LT			46		
		TOTAL	395		164		4
	PA	Y TOTAL	2087	226	2046	341	44

S	SEEDING AND MULCHING						
BEGIN	END	COOL SEASON					
STATION	STATION	MIXTURES	MULCHING				
		(AC)	(AC)				
A1889 - R	OUTE KK						
644+44	651+01	0.1	0.1				
	TOTAL	0.1	0.1				
L0548 - R	OUTE D						
393+91	397+55	0.3	0.3				
	TOTAL	0.3	0.3				
N0727 - R	OUTE B						
422+22	424+96	0.1	0.1				
	TOTAL	0.1	0.1				
N0826 - R	N0826 - ROUTE JJ						
123+65	126+42	0.1	0.1				
	TOTAL	0.1	0.1				
PA	Y TOTAL	0.6	0.6				

PAVEMENT PERM. MARKING PAINT 4" TYPE P BEADS (LF) (LF)								
BEGIN END SIDE CLASS 1 PAVEMENT PERM. MARKING PAINT 4" TYPE P BEADS (LF) A1889 - ROUTE KK 643+94 651+51 CL 1514 L0548 - ROUTE D 393+41 398+05 CL 928 TOTAL 928 N0727 - ROUTE B 419+67 426+87 CL 1440 419+67 426+87 RT 255	PAVEMENT MARKING							
STATION STATION				PERM. 4" YELLOW				
MARKING PAINT 4" TYPE P BEADS (LF) A1889 - ROUTE KK 643+94 651+51 CL	BEGIN	END	SIDE	CLASS 1	REMOVAL			
MARKING PAINT 4" TYPE P BEADS (LF) A1889 - ROUTE KK 643+94 651+51 CL 1514 L0548 - ROUTE D 393+41 398+05 CL 928 TOTAL 928 N0727 - ROUTE B 419+67 426+87 CL 1440 419+67 426+87 RT 255	STATION	STATION		PAVEMENT	PERM.			
TYPE P BEADS (LF) A1889 - ROUTE KK 643+94 651+51 CL		317111011						
(LF) (LF) (LF) (LF) (A1889 - ROUTE KK (B43+94 651+51 CL 1514 (B548 - ROUTE D (B548 - ROUTE B (
A1889 - ROUTE KK 643+94 651+51 CL 1514 TOTAL 1514 L0548 - ROUTE D 393+41 398+05 CL 928 TOTAL 928 N0727 - ROUTE B 419+67 426+87 CL 1440 419+67 426+87 RT 255								
643+94 651+51 CL 1514 TOTAL 1514 L0548 - ROUTE D 393+41 398+05 CL 928 TOTAL 928 N0727 - ROUTE B 419+67 426+87 CL 1440 419+67 426+87 RT 255				(LF)	(LF)			
TOTAL 1514 L0548 - ROUTE D 393+41 398+05 CL 928 TOTAL 928 N0727 - ROUTE B 419+67 426+87 CL 1440 419+67 426+87 RT 255	A1889 - R	OUTE KK						
L0548 - ROUTE D 393+41	643+94	651+51	CL	1514				
393+41 398+05 CL 928 TOTAL 928 N0727 - ROUTE B 419+67 426+87 CL 1440 419+67 426+87 RT 255			TOTAL	1514				
TOTAL 928 N0727 - ROUTE B 419+67	L0548 - R	OUTE D						
N0727 - ROUTE B 419+67 426+87 CL 1440 419+67 426+87 RT 255	393+41	398+05	CL	928				
419+67 426+87 CL 1440 419+67 426+87 RT 255			TOTAL	928				
419+67 426+87 RT 255	N0727 - R	OUTE B						
122.2.	419+67	426+87	CL	1440				
	419+67	426+87	RT		255			
419+67 426+87 LT 255	419+67	426+87	LT		255			
TOTAL 1440 510			TOTAL	1440	510			
N0826 - ROUTE JJ	N0826 - R	OUTE JJ						
122+36 127+57 CL 1042	122+36	127+57	CL	1042				
122+36 127+57 RT 80	122+36	127+57	RT		80			
122+36 127+57 LT 80	122+36	127+57	LT		80			
TOTAL 1042 160			TOTAL	1042	160			
PAY TOTAL 4924 670		PA	Y TOTAL	4924	670			

EΝ	T MARKING	
	PERM. 4" YELLOW	
E	CLASS 1	REMOVAL
	PAVEMENT	PERM.
	MARKING PAINT	4"
	TYPE P BEADS	PAINT
	(LF)	(LF)
	1514	
TAL	1514	
	928	
TAL	928	
	1440	
		255
		255
TAL	1440	510
	1042	
		80
		80
TAL	1042	160
ГΛΙ	4024	670

			PAVE	MENT		
					GRAVEL (A)	
BEGIN	END	SIDE	TYPE 1	OPTIONAL	OR	REMARKS
STATION	STATION		AGGREGATE	PAVEMENT	CRUSHED	
			BASE (4")		STONE (B)	
			(SY)	(SY)	(SY)	
A1889 - F	OUTE VV		(31)	(31)	(31)	
644+44	646+38	CL	541	541		
650+38	651+01	CL	176	162		
645+12	645+94	LT	170	102	141	SALEM AVE.
645+67	646+21	RT			68	PRIVATE DR
646+06	646+62	RT			81	GUARDRAIL
645+69	646+55	LT			94	GUARDRAIL
650+23	651+12	RT			90	GUARDRA I L
650+16	651+66	LT			108	GUARDRA I L
		TOTAL	717	703	582	
L0548 - F	ROUTE D			•		
393+91	394+36	CL	119	109		
396+89	397+55	CL	124	113		
392+92	394+56	RT			111	GUARDRA I L
393+55	394+56	LT			64	GUARDRA I L
396+89	397+90	RT			74	GUARDRA I L
396+89	398+53	LT			97	GUARDRA I L
		TOTAL	243	222	346	
N0727 - F						
422+22	422+93	CL	166	166		
424+56	424+96	CL	101	92		
		TOTAL	267	258		
N0826 - F						
123+65	124+22	CL	145	132		
125+93	126+42	CL	121	110		
		TOTAL	266	242		
	РА	Y TOTAL	1493	1425	928	

MOB	LIZATION
1	LUMP SUM

CONTRACTOR FURNISHED SURVEYING & STAKING 1 LUMP SUM

F	FLOWABLE BACKFILL													
BEGIN	END	QTY	REMARKS											
STATION	STATION	(CY)												
L0548 - ROUT	E D													
396+85	396+89	2	END BENT 4											
	TOTAL	2												
	PAY TOTAL	2												

	EADT	HWODK	
	EARI	HWORK	
			LINEAR
BEGIN	END	SIDE	GRADING
STATION	STATION		CLASS 2
			(STA)
A1889 - R	OUTE KK		
644+44	646+61	LT/RT	4.3
650+16	651+01	LT/RT	1.7
		TOTAL	6
L0548 - R	OUTE D		
393+91	394+56	LT/RT	1.3
396+89	397+55	LT/RT	1.3
		TOTAL	2.6
N0727 - R	OUTE B		
422+22	423+13	LT/RT	1.8
424+36	424+96	LT/RT	1.2
		TOTAL	3
N0826 - R	OUTE JJ		
123+65	124+42	LT/RT	1.5
125+73	126+42	LT/RT	1 . 4
		TOTAL	2.9
		PAY TOTAL	14.5



ELECTHONICALLY.											
DATE PE	PEPARED / 2025										
4/23	/2025										
ROUTE	STATE										
VAR. MO											
DISTRICT	SHEET NO.										
NW 3											
COU	NTY										
VAR	IOUS										
JOB	NO.										
JNW	0010										
CONTRA	CT ID.										
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	BR	IDG	SE 1	VO.	
DESCRIPTION					





Column C			SIGN	IS		CONCRETE	S	TRU	CTUR	AL	STEE	L	ΡI	PE	POST	ΓS*		BACK	ING	U-					ATED S	QUAI	RE S					L	FFECTIVE: 07-01-2024
March Marc	902	SIGNAL SIG	SNS TARIILA	TED ON D.374 SHEET		FOOTINGS			POS	15*								BARS) ^{* *}		+				:						HOR S	BREAK -	DEMARKS
1	902	STOWAL STO	I ABOLA	TEB ON D-37A SHEET	Т	LIMIDEDDED	1	Т	Т		Тот	AI	-		-	ТОТАІ				F 031	POST					E POST		TOTAL					
March Marc	SIGN	SIGN	STATION		SIGN		POST	TPOST	POST	ost L			IPEPO	OSTPO	OST LBS			X 3/8	BARS		NO.1	NO . 2											
1		SIZE								O.3 F	ER ITEM	NO.S	IZEN	O. 1 N	O. 2 PEF	R ITEM NO	. AT	2.55 l	LBS/FT	1										ITEM NO.	ITEM NO.	ITEM NO.	
1			LOG MILE		SHT	9031010	NO.															9031270A		9031273A	9031274			9031280		9031281A	9031285	9031241	I TEMS
P P P P P P P P P P					NO.	CY		LF	LF	LF	LB	S	IN I	LF I	LF	LBS	EACH	IN.	LF LBS	LF			EACH	EACH	EACH	LF	LF	LF	EACH	EACH	EACH	EACH	
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327395 - (22-25) May 3 - (12-25) May 3 - (12-2																					9.5												
27-20 26-56 MR 5, 19 T			424+36	HWY B, 12' LT																	9.5	10											
127-509																						10											
207326 424-15 807 8, 33° LT																																	
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*BREAKAWAY ASSEMBLY IS INCIDENTAL FOR STRUCTURAL STEEL AND PIPE POSTS.							┨					-					1		**		4		+		1	\dashv	-						
					/ I / L	I	 *BF	REAKA'	WAY AS	SEMB	LY IS I	INCID	ENTAL	_ FOR	STRUC	TURAL S	TEEL A	ND PIF		1	1	240	1	1	1	1						I	

SUMMARY OF QUANTITIES SHEET 3 OF 5

				9	STAND	ARD S	I GN	ASSEM	1BLIE:	S					
			SIGN	, TYPE	E, DES	IGNAT	ION, S	SIZE &	NUMBE	R OF	EACH		I	ı	
	STATION														
SIGN	OR	LOCATION													
NO.	LOG MILE														
			OM3 - L	OM3 - R											
		HWY JJ, 15' RT HWY JJ, 15' LT	1	1											
	124+02	HWY JJ, 13.5' RT	1	1											
	124+22	HWY JJ, 13.5' LT	1												
	124+42	HWY JJ, 12' RT	1	1											
	124+42	HWY JJ, 12' LT HWY JJ, 12' RT	1	1											
	125+73	HWY JJ, 12' LT	1												
	125+93	HWY JJ, 13.5' RT		1											
	125+93	HWY JJ, 13.5' LT HWY JJ, 15' RT	1	1											
	126+13	HWY JJ, 15' LT	1												
	422+73	HWY B. 15' RT		1											
	422+73	HWY B, 15 LT HWY B. 13.5 RT	1	1											
	422+93	HWY B, 13.5' LT	1	1											
	423+13	HWY B. 12' RT		1											
		HWY B, 12' LT HWY B. 12' RT	1	1											
		HWY B, 12 LT	1	1											
	424+56	HWY B. 13.5' RT		1											
		HWY B, 13.5 LT	1												
	424+76	HWY B. 15' RT HWY B, 15' LT	1	1											
	724170	11#1 B, 15 E1	1												
		TOTALS	12	12											

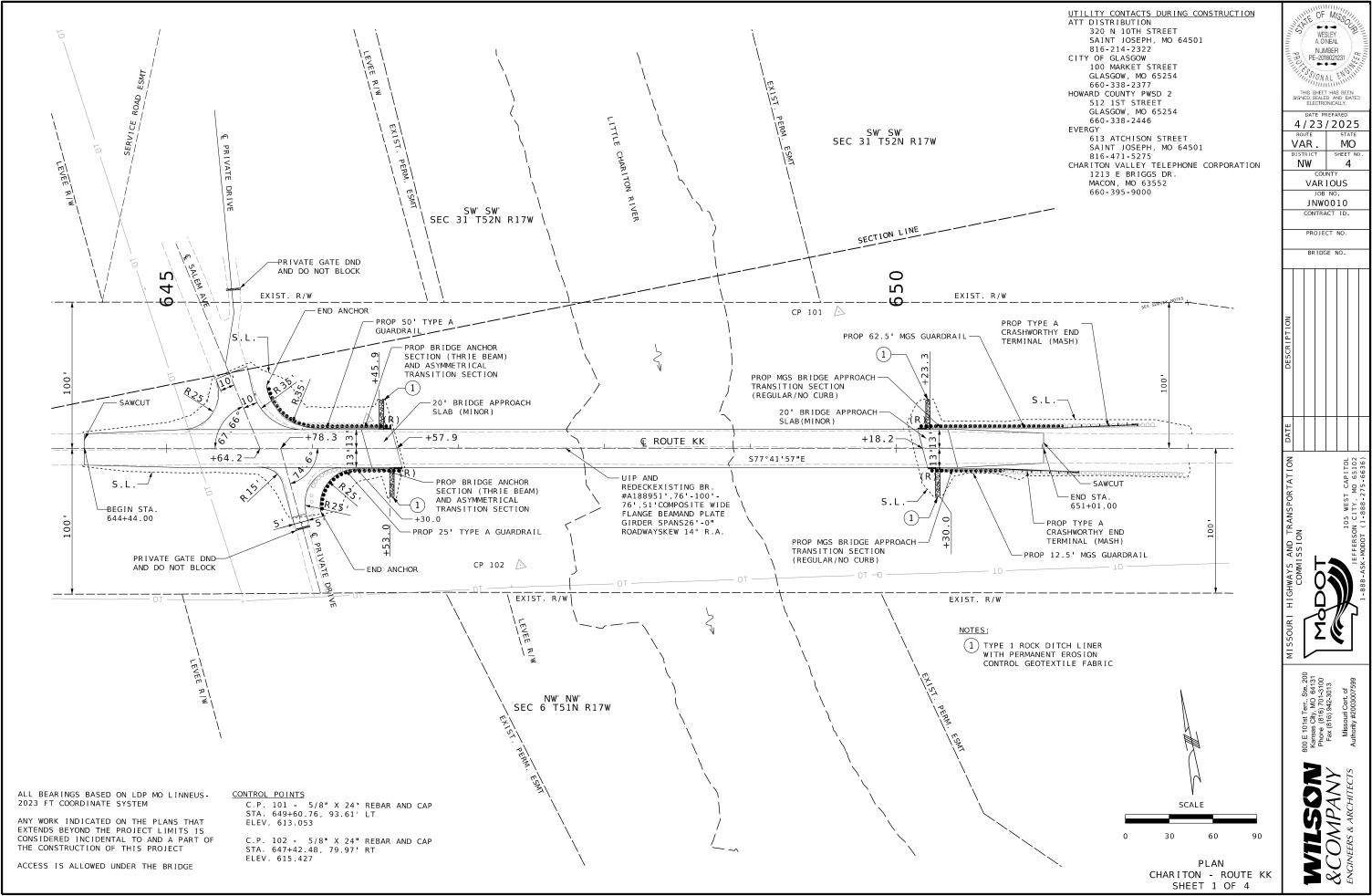
					SUMMARY 	TYPE & S	EFFECTIV	
		SIGN				FLAT SHEET		STRUCTURA
STANDA	RD OR SPECIAL		NO.	SIGN	FLAT SHEET	FLUORESCENT		
	DESIGNATION		EACH		SH	SHF*	ST	STF*
31011	DESTONATION		LACII	JIZE	ITEM NO.			1
		NO.				ITEM NO.	ITEM NO.	ITEM NO.
					9035004A	9035069A	9035011A	9035071A
	TYPE 3 OBJECT MARKER, RIGHT	T	12	12"X36"		36.00		
OM3 - L	TYPE 3 OBJECT MARKER, LEFT		12	12"X36"		36.00		
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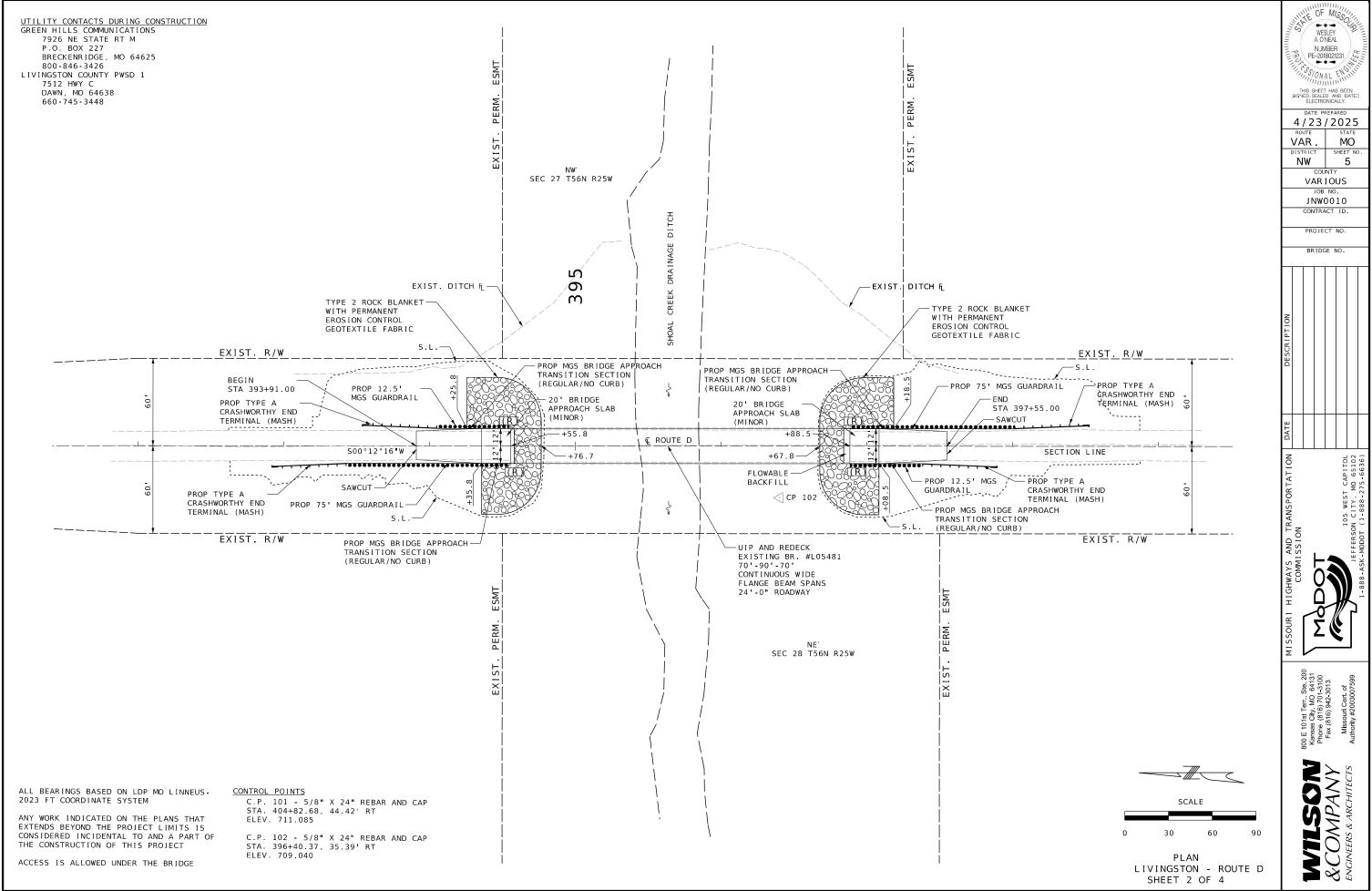
OF M/SSOWAL WESLEY A ONEAL NUMBER PE-2018021231

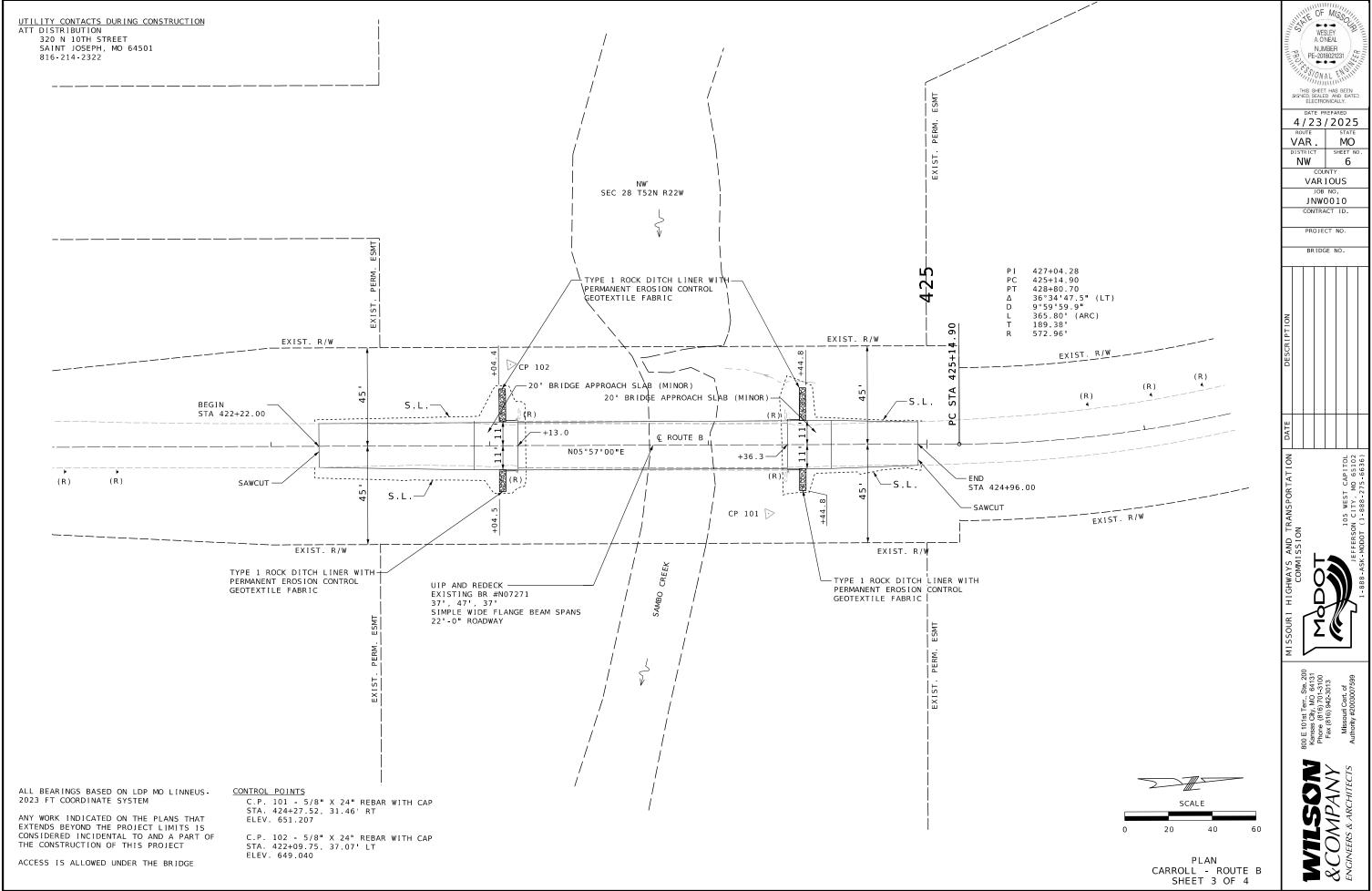
THIS SHEET HAS BEEN SIGNED SALED AND DATED SHEED AND DATED SHEET CHRONICALLY. DATE PREPARED 4/23/2025 VAR . STATE DISTRICT SHEET NO. VARIOUS JOB NO.
JNW0010
CONTRACT ID. PROJECT NO. BRIDGE NO. 800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013 Missouri Cert. of Authority #2003007599

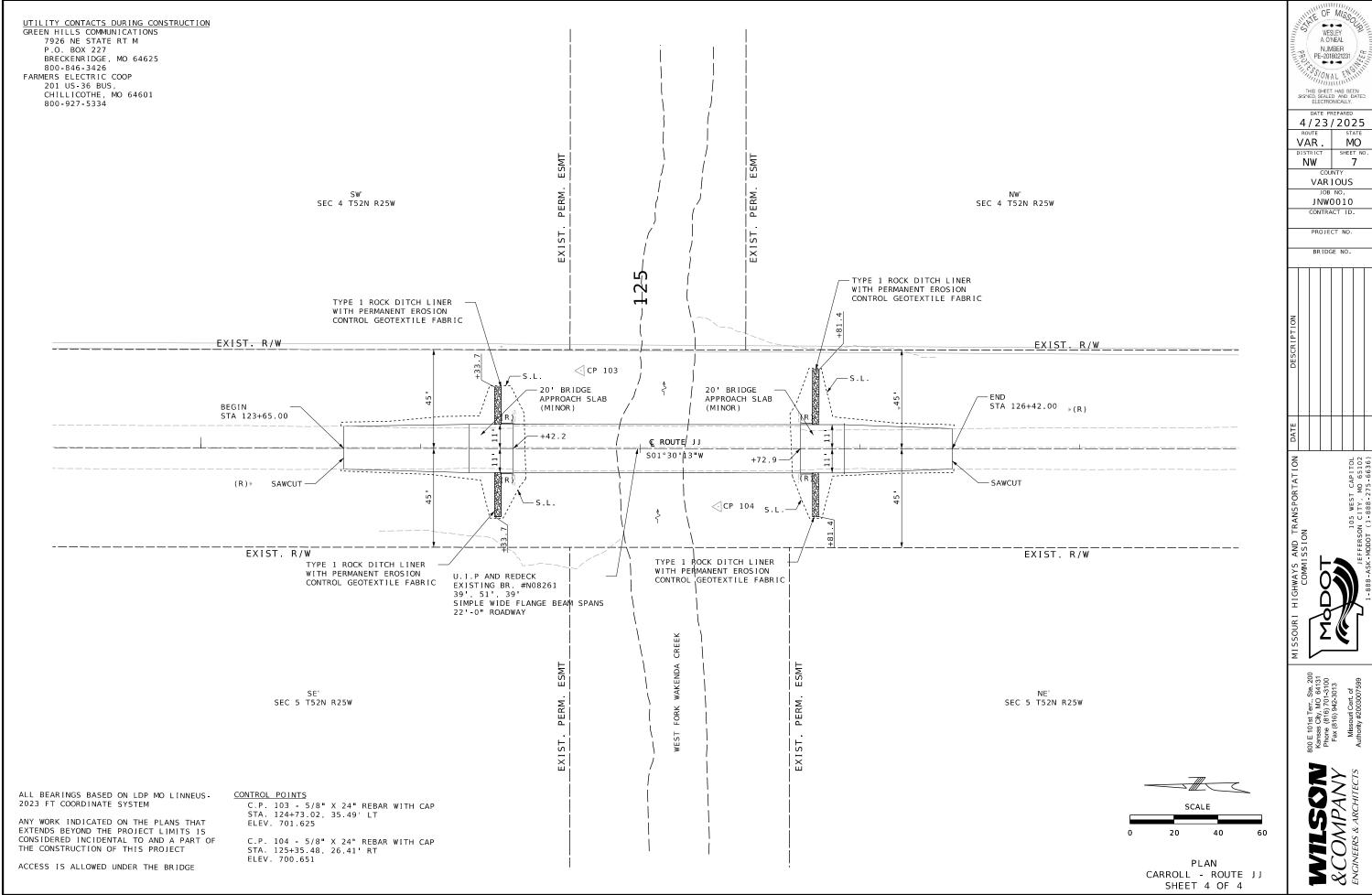
SUMMARY OF QUANTITIES SHEET 4 OF 5

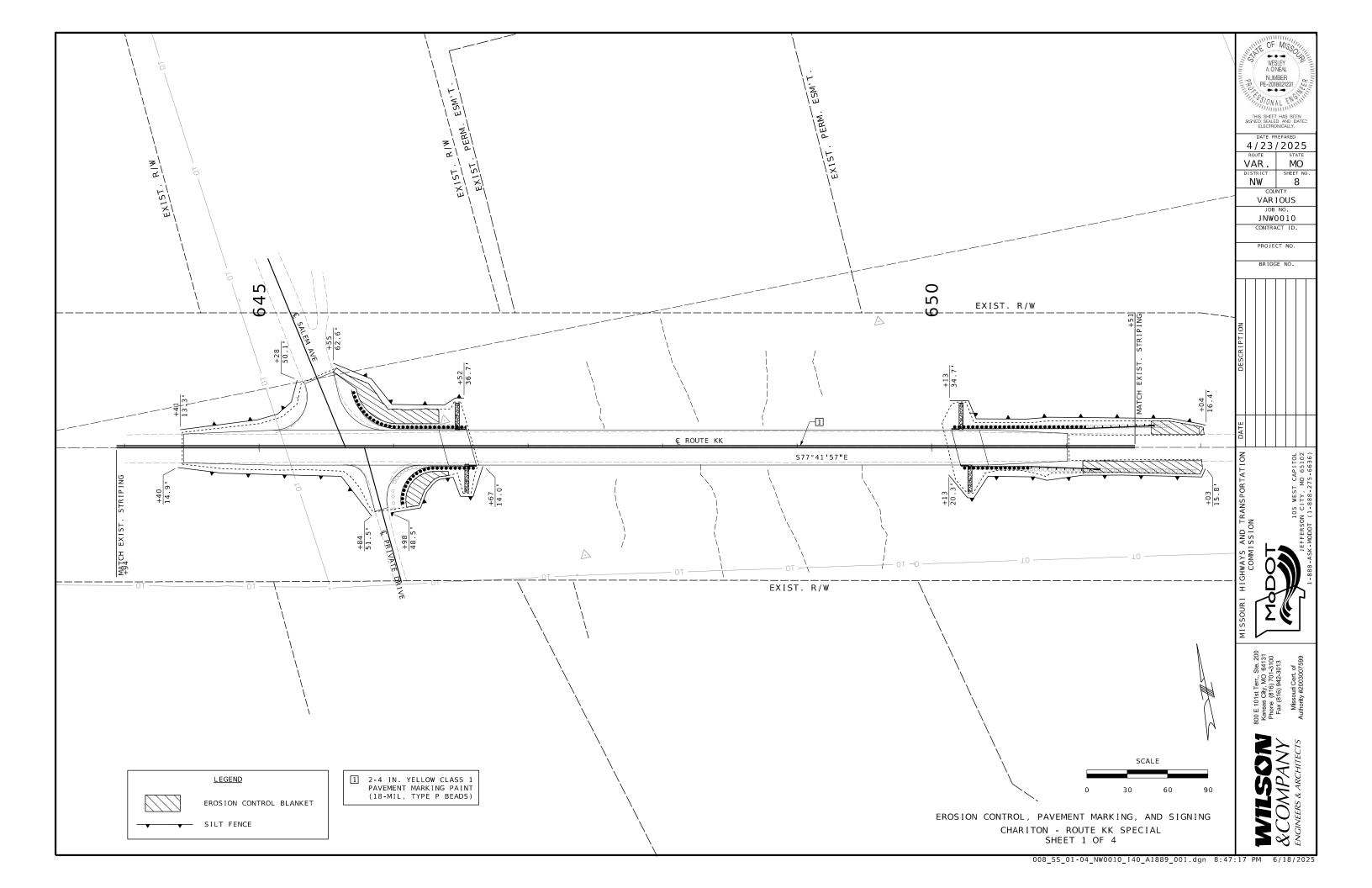
															THE OF MISSING
				TOTAL SIG						TOTAL				EFFECTIVE: 07-01-2025	SAF COL
			AREA RELOC	I			1		Y TOTAL RELO		NUM .		ITEM		WESLEY A. O'NEAL
SIGN	IN.	SQ.FT. EACH	SQ FT EACH		DESCRIPTION	SIGN	IN.	SQ.FT. EAG	CH SQ FT EACH			DESCRIPTION	NUMBER	- • • • • • • • • • • • • • • • • • • •	NUMBER PE-2018021231 & 3
WO1-1L	48X48	16 00	WARNING SI	IGNS	TURN (SYMBOL LEFT)	E05-1	36X48	12.00	GUIDE S	IGNS		GORE EXIT	6122008 6122009		- 300 / NS
WO1 - 1R	48X48				TURN (SYMBOL RIGHT)	E05-2		12.00				EXIT OPEN	6122010		- TONAL CINE
WO1-2L	48X48				CURVE (SYMBOL LEFT)	E05-2a		12.00			_	EXIT CLOSED	6122012		SIGNED, SCALED AND DATES
WO1 - 2R	48X48				CURVE (SYMBOL RIGHT)	GO20-1		10.00			_	ROAD WORK NEXT XX MILES	6122014		
WO1 - 3L WO1 - 3R	48X48 48X48				REVERSE TURN (SYMBOL LEFT) REVERSE TURN (SYMBOL RIGHT)	GO20-2 GO20-4		8.00 4.50				PILOT CAR FOLLOW ME	6122017		4/22/2025
WO1-4L	48X48				REVERSE CURVE (SYMBOL LEFT)	GO20-4a					_	PILOT CAR IN USE WAIT & FOLLOW	6122020		ROUTE STATE
WO1-4R	48X48				REVERSE CURVE (SYMBOL RIGHT)	GO20-4a					_	PILOT CAR IN USE WAIT & FOLLOW	6122030		VAR MO DISTRICT SHEET NO.
WO1 4bb	48X48 48X48				DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)	GO20-5al	_					WORK ZONE (PLAQUE) END DETOUR	6123001		NW 3
WO1-4bR WO1-4cL	48X48				DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT) TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)	MO4-8a		12.00				DETOUR (LEFT)	6161008 6161012		COUNTY VAR I OUS
WO1-4cR	48X48				TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)	MO4 - 9R		12.00			_	DETOUR (RIGHT)	6161013		JOB NO.
WO1-6	60X30				HORIZONTAL ARROW (SYMBOL)	MO4-9P		4.00			_	STREET NAME (PLAQUE)	6161014		JNW0010
WO1-6a	72X36				HORIZ, ARROW (SYMBOL ON PERMANENT BARRICADE)	MO4 - 10L MO4 - 10R		6.00			_	DETOUR ARROW (LEFT)	6161025		CONTRACT ID.
WO1-7 WO1-7a	60X30 72X36				DOUBLE HEAD HORIZONTAL ARROW (SYMBOL) DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.	MO4-10R	48818	6.00	REGULATORY	SIGNS		DETOUR ARROW (RIGHT)	6161030 6161033		PROJECT NO.
WO1-8	18X24				CHEVRON (SYMBOL)	R1-1	48X48	13.25		2.0113		STOP	6161040		PRIDCE NO
WO1-8a	30X36				CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)	R1-2	48TRI					YIELD	6161047		BRIDGE NO.
WO3 - 1	48X48				STOP AHEAD (SYMBOL)	R1-2a		9.00			_	TO ONCOMING TRAFFIC (PLAQUE)	6161055		
WO3 - 2 WO3 - 3	48X48 48X48				YIELD AHEAD (SYMBOL) SIGNAL AHEAD (SYMBOL)	R1-3P R2-1		12.00			_	ALL WAY (PLAQUE) SPEED LIMIT XX	6161070 6161095		-
WO3 - 4	48X48				BE PREPARED TO STOP	R3-1		16.00				NO RIGHT TURN (SYMBOL)	1202033	CHANGEABLE MESSAGE SIGN,	-
WO3 - 5	48X48				SPEED LIMIT AHEAD	R3-2		16.00			_	NO LEFT TURN (SYMBOL)	6161096		_z
WO4 - 1L	48X48				MERGE (SYMBOL FROM LEFT)	R3-3		9.00				NO TURNS	6161000	CHANGEABLE MESSAGE SIGN WITHOUT COMM.	
WO4-1R WO4-1aL	48X48 48X48				MERGE (SYMBOL FROM RIGHT) MERGE (LEFT)	R3-4 R3-7L		16.00			_	NO U-TURN (SYMBOL) LEFT LANE MUST TURN LEFT	61610984	A INTERFACE - CONTRACTOR FURNISHED/RETAIN CHANGEABLE MESSAGE SIGN WITH COMM.	
WO4 1aE	48X48				MERGE (RIGHT)	R3 - 7R		6.25				RIGHT LANE MUST TURN RIGHT	6161099		D SSCE
WO5 - 1	48X48	16.00			ROAD/BRIDGE/RAMP NARROWS	R4-1		12.00				DO NOT PASS	6162000 <i>A</i>		
WO5 - 3	48X48				ONE LANE BRIDGE	R4-2		12.00				PASS WITH CARE	6162002		
WO5 - 5 WO6 - 1	48X48 48X48				NARROW LANES DIVIDED HIGHWAY (SYMBOL)	R4-7a R4-8a		12.00			_	KEEP RIGHT (HORIZONTAL ARROW) KEEP LEFT (HORIZONTAL ARROW)	6173600E	TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED	
WO6 - 2	48X48				DIVIDED HIGHWAY END (SYMBOL)	R5 - 1		6.25			_	DO NOT ENTER	01730000	TEMPORARY TRAFFIC BARRIER	
WO6 - 3	48X48	16.00			TWO WAY TRAFFIC (SYMBOL)	R5-1a	36X24	6.00				WRONG WAY	6173602E	CONTRACTOR FURNISHED/COMMISSION RETAIN	D _w
WO7 - 3a	30X24				NEXT XX MILES (PLAQUE)	R6-1L		6.75				ONE WAY ARROW (LEFT)	61740004		<u>-</u> DAT
WO8 - 1 WO8 - 2	48X48 48X48				BUMP DIP	R6-1R R6-2L		5.00			_	ONE WAY ARROW (RIGHT) ONE WAY (LEFT)	61750104	RELOCATING TEMPORARY TRAFFIC BARRIER TEMPORARY TRAFFIC BARRIER	
WO8 - 3	48X48				PAVEMENT ENDS	R6-2R		5.00			_	ONE WAY (RIGHT)	61760008		ISPORTATION WEST CAPITOL WEST CAPITOL MEST CAPITOL MEST CAPITOL MEST CAPITOL MEST CAPITOL MEST CAPITOL
WO8 - 4	48X48	16.00			SOFT SHOULDER	R9-9	24X12	2.00				SIDEWALK CLOSED		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION	AT I
WO8 - 5	48X48				SLIPPERY WHEN WET (SYMBOL)							SIDEWALK CLOSED AHEAD,	6177000E		JRT. C
WO8-6 WO8-6c	48X48 48X48				TRUCK CROSSING TRUCK ENTRANCE	R9-11L	24X18	3.00				(ARROW LEFT) CROSS HERE SIDEWALK CLOSED AHEAD,	6208064 <i>A</i> 9029400		SPC WES
WO8 - 7	36X36				LOOSE GRAVEL	R9-11R	24X18	3.00				(ARROW RIGHT) CROSS HERE	9029401		AN 05.0
WO8-7a	36X36	9.00			FRESH OIL / LOOSE GRAVEL	R10-6		6.00				STOP HERE ON RED (45^ ARROW)			D TRANS ION 105 W 105 W 105 W
WO8 - 9	48X48				LOW SHOULDER	R11-2	48X30	10.00 9	90.00			ROAD CLOSED			——1zv ∷ō
WO8 - 11 WO8 - 12					UNEVEN LANES NO CENTER LINE	- R11-3a	60X30	12.50 6	75.00		- 1	ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY			A11 Signal
WO8-12					GROOVED PAVEMENT	R11-4		12 50 6				ROAD CLOSED TO THRU TRAFFIC			
WO8-15P	30X24	5.00			MOTORCYCLE (PLAQUE)	CONST - 3						FINE SIGN			
WO8 - 17L					SHOULDER DROP-OFF (SYMBOL LEFT)	CONST - 3	X 56X12	4.67	MICCELLANGO	110 01011		SPEEDING/PASSING (PLATE)			→Ĕ ひ 派 ³
WO8 - 17R WO8 - 17P					SHOULDER DROP-OFF (SYMBOL RIGHT) SHOULDER DROP-OFF (PLAQUE)	CONST-5	48736	12 00	MISCELLANEO	US 51GN		POINT OF PRESENCE			
W10-1	42RND.				RAILROAD CROSSING	CONST-5					_	POINT OF PRESENCE			[a Z (6
WO12-1	24X24	4.00			DOUBLE DOWN ARROW (SYMBOL)	CONST-8					_	WORK ZONE NO PHONE ZONE			iss 🗲 📞
WO12-2	48X48				LOW CLEARANCE (SYMBOL)										Σ
W012-2x W012-2a					LOW CLEARANCE (PLAQUE) OVERHEAD LOW CLEARANCE (FEET AND INCHES)	-	1	+ +							0
	120X60				LOW CLEARANCE XX FT XX IN XX MILES AHEAD	1									3. 20 4131 100 13
	120X60	50.00			WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD										900 E 101st Terr., Ste. 200 Kansas City, Mo. 64131 Phone (816) 701-3100 Fax (816) 942-3013 Missouri Cert. of Authority #2003007599
WO13-1	30X30				ADVISORY SPEED (PLAQUE)										Terr ty, M 16) 7 3) 94; iri Ce 1200;
WO16-2 WO16-3	30X24 30X24				XXX FEET (PLAQUE) X MILE (PLAQUE)										01st is Cil e (8' (816 ssou rity #
WO20-1	48X48				ROAD/BRIDGE/RAMP WORK AHEAD	1									0 E 1 anse hon Fax Mi
WO20-2	48X48				DETOUR AHEAD										8 × π ×
WO20-3		16.00 8	128.00		ROAD CLOSED AHEAD	616-10		N 616115	TOTAL						
WO20-3	48X48 48X48		128.00	208	ROAD CLOSED 500 FT RIGHT/CENTER/LEFT LANE CLOSED AHEAD	616-10		N SIGNS	496	TOTAL					
WO20-5a					2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD	RELOCA		I GNS		0					
WO20-6a					RIGHT/CENTER/LEFT LANE CLOSED		<u> </u>								X X 5
WO20-7a					FLAGGER (SYMBOL)										TS OMP
WO21-2	36X36 48X48				FRESH OIL SHOULDER WORK / SHOULDER WORK AHEAD	-									\(\frac{7}{8}\) \(\frac{5}{8}\)
WO21-5 WO22-1	48X48 48X48				BLASTING ZONE AHEAD										
WO22-2					TURN OFF 2-WAY RADIO AND PHONE									CLIMMANDY OF OURNITTIES	
WO22-3					END BLASTING ZONE									SUMMARY OF QUANTITIES SHEET 5 OF 5	
GO22-1	21X15	2.19			WET PAINT (ARROW PIVOTS)	J								311EE1 3 01 3	

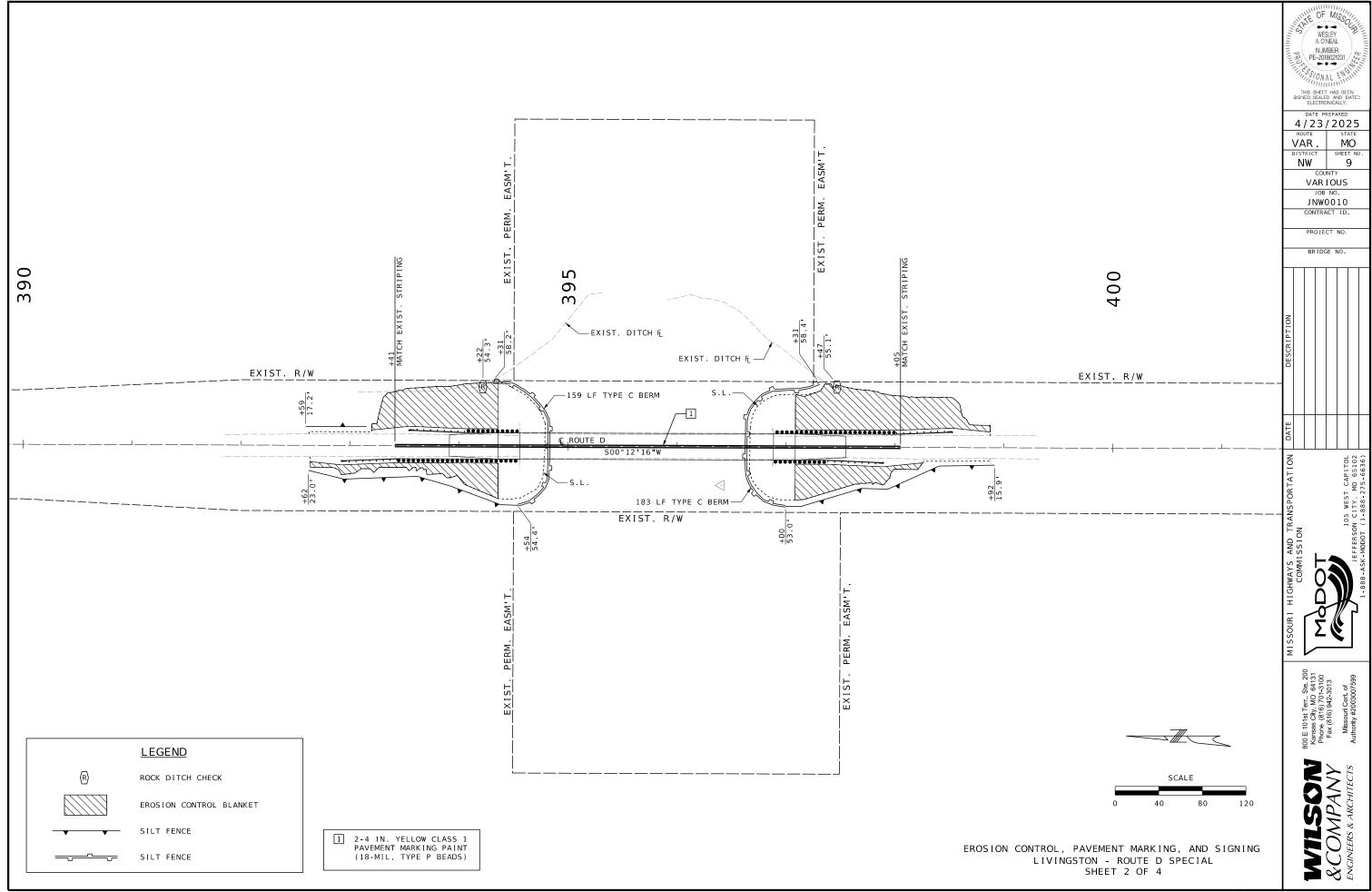


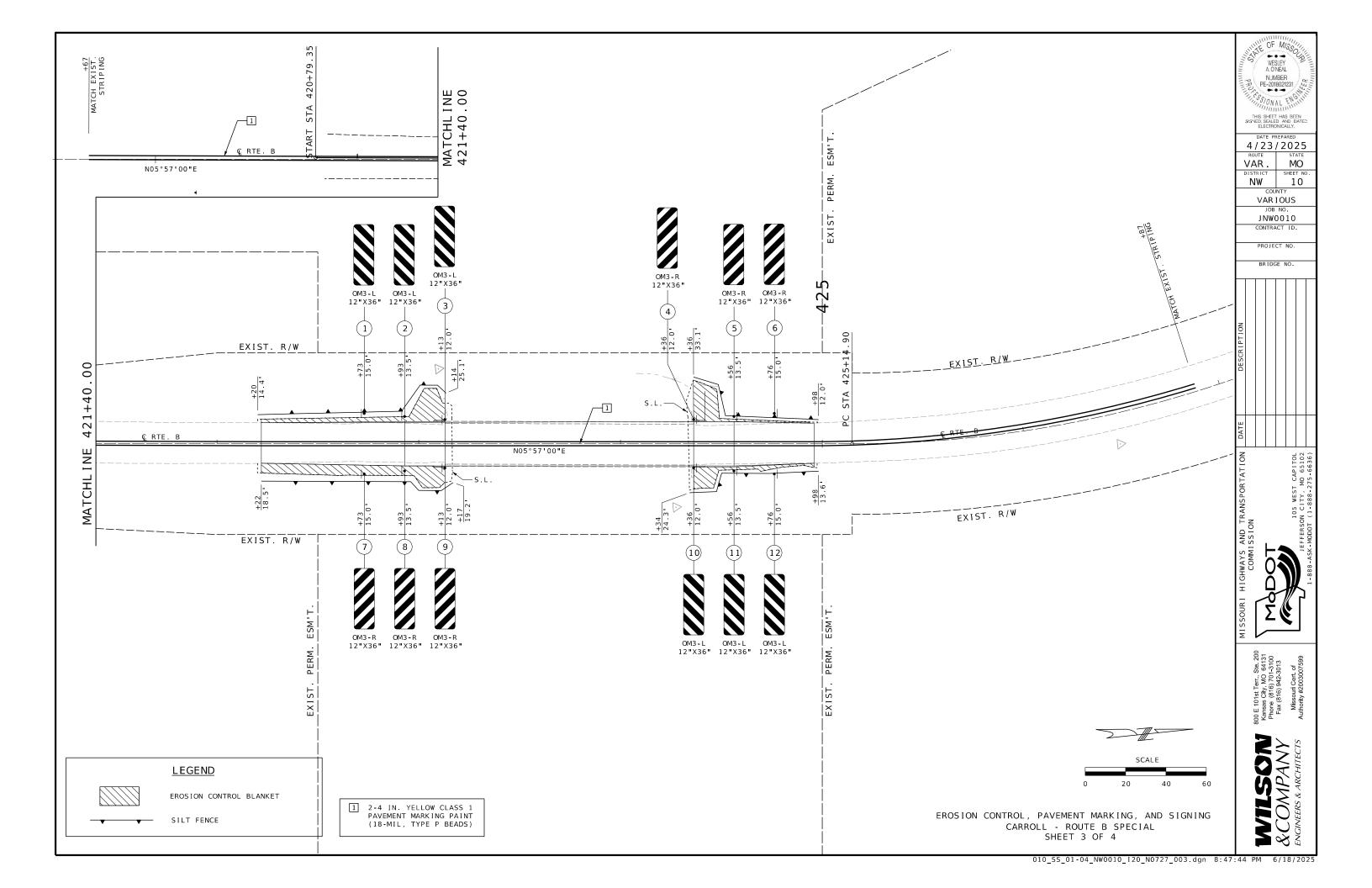


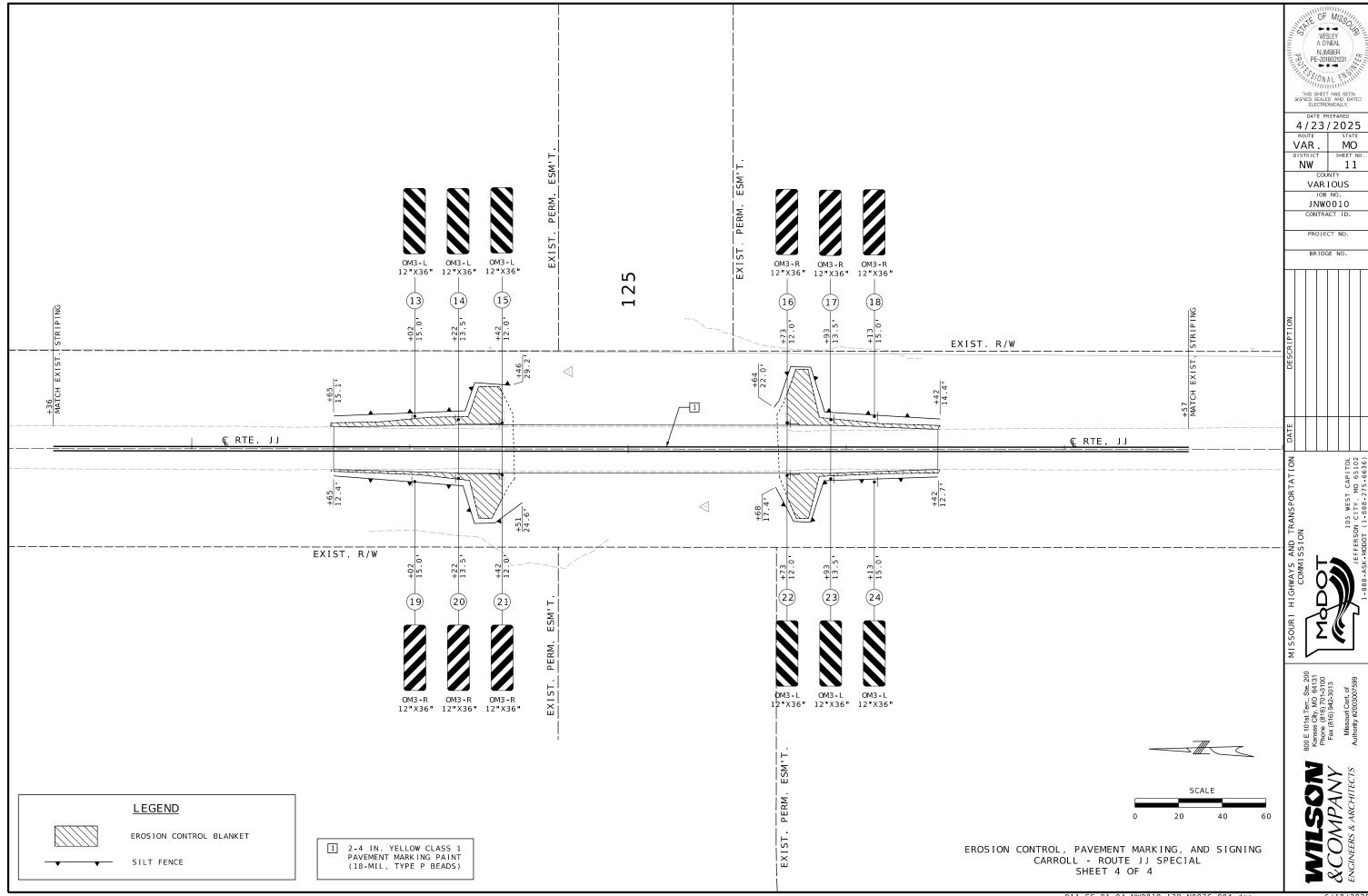












• SIGN (SINGLE SIDED)

- BARRICADE

WORK AREA





ROAD CLOSED

8 MILES AHEAD
LOCAL TRAFFIC ONLY

R11-3a

ROAD CLOSED 1/2 MILES AHEAD LOCAL TRAFFIC ONLY

R11-3a

ROAD CLOSED TO THRU TRAFFIC

R11-4

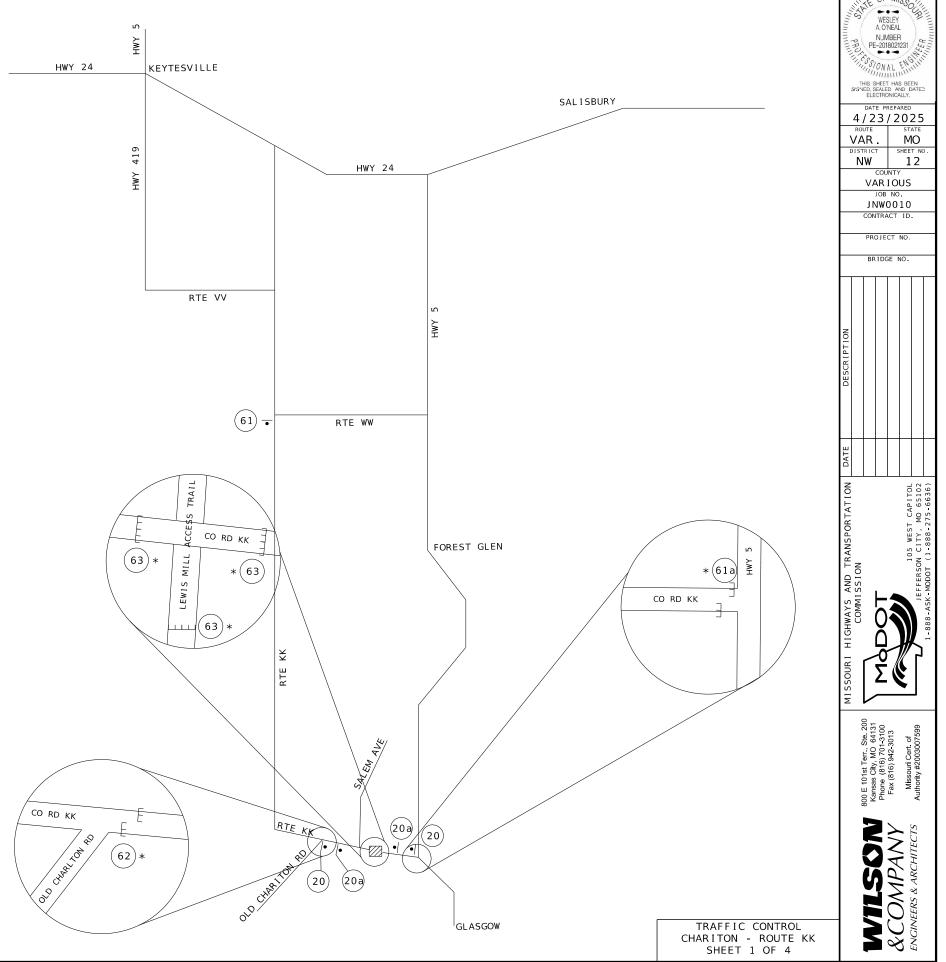
ROAD CLOSED

R11-2

NOTES:

ANY EXISTING SIGNS THAT CONFLICT WITH THIS TRAFFIC CONTROL PLAN SHALL BE COVERED.

* SIGN MOUNTED TO BARRICADE



SIGN (SINGLE SIDED)

E BARRICADE

WORK AREA



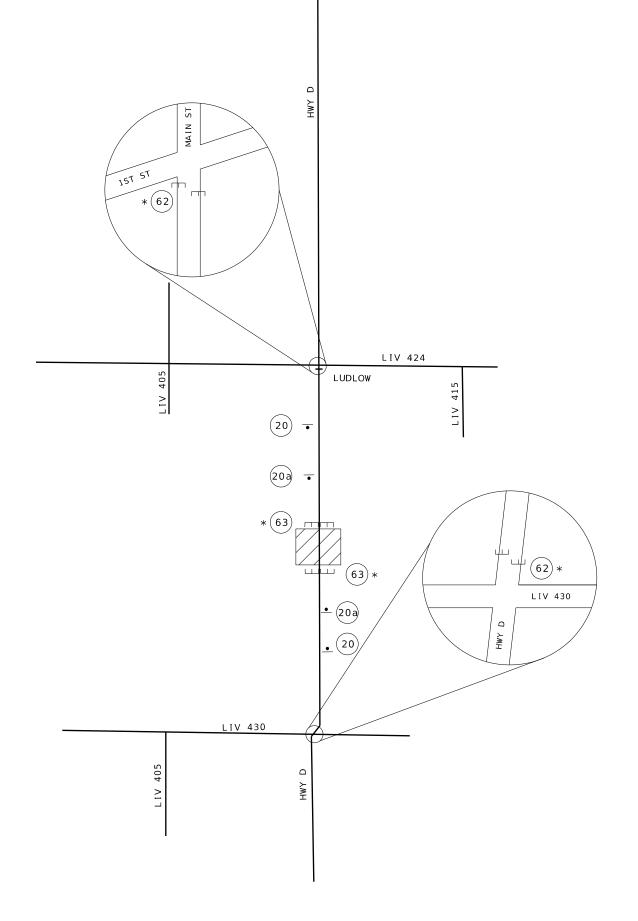


ROAD CLOSED TO THRU TRAFFIC

62

ROAD **CLOSED**

63





ANY EXISTING SIGNS THAT CONFLICT WITH THIS TRAFFIC CONTROL PLAN SHALL BE COVERED.

* SIGN MOUNTED TO BARRICADE

TRAFFIC CONTROL LIVINGSTON - ROUTE D SHEET 2 OF 4

WESLEY A ONEAL NUMBER PE-2018021231

4/23/2025

VARIOUS

JOB NO.
JNW0010
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013

MO

13

VAR.

NW

• SIGN (SINGLE SIDED)

F BARRICADE

WORK AREA



ROAD CLOSED 500 FT

ROAD CLOSED
7 MILES AHEAD
LOCAL TRAFFIC ONLY

R11-3a

ROAD CLOSED
5 MILES AHEAD
LOCAL TRAFFIC ONLY

R11-3a

ROAD CLOSED TO THRU TRAFFIC

62

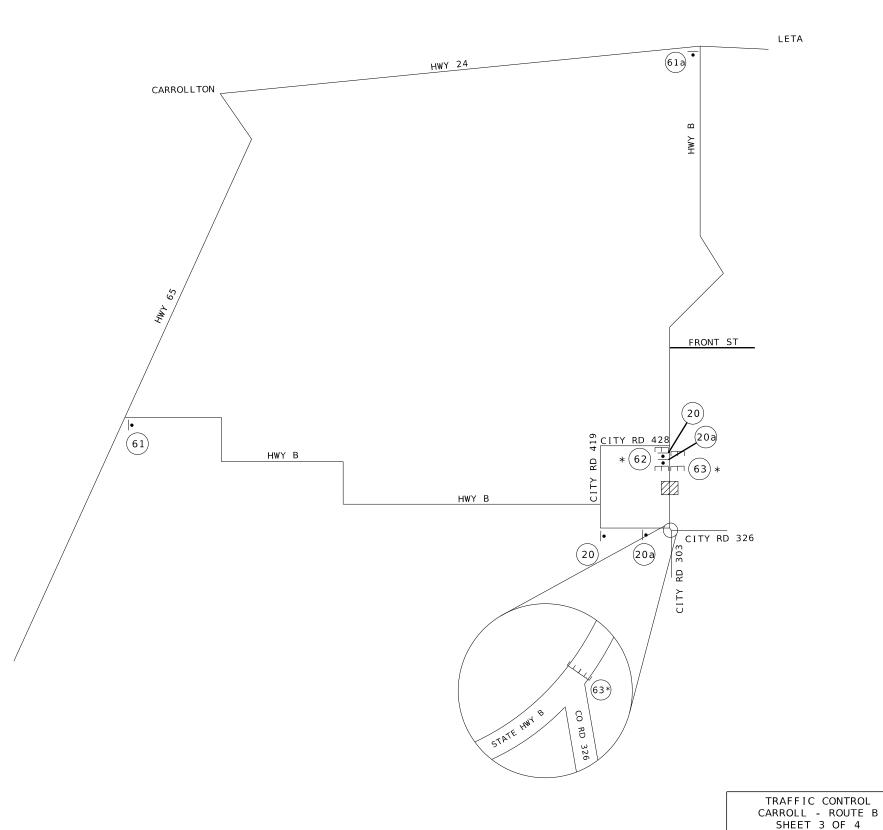
ROAD CLOSED

R11-2

NOTES:

ANY EXISTING SIGNS THAT CONFLICT WITH THIS TRAFFIC CONTROL PLAN SHALL BE COVERED.

* SIGN MOUNTED TO BARRICADE



PROJECT NO.

BRIDGE NO.

WESLEY A ONEAL NUMBER PE-2018021231

4/23/2025

VARIOUS

JNW0010 CONTRACT ID.

MO

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VAR.

NW

SSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION
MODOT

105 WEST CAPITOL
LEFFERSON CITY, MO 65102

800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013

WILSON SCOMPANY SOMERS & ARCHITECTOR

• SIGN (SINGLE SIDED)

F BARRICADE

WORK AREA



ROAD **CLOSED** 500 FT WO20-3 20a

ROAD CLOSED 3 MILES AHEAD LOCAL TRAFFIC ONLY

R11-3a

61

ROAD CLOSED 7 MILES AHEAD LOCAL TRAFFIC ONLY

> R11-3a 61a

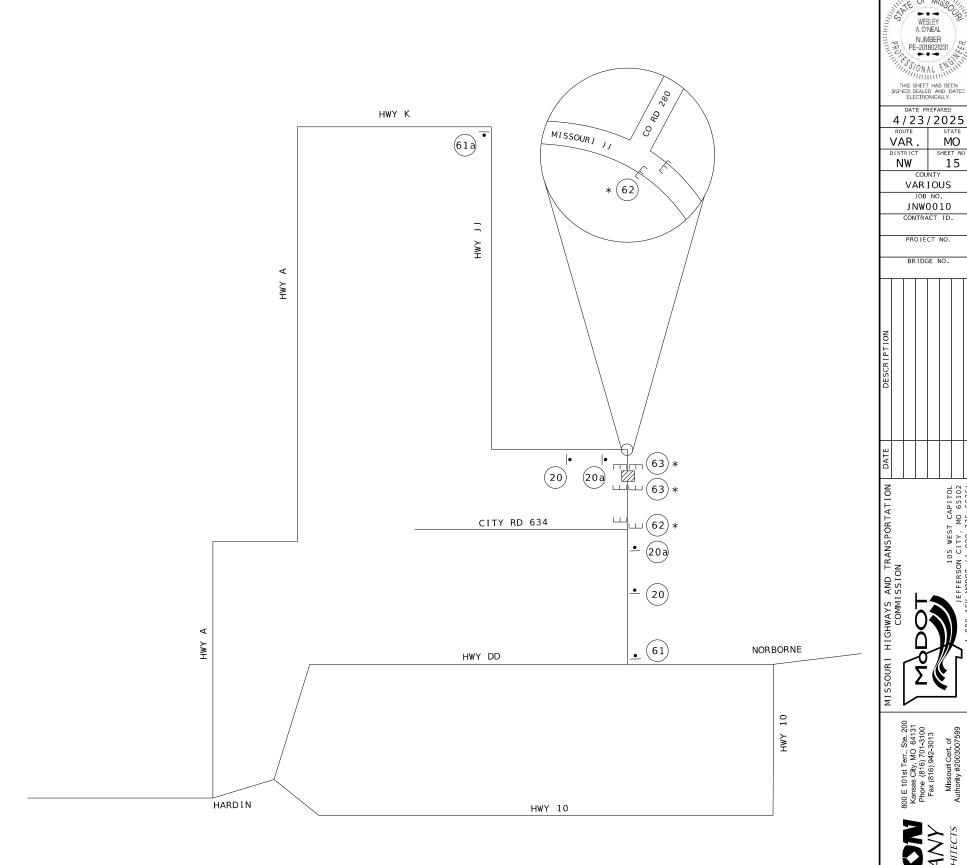
ROAD CLOSED ΤO THRU TRAFFIC

> R11-4 62

ROAD **CLOSED**

R11-2

63)



NOTES:

ANY EXISTING SIGNS THAT CONFLICT WITH THIS TRAFFIC CONTROL PLAN SHALL

* SIGN MOUNTED TO BARRICADE

TRAFFIC CONTROL CARROLL - ROUTE JJ SHEET 4 OF 4

MO

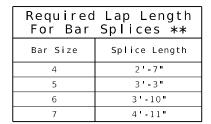
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VARIOUS

PROJECT NO.

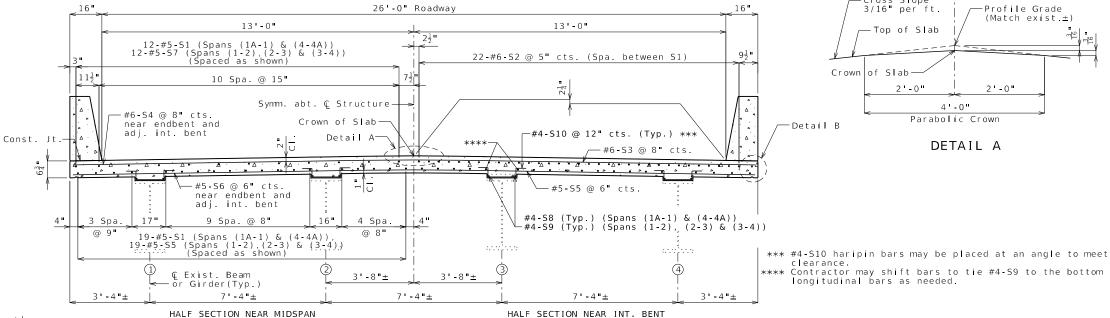
BRIDGE NO.

		Showing Lengths	5
Int. Ber	nt No. 2	Int. Bei	nt No. 3
Span (1-2)	Span (2-3)	Span (2-3)	Span (3-4)
19'-6"	19'-6"	19'-6"	19'-6"



** Unless otherwise shown

U.I.P. AND REDECK EXISTING (51')(76'-100'-76')(51') COMPOSITE WIDE FLANGE BEAM AND PLATE GIRDER SPANS (SKEW: 14° R.A.)



General Notes:

Design Specifications

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

Design Loading:

H15-44 (1961 & 1983) (Existing) HS20-44 (New Construction) 15 lb/sf Future Wearing Surface Earth - 120 lb/cf, Equivalent Fluid Pressure 45 lb/cf Fatigue Stress - Case III

Design Unit Stresses:

Class B-1 Concrete (Barrier) f'c = 4,000 psiClass B-2 Concrete (End Bents & Superstructure, except Barrier)
Reinforcing Steel (ASTM A615 Grade 60) f'c = 4,000 psifv = 60.000 nsiStructural Carbon Steel (ASTM A709 Grade 36) fy = 36,000 psi

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

Reinforcing Steel:

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

Miscellaneous:

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

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

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

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

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

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

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

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

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

TYPICAL SECTION THRU SLAB

Structural Steel Protective Coating:

Protective Coating: System G in accordance with Sec 1081. All structural steel within the limits shown on Sheet No.2 at Intermediate Bents No. 1 & 4 shall be coated with System G.

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

Prime Coat: The cost of inorganic zinc prime coat for new steel will be consideredcompletely covered by the contract unit price for Fabricated Structural Carbon Steel (Misc.).

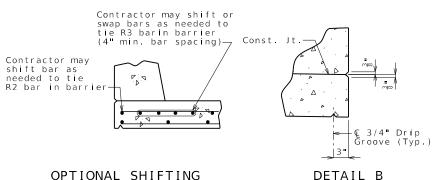
Field Coat(s): The color of the field overcoat shall be Grav (Federal Standard #26373) and shall be applied in accordance with Sec 1081.10.3.4. The cost of the intermediate field coat will be considered completely covered by the contract unit price per sq. Intermediate Field Coat (System G). The cost of the finish field coat will be considered completely covered by the contract unit price per sq. foot for Finish Field Coat (System G). The final field coating shall be masked to provide crisp, straight lines and to prevent overspray beyond the limits shown on Sheet No. 2.

Fabricated Steel Connections:

Field connections shall be made with 3/4-inch diameter ASTM F3125 Grade A325 Type 1 bolts and 13/16-inch diameter holes, except as

The cost of furnishing and installing angle bearing stiffeners at intermediate bents will be considered completely covered by the contract unit price for Fabricated Structural Carbon Steel (Misc.).

Fabricated structural steel shall be ASTM A709 Grade 36, except



Estimated Quantities Total emoval of Existing Bridge Deck sq. foot 10,332 Temporary Falsework lump sur Bridge Approach Slab (Minor) 118 sq. yar Class B Concrete (Substructure) 1.5 cu. var Slab on Steel sq. yard 1.145 ype H Barrier linear foo 755 Substructure Repair (Formed) 95 sa. foo Reinforcing Steel (Bridges) 120 poun Protective Coating - Concrete Bents and Piers (Epoxy) lump sur Fabricated Structural Carbon Steel (Misc.) poun 380 Slab Drain 66 eac Surface Preparation for Applying Epoxy-Mastic Primer Tump sur urface Preparation for Overcoating Structural Steel (System G) sq. foo 900 Intermediate Field Coat (System G) 900 sa. foot sq. foot Finish Field Coat (System G) 900 Aluminum Epoxy-Mastic Primer lump sum 59 Strip Seal Expansion Joint System Linear foot

SEC/SUR 6

Crown of Slab

longitudinal bars as needed.

-Detail B

Cross Slope

3/16" per ft

-Top of Slab

TWP 51N

— € Roadway

2'-0'

4'-0"

Parabolic Crown

DETAIL A

— Profile Grade

(Match exist.±)

RGE 17W

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

For approximate location of temporary falsework see Sheet No.2.

Estimated	for	Slab on St	ee l	
	I t em			Total
Class B-2 Concrete			cu. yard	236
Reinforcing Steel	(Epoxy Coated)		pound	105,390

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

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

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

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

REPAIRS TO BRIDGE: ROUTE KK OVER LITTLE CHARITON RIVER

ROUTE KK FROM ROUTE 5 TO ROUTE WW ABOUT 0.6 MILE WEST OF ROUTE 5 BEGINNING STATION $646+59.08 \pm (MATCH EXISTING)$

OF MISS! JASON M. KEMNITZ NUMBER PE-2011005051 SSIONAL EN

6/26/2025 KK MO SHEET NO BR 1

CHAR I TON JNW0010 CONTRACT ID

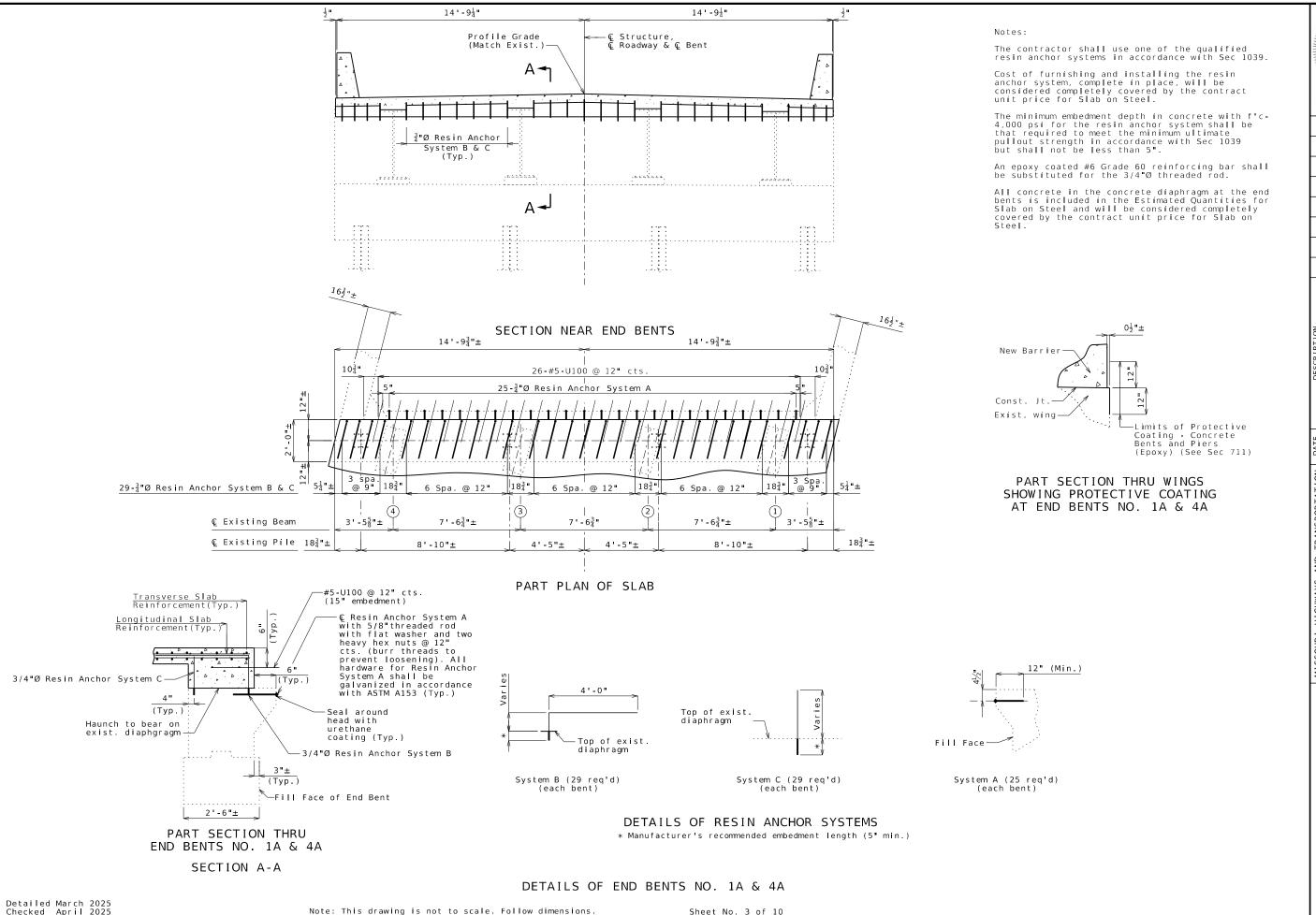
PROJECT NO BRIDGE NO A18892

800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013

COMPANY \bigcup

TOP BARS AT BARRIER

to cut any of the existing reinforcement when performing saw cut/neat line.



JASON M. KEMNITZ NUMBER PE-2011005051 ISSIONAL ENG

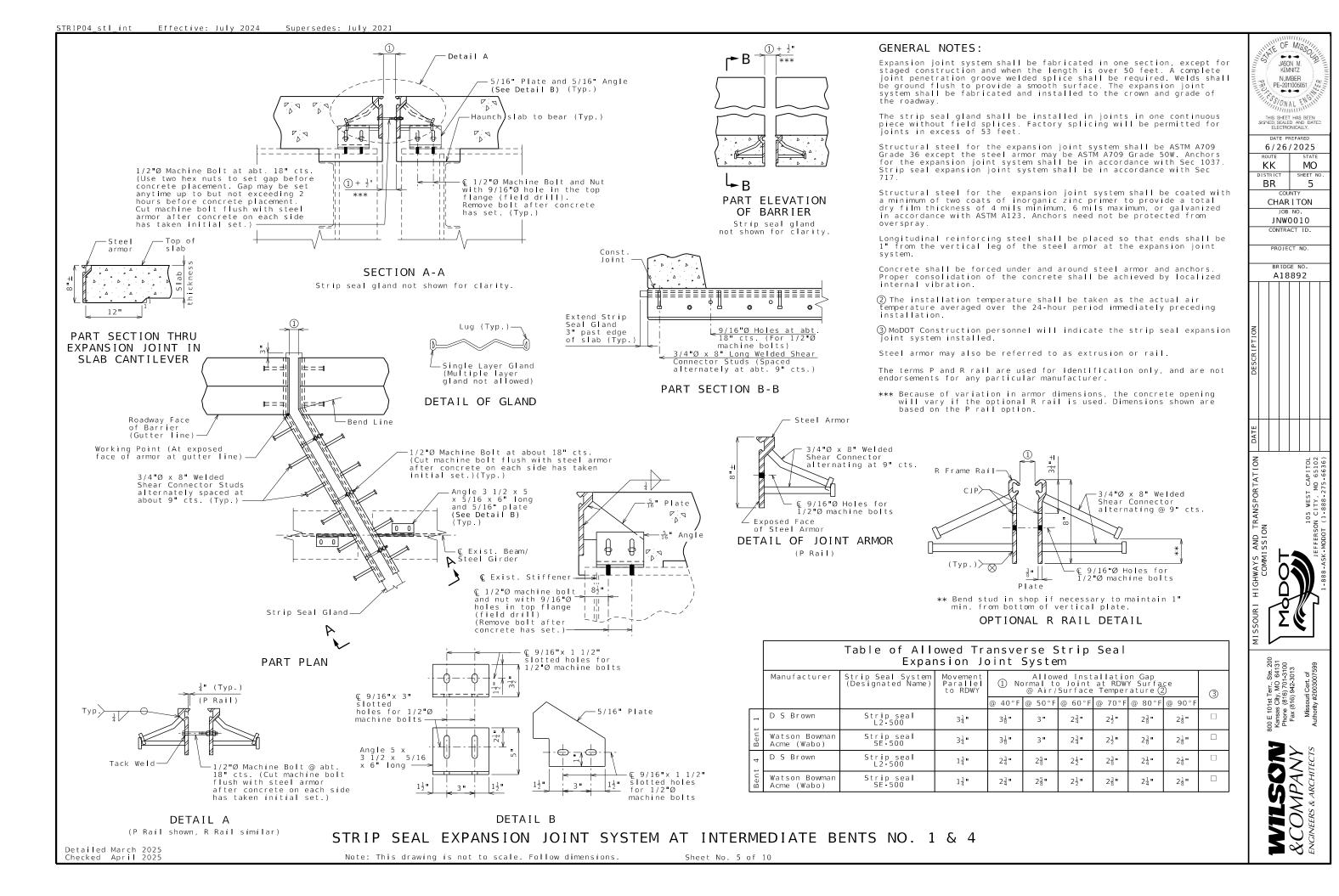
6/26/2025 KK MO SHEET NO 3 BR

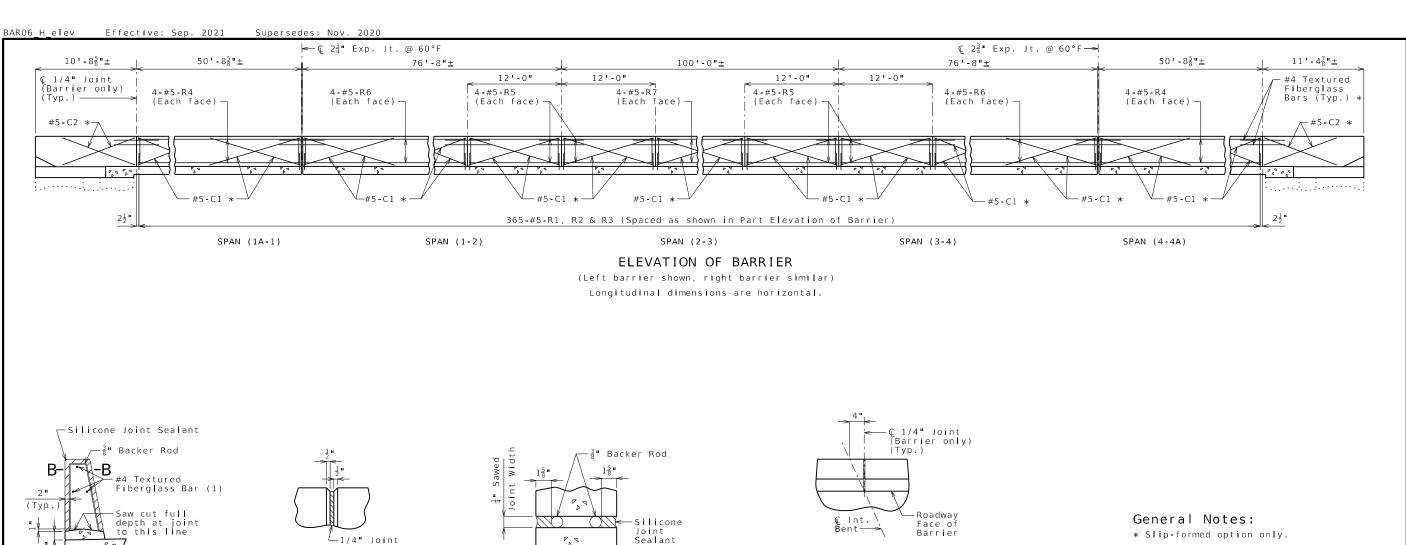
> CHAR I TON JNW0010

CONTRACT ID. PROJECT NO.

BRIDGE NO A18892

800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013





(Typ.)

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

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

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

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

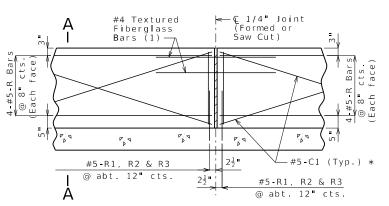
Concrete in barrier shall be Class B-1.

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

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

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

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



SECTION THRU

SAW CUT JOINT

Detailed March 2025 Checked April 2025

Filler

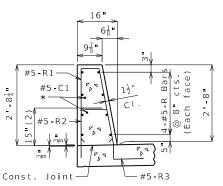
PART ELEVATION

AT FORMED JOINT

(Sec 1057)

PART ELEVATION OF BARRIER

(1) Four feet long, centered on joint,



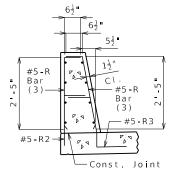
SECTION B-B

SECTION A-A

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

The cross-sectional area above the slab is 2.89 square feet.

(2) To top of bar



PART PLAN SHOWING JOINT LOCATION

R-BAR PERMISSIBLE ALTERNATE SHAPE

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



JASON M. KEMNITZ

NUMBER PE-2011005051

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6/26/2025

CHAR I TON

JNW0010

CONTRACT ID.

PROJECT NO.

BRIDGE NO A18892

MO SHEET NO

6

ΚK

BR

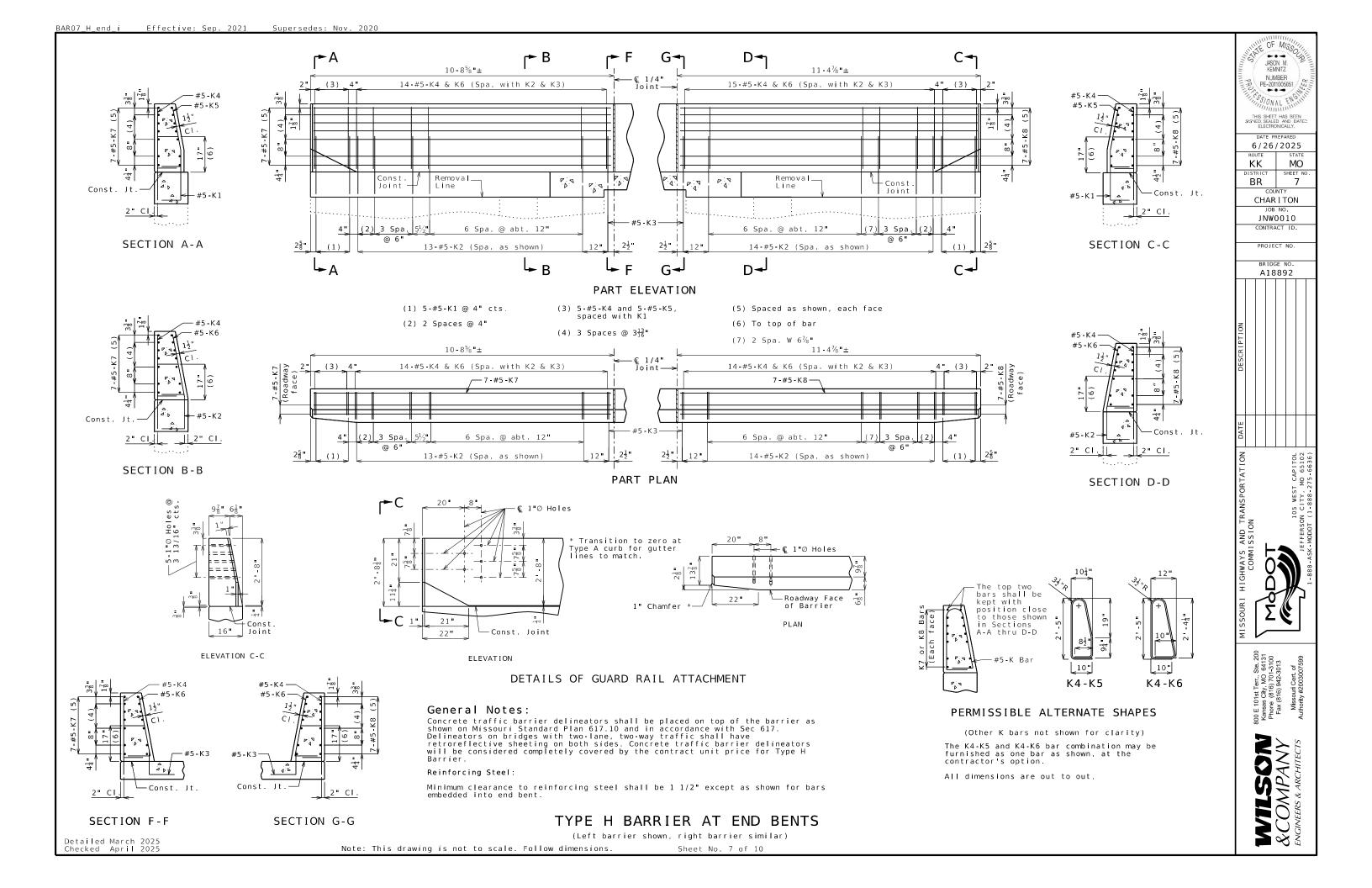
800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013

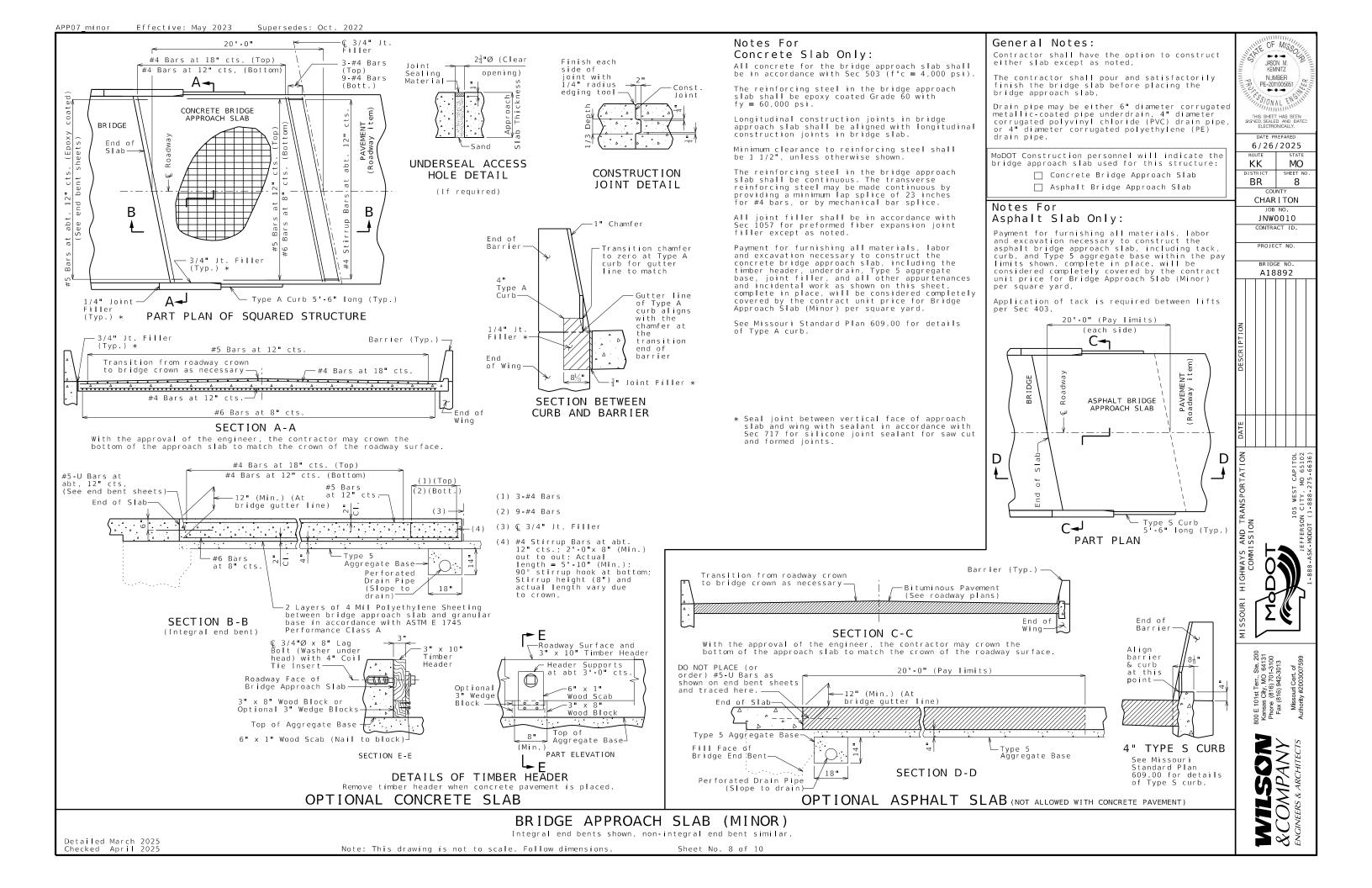
0

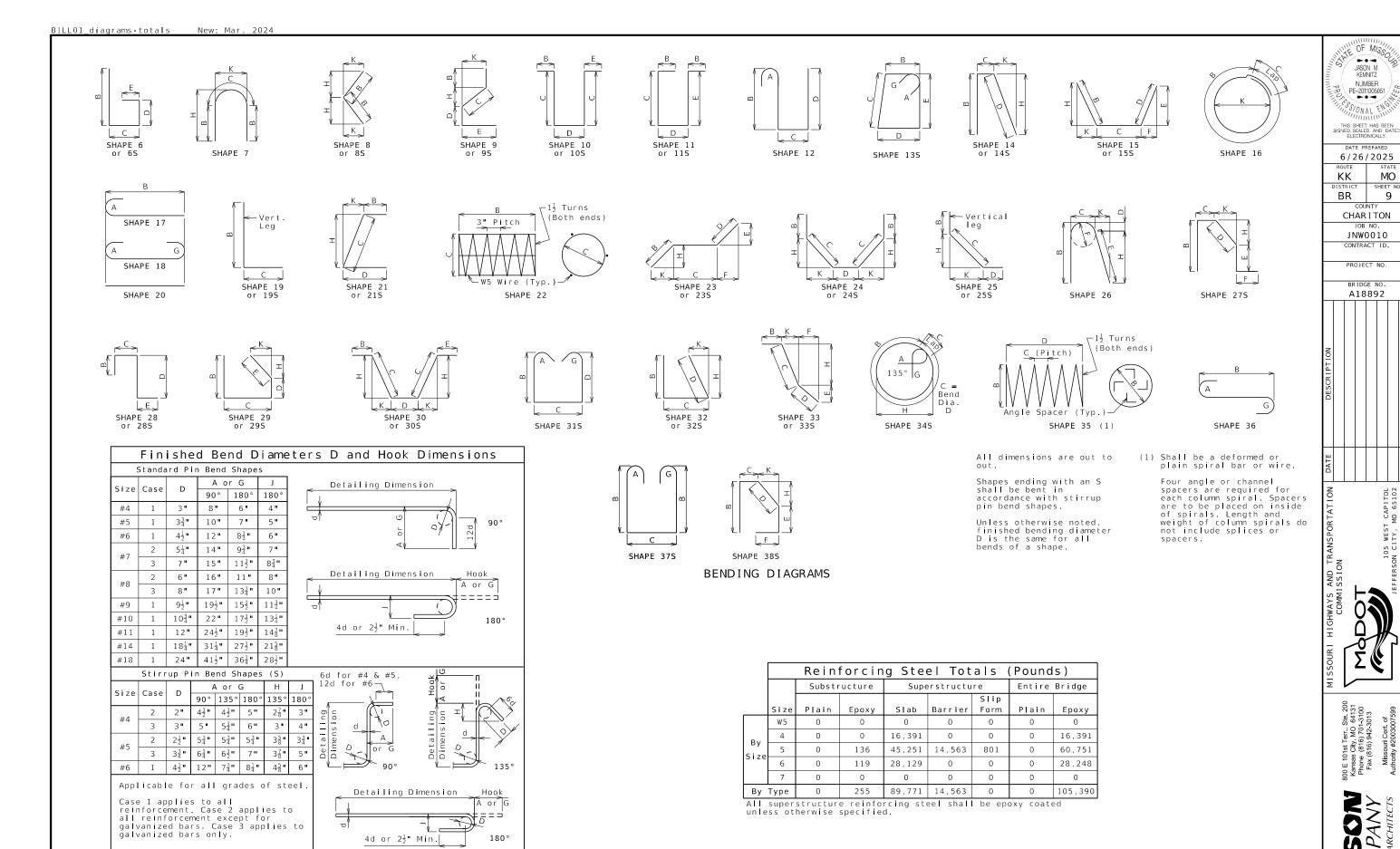
TYPE H BARRIER

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

Sheet No. 6 of 10







BILLO3 data tables New: Mar. 2024

Bill of Reinforcing Steel Dimensions Nom. Actual					 	<u> </u>		1		11 01			ng St	CCI		Nama La	1 c + · · - 1	τ									
			\vdash								Nom.			Ш.			-	_	_		mension -					Actual	
	ze/	Codes		В	C	D	E	F	H	K		h Length			Size/	Codes	(1)(1.5)		C	D	E	F	H	K		ength	
. Ma	ark Location	E SH S	X V T	t in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft i	n. ft in.	. Ib	Req	Mark Location	E SH S	(V) f t	in ft	in. ft	t in. 1	tt in.	ft in.	ft in.	ft in.	ft in.	ft in.	
	END BENT																\perp							-			+
	NO. 1A & 4A																							-			+
-	UI OO CLAD DECT	20 6	+	6 000			-				_	6 2 6	126				++-							-			+
5	U100 SLAB REST	20 S	+	6.000			-		-		2	6 2 6	136				++-							-			+
-			+						+							++-+								+	+ +		+
	INT DENT		++													+								-	+		+
	INT. BENT		++													+								-	+		+
	NO . 4		+																								+
	H400 BEAM	1 20	+	C C 000			-				2.0	6 26 6	110			+								-			+
6	H400 BEAM	20	+ -	6 6.000			-				26	0 20 0	119			+								-			+
			+																								-
	CLAD		++				-		-							+								+			+
-	SLAB		++													+								-			+
4 -	C1 CLAB	F 20	+ +-	2 4 000							F 2	4 52 4	6760			+								-			-
4 5	S1 SLAB	E 20		2 4.000							52	4 52 4	6768			+								-			+
6	S2 SLAB	E 20		9 0.000					1		39		5155	l		+	+										+
8 6	S3 SLAB	E 20	1 2	8 5.000							28	5 28 5	21682	l		+	+								++		+
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0 5	S7 SLAB	E 20		3 3.000							53		17217	l			+										+
5 4	S8 SLAB	E 20		0 6.000							50		1006			+	+										4
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5	K3 BARRIER	E 27 S					0 6.000	0 12.000	0 14.250	0 0 2.750	5																
8 5	K4 BARRIER	E 19 S	2	5.000	0 10.000						3	3 3 2	192														
0 5	K5 BARRIER	E 38 S	$\perp \perp$							0 4.250		1 3 0	63														
8 5	K6 BARRIER	E 21 S			2 4.875	0 10.000			2 4.250	0 6.000	3	3 3 1	187														
8 5	K7 BARRIER	E 20		0 5.000							10	5 10 5	304														
8 5	K8 BARRIER	E 20	1	1 1.000							11	1 11 1	324														
0 5	R1 BARRIER	E 14 S			0 6.500				2 5.000	0 5.500	5	5 5 3	3997														
0 5	R2 BARRIER	E 19 S	0		0 9.500						2	4 2 3	1713														
0 5	R3 BARRIER	E 27 S				0 15.250	0 3.250	0 12.000	0 15.000	0 3.000	3	4 3 2	2411														
2 5	R4 BARRIER	E 20		0 3.000							50	3 50 3	1677														
4 5	R5 BARRIER	E 20		1 8.000							11	8 11 8	779														
5		E 20		3 9.000							52	6 52 6	1752														
5	R7 BARRIER	E 20	3	9 5.000							39	5 39 5	1316				$\bot \bot$										1
			$\perp \perp$														$\perp \perp$										
	SLIP FORM		$\perp \perp$														$\perp \perp$										
	BARRIER	\Box	$\perp \perp$							1							$\bot \bot$										
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			+							1	1						\top										T
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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.

All bars shall be Grade 60.

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.

For bending diagrams and steel reinforcing totals, see Sheet No. 9. $\,$ BILL OF REINFORCING STEEL Detailed March 2025 Checked April 2025 Sheet No. 10 of 10 Note: This drawing is not to scale. Follow dimensions.

800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013

JASON M. KEMNITZ NUMBER

6/26/2025

CHAR I TON JOB NO JNW0010 CONTRACT ID. PROJECT NO. BRIDGE NO. A18892

MO

SHEET NO

10

ΚK

BR

DISTRICT

B_A18892_010_JNW0010_BIII_of_Reinforced_Steel.dgn 11:13:30 AM 6/26/2025

Table Showing S2 Bar Lengths									
Int. Bei	Int. Bent No. 2 Int. Bent No. 3								
Span 1	Span 2	Span 2	Span 3						
19'-6"	24'-6"	24'-6"	19'-6"						

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

** Unless otherwise shown

Seismic Performance Category A

H15-44 (1953) (Existing) HS20-44 (New Construction)

Fatigue Stress - Case III

Class B-1 Concrete (Barrier)

bars, unless otherwise noted.

slab súrface. (Roadway item)

lines indicate new work.

shop drawings.

2002 AASHTO LFD (17th Ed.) Standard Specifications

No Future Wearing Surface Earth - 120 lb/cf, Equivalent Fluid Pressure 45 lb/cf

except Barrier)

All joint filler shall be in accordance with Sec 1057 fo

preformed sponge rubber expansion and partition joint filler.

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

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

Roadway surfacing adjacent to bridge ends shall match new bridge

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

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

Contractor shall verify all dimensions in field before finalizing the

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

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

length is available, existing bars shall extend into new concrete at least 40 diameters for plain bars and 30 diameters for deformed

Bars bonded in existing concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If

Class B-2 Concrete (End Bents & Superstructure,

Reinforcing Steel (ASTM A615 Grade 60)

f'c = 4.000 psi

f'c = 4,000 psi

fy = 60,000 psi

General Notes:

Design Loading:

Joint Filler:

Miscellaneous:

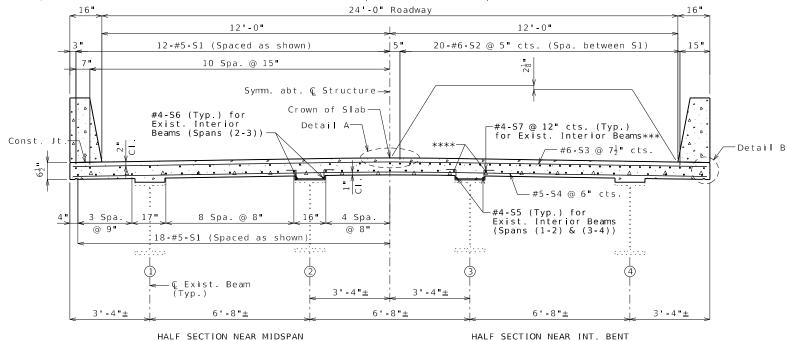
Design Specifications:

Design Unit Stresses:

except as noted.

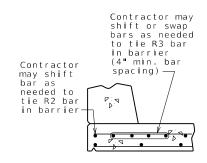
Reinforcing Steel:

U.I.P., REDECK AND MAKE COMPOSITE EXISTING (70'- 90'- 70') CONTINUOUS WIDE FLANGE BEAM SPANS

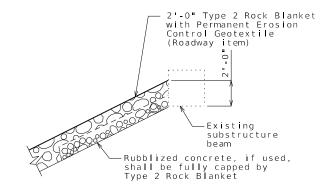


TYPICAL SECTION THRU SLAB

*** #4-S7 haripin bars may be placed at an angle to meet clearance. For Interior Beams, place at locations 17'-6" to 52'-6" for Spans (1-2) & (3-4) and at locations 22'-6" to 67'-6" for Span (2-3). **** Contractor may shift bars to tie #4-S6 to the bottom longitudinal bars as needed.



OPTIONAL SHIFTING TOP BARS AT BARRIER



ROCK BLANKET ON SPILL SLOPES

- € Roadway -Cross Slope 3/16" per ft. -Profile Grade (Match exist.±) Top of Slab Crown of Slab 2'-0" 4'-0" Parabolic Crown

TWP 56N

RGE 25W

JASON M. KEMNITZ

NUMBER

PE-2011005051

SONAL ENS

6/26/2025

LIVINGSTON

JNW0010

CONTRACT ID

PROJECT NO.

BRIDGE NO L05481

D

BR

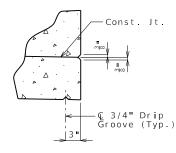
MO

SHEET NO

1

SEC/SUR 27

DETAIL A



DETAIL B

Estimated Quantities		
I t em		Total
Removal of Existing Bridge Deck	sq. foot	5702
Bridge Approach Slab (Minor)	sq. yard	110
Slab on Steel	sq. yard	692
Type H Barrier	linear foot	467
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Shear Connectors	each	2040
Slab Drain	each	40
Non-Destructive Testing	linear foot	80

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

Estimated Quantities for Slab on S	iteel
I t em	Total
Class B-2 Concrete cu. ya	d 146
Reinforcing Steel (Epoxy Coated) pour	nd 49,794

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

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

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

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

REPAIRS TO BRIDGE: ROUTE D OVER SHOAL CREEK DRAINAGE DITCH ROUTE D FROM ROUTE DD TO ROUTE N

ABOUT 1.3 MILES SOUTH OF ROUTE DD BEGINNING STATION 394+80.0 \pm (MATCH EXISTING)

800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013

COMPANY \bigcup

Traffic Handling:

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

Detailed March 2025 Checked April 2025

DETAILS OF CONCRETE REMOVAL AT END BENTS

The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Bridge Deck. Vertical backwall and wingwall reinforcement to be cut off one inch below concrete removal surface and the resulting holes shall be filled with a qualified special mortar. A smooth, level surface shall be provided at Bents No. 1 & 4

General Notes:

Stav-In-Place Forms:

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

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

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

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

Pouring and Finishing Slab:

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

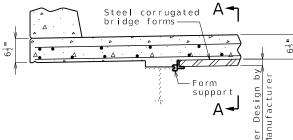
Slab shall be poured upgrade from end to end at a minimum rate of 25 cubic yards per hour.

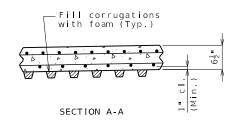
Alternate pour sequences may be submitted to the engineer for approval. Keyed construction joints shall be provided between pours.

Bridge deck surface may be finished with a vibratory screed.

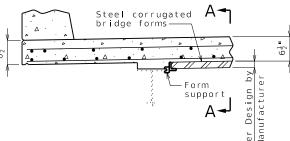
Haunching:

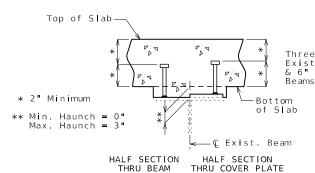
Slab is to be considered a uniform thickness as shown on the plans. Haunching will vary. See front sheet for slab thickness. Haunches will be increased approximately 3/4" when comparing with original plan dimensions to match existing grade on Rite.D.



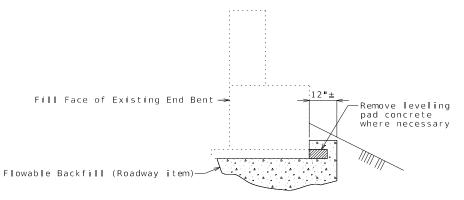


OPTIONAL STAY-IN-PLACE FORM DETAILS





SECTION THRU EXIST. BEAM SHOWING SHEAR CONNECTORS



PART SECTION SHOWING FLOWABLE BACKFILL AT EXPOSED PILES AT END BENT NO.4

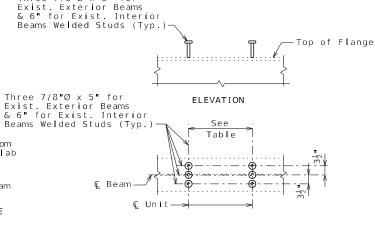
ELEVATION SHOWING SHEAR

CONNECTOR SPACING

	TABLE	SHOW	ING SHEAR	CONN	ECTOR	UNIT	SPAC	CING	
Span	S.C. per unit	Α	В		С		D		E
(1-2)	3	6½" ±	51 Units @ 12	cts.	4 ' - 0½" ±	7 Units	@ 6"	cts.	12' - 11 ³ / ₄ "±
(4-3)	3	6½"±	51 Units @ 12	cts.	4 · - 0½" ±	7 Units	@ 6"	cts.	12 - 11 ³ / ₄ "±
				Total	shear co	nnector	s requ	ired	1,392

			WING SHEAR C	ONNECT	OR U	NIT SPACING		
Span	S.C. per unit	А	В	С	D	E	F	
				4'-0½"±	5¾"±	20 Units @ 12" cts.	6"±	
Total shear connectors required								

Three 7/8 % \times 5 % for

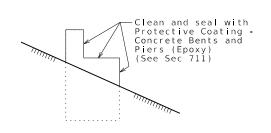


PLAN OF SHEAR CONN. (3 PER UNIT)

DETAILS OF SHEAR CONNECTORS

The cost of supplying and installing shear connectors will be considered completely covered by the contract unit price for

Shear connectors shall be in accordance with Sec 712, 1037 & 1080.



TYPICAL SECTION THRU END BENTS NO. 1 & 4 SHOWING PROTECTIVE COATING



6/26/2025 D MO SHEET NO BR 2

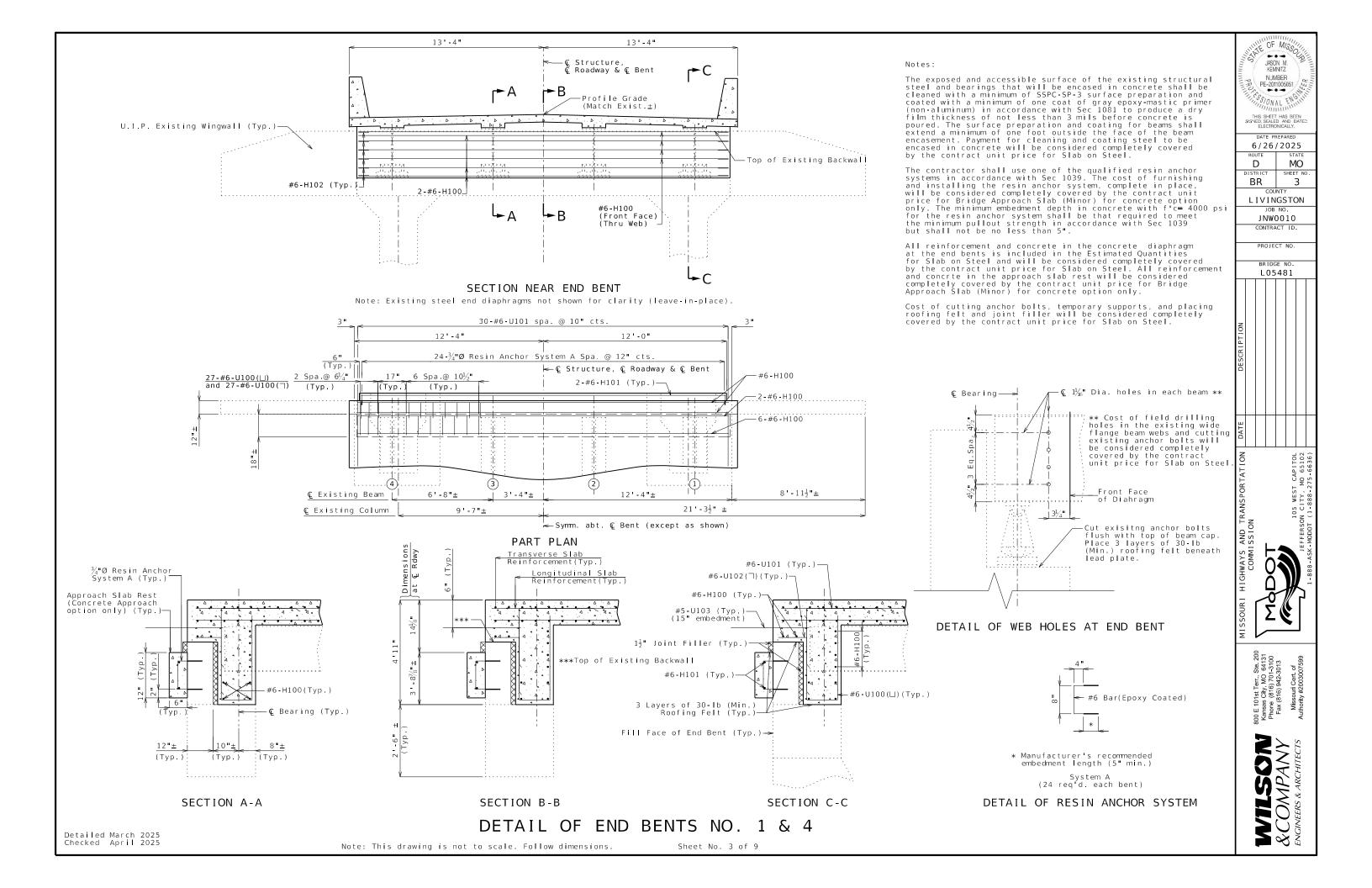
LIVINGSTON

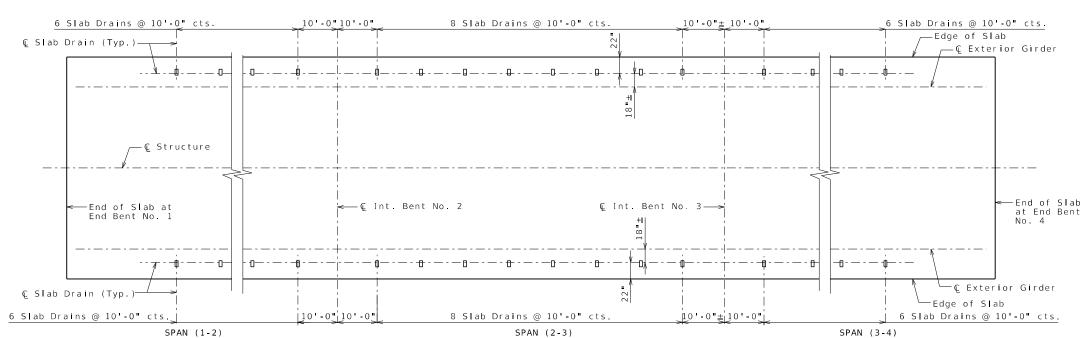
JNW0010 CONTRACT ID.

PROJECT NO.

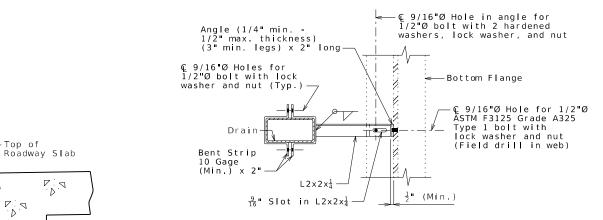
BRIDGE NO L05481

800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013

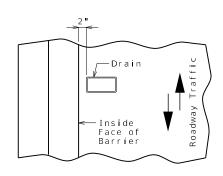




PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



PART SECTION SHOWING BRACKET ASSEMBLY



PART PLAN OF SLAB AT DRAIN

PLAN OF FRP DRAIN OPTION

8" (Nom.)

ELEVATION OF DRAIN

PLAN OF STEEL DRAIN OPTION

© Drain→

© Drain→

€ Drain

Bottom of Roadway Slab

-1/2"Ø x 3" Rod (ASTM A709 Grade 36) or 1/2"Ø x 3"± Shear

— € Drain

Connector (Typ.)

1/2 Ø x 3 Galv. Carriage Bolt with Hex Nut and Lock Washer (Typ.)

└─ Ç Drain

General Notes:

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

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

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

Reinforcing steel shall be shifted to clear drains.

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

and nuts shall be galvanized in accordance with AASHTO M 232 (ASTM A153), Class C.

All 1/2-inch diameter bolts shall be ASTM A307, except as shown.

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

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

Notes for Steel Drain:

Slab drains may be fabricated of either 1/4-inch welded sheets of ASTM A709 Grade 36 steel or from 1/4-inch structural steel

Outside dimensions of drains are 8" x 4".

The drains shall be galvanized in accordance with ASTM A123.

Notes for FRP Drain:

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

Shape of drains shall be rectangular with outside nominal dimensions of $8\ \times\ 4\ \cdot$.

Minimum reinforced wall thickness shall be

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

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

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

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



6/26/2025 D MO SHEET NO BR 4

LIVINGSTON

JNW0010 CONTRACT ID.

PROJECT NO.



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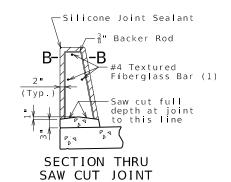
PART SECTION NEAR DRAIN

1" (Min.)

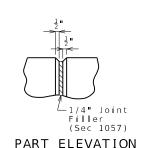
Top of

(Min.)

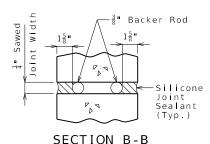
SLAB DRAINS

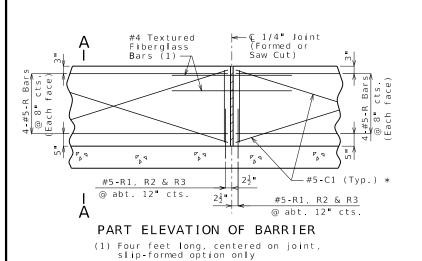


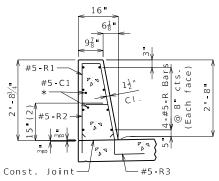
Detailed March 2025 Checked April 2025



AT FORMED JOINT





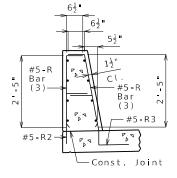


SECTION A-A

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

The cross-sectional area above the slab is 2.89 square feet.

(2) To top of bar



R-BAR PERMISSIBLE ALTERNATE SHAPE

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

General Notes:

* Slip-formed option only.

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

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

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

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

Concrete in barrier shall be Class B-1.

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

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

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

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



SIGNED, SEALED AND DATE ELECTRONICALLY.

6/26/2025
ROUTE STATE
D MO
DISTRICT SHEET NO
BR 5

L I V I NGSTON

JOB NO.

JNW0010 CONTRACT ID.

DESCRIPTION NO LATE NO. LOS AND A LO

COMMISSION

LIDE WEST CAPITOL

JEFFERSON CITY, MO 65102

800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013 Missouri Cert. of

WILSON &COMPANY ENGINEERS & ARCHITECTS

TYPE H BARRIER
Sheet No. 5 of 9

Reinforcing Steel:

PE-2011005051 SSIONAL EN 6/26/2025 D BR LIVINGSTON JNW0010 **ELEVATION C-C** CONTRACT ID. PROJECT NO. BRIDGE NO L05481 └─Const. Jt.

JASON M. KEMNITZ

NUMBER

MO SHEET NO

6

10" K4-K6

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PERMISSIBLE ALTERNATE SHAPES

(Other K bars not shown for clarity)

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

All dimensions are out to out.

Roadway Face of Barrier

1" Chamfer *

Detailed March 2025 Checked April 2025

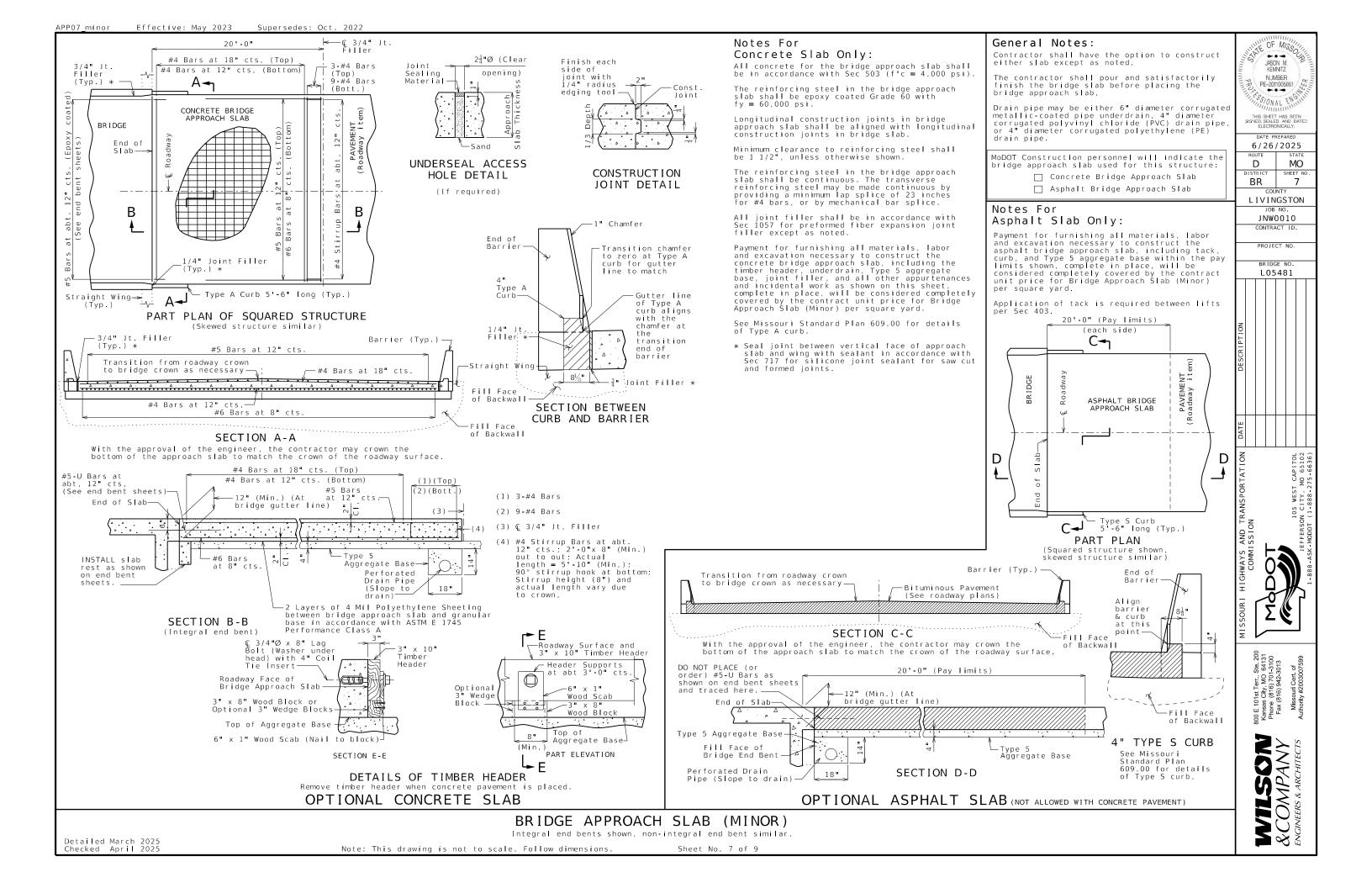
DETAILS OF GUARD RAIL ATTACHMENT

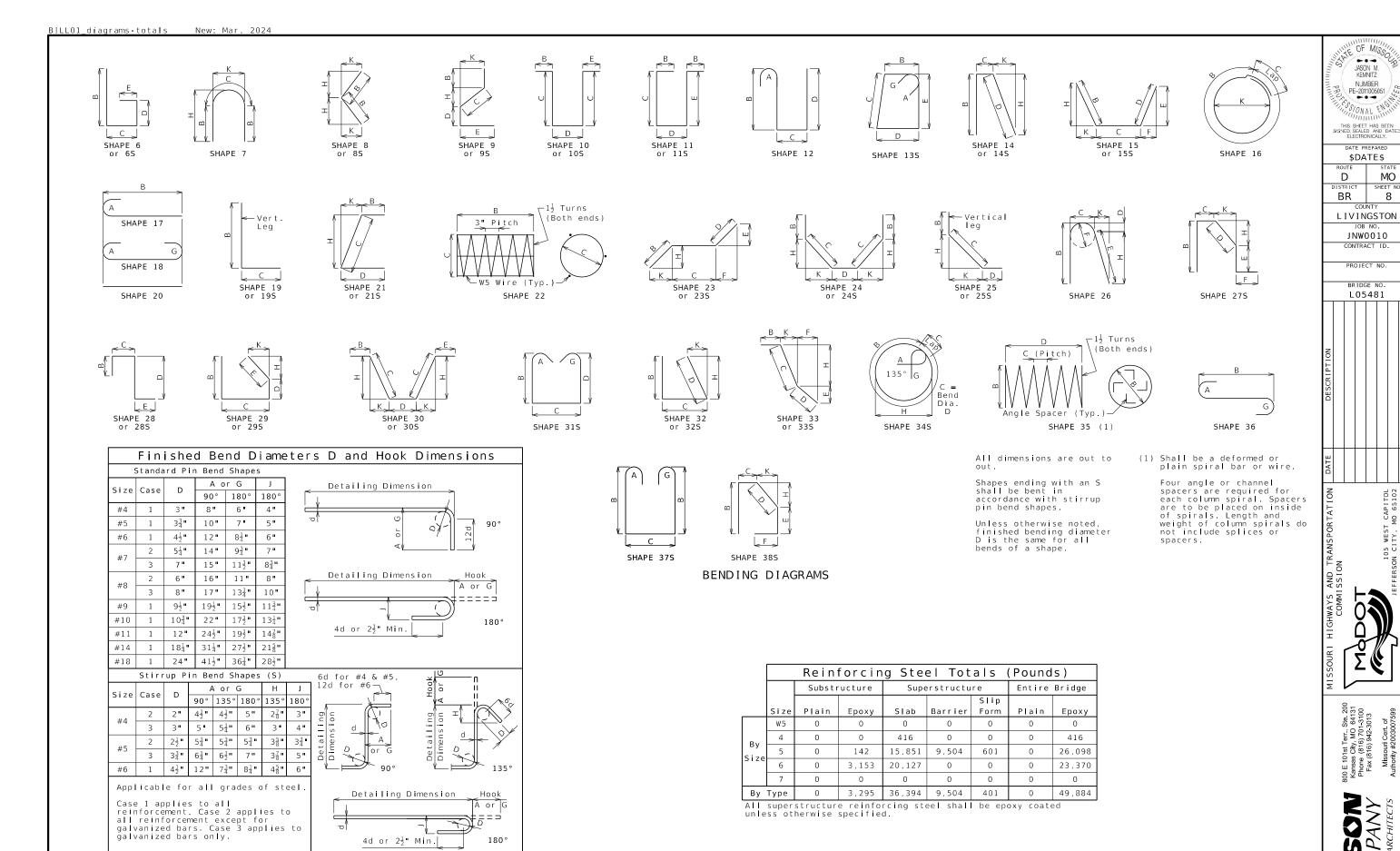
Minimum clearance to reinforcing steel shall be 1 1/2".

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

TYPE H BARRIER AT END BENTS

(Left barrier shown, right barrier similar)





BILLO3 data tables New: Mar. 2024

			E	Bill o	f Rei	nforci	ng St	ee I											Bill	of Rein	nforci	ng St	eel				
						Dimension	S			Nom.	Actual									D	imension	S				Actual	
No. Size/		Codes	В	С		E	F				Length	_	4 1	Size/		Code		В	C	D	E			K	Length		
	Location END BENTS	E SH S X	V ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	Ιb	Req.	Mark	Location	E SH S	SXV	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in	ft in.	Ιb
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54 6 U100	DIAPHRAGM	E 10 S		4 5.000	0 13 000					9 11	0 7	777	-	-													
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			3 8.000						4		4 6	365															
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374 6 S3 467 5 S4		E 20 E 20	26 5.000							26 5 26 5	26 5	14840 12867	1 -	 			++	+						+	+ +		
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236 4 S7	SLAB	E 10 S	0 6.000	0 4.000	0 9.000					1 11	1 8	263	<u> </u>			+	+										
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28 5 K2 48 5 K4			0 22.500			3.000		0 17.000	0 3.250		4 2 3 2	122 159	 	 													
20 5 K5		E 38 S				0 9.500	0 8.250	1 18.750	0 4.250		3 0		1														
28 5 K6	BARRIER	E 21 S		2 4.875	0 10.000				0 6.000	3 3	3 1	90															
56 5 K7	BARRIER	E 20	5 6.000						5	5 6	5 6	321					\perp										
463 F D1	DADDIED	F 14 C	2 5 000	0 6 500	2 5 500			2 5 000	0 5 500 5		E 3	2520	├	\vdash		+	-										
462 5 R1 462 5 R2		E 19 S	2 5.000 0 18.500		0 9.500			2 5.000	0 5.500 5		5 3 1 5	2530 683	1				-										
462 5 R3		E 27 S					0 12.000	0 15.000	0 3.000	3 4	3 2	1526															
32 5 R4	BARR I ER	E 20	59 8.000							59 8	59 8	1991															
64 5 R5		E 20	11 8.000								11 8	779															
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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. 8.

All bars shall be Grade 60.

Sheet No. 9 of 9

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.

LIVINGSTON JOB NO.
JNW0010 CONTRACT ID. PROJECT NO. BRIDGE NO. L05481

JASON M. KEMNITZ NUMBER PE-2011005051

\$DATE\$

MO

SHEET NO

9

D

DISTRICT

BR

800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013

BILL OF REINFORCING STEEL

Detailed March 2025 Checked April 2025

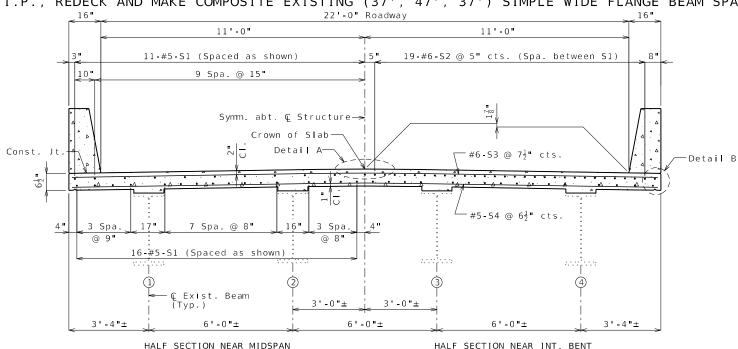
Note: This drawing is not to scale. Follow dimensions.

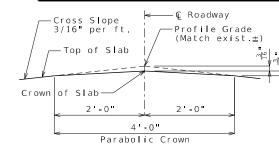
Table Showing S2 Bar Lengths Int. Bent No. 2 Int. Bent No. 3 Span (1-2)Span (2-3)Span (2-3)Span (3-4 5'-0" 5'-0" 5'-0" 5'-0"

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

** Unless otherwise shown.

U.I.P., REDECK AND MAKE COMPOSITE EXISTING (37', 47', 37') SIMPLE WIDE FLANGE BEAM SPANS





TWP 52N

RGE 22W

JASON M. KEMNITZ

NUMBER

PE-2011005051

SSIONAL ENS

6/26/2025

CARROLL LOB NO JNW0010

CONTRACT ID.

PROJECT NO.

BRIDGE NO

N07271

MO

SHEET NO

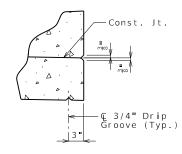
1

В

BR

SEC/SUR 28

DETAIL A



DETAIL B

General Notes:

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

Design Loading:

H10-44 (1953) (Existing) HS20-44 (New Construction) No Future Wearing Surface Earth - 120 lb/cf, Equivalent Fluid Pressure 45 lb/cf Fatigue Stress - Case III

Design Unit Stresses:

Class B-1 Concrete (Barrier) f'c = 4,000 psiClass B-2 Concrete (End Bents & Superstructure, except Barrier) Reinforcing Steel (ASTM A615 Grade 60) f'c = 4,000 psi $f_V = 60,000 \text{ psi}$

Joint Filler:

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

Reinforcing Steel:

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

Miscellaneous:

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

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

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

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

Contractor shall verify all dimensions field before finalizing the shop drawings.

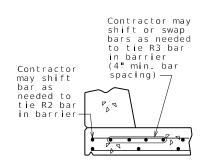
The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved qualified special mortar in accordance with Sec 704.

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

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

Traffic Handling:

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



OPTIONAL SHIFTING TOP BARS AT BARRIER

I t em		Total
Removal of Existing Bridge Deck	sq. foot	2751
Bridge Approach Slab (Minor)	sq. yard	100
Slab on Steel	sq. yard	338
Type H Barrier	linear foot	246
Substructure Repair (Formed)	sq. foot	90
Fiber Reinforced Polymer Wrap	sq. foot	11
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Shear Connectors	each	1,896
Strengthening Existing Beams	lump sum	1
Slab Drain	each	20

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

Estimated Quantities	for	Slab on St	eel
Item			Total
Class B-2 Concrete		cu. yard	78
Reinforcing Steel (Epoxy Coated)		pound	29,005

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

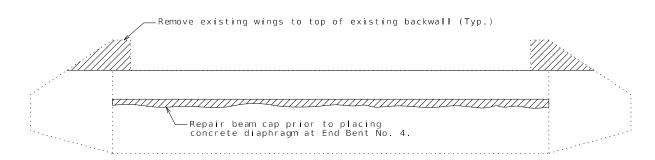
Method of forming the slab shall be in accordance with Sec 703. All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness Class SC 4 and a finish Type I, II or III.

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

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

REPAIRS TO BRIDGE: ROUTE B OVER SAMBO CREEK

ROUTE B FROM ROUTE 65 TO ROUTE 24 ABOUT 7.9 MILES EAST OF ROUTE 65 BEGINNING STATION 423+13.5 \pm (MATCH EXISTING)



DETAILS OF CONCRETE REMOVAL AT END BENTS

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

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

General Notes:

Stay-In-Place Forms:

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

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

Form sheets shall not rest directly on the top of beam 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

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

Pouring and Finishing Slab:

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

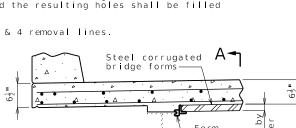
Slab shall be poured upgrade from end to end at a minimum rate of 25 cubic yards per hour.

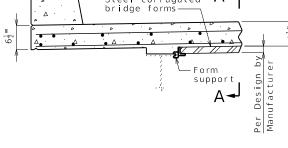
Alternate pour sequences may be submitted to the engineer for approval. Keyed construction joints shall be provided

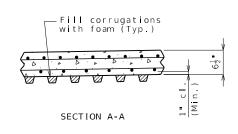
Bridge deck surface may be finished with a vibratory screed.

Haunching:

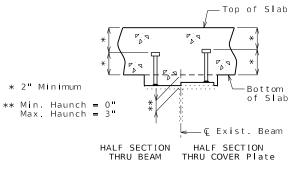
Slab is to be considered a uniform thickness as shown on the plans. Haunching will vary. See front sheet for slab thickness. Haunches will be increased approximately $\ensuremath{\mathcal{Y}}_{\!\!2}$ when comparing with original plan dimensions to match existing grade on Rte.B.



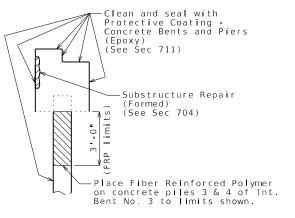




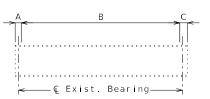
OPTIONAL STAY-IN-PLACE FORM DETAILS



SECTION THRU EXIST. BEAM SHOWING SHEAR CONNECTORS



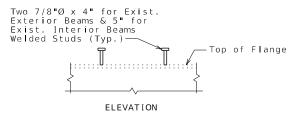
TYPICAL SECTION THRU INT. BENTS NO. 2 & 3 SHOWING PROTECTIVE COATING, SUBSTRUCTURE REPAIR AND FIBER WRAPPING OF PILES

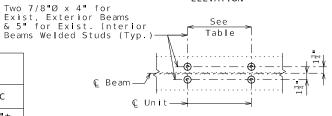


ELEVATION SHOWING SHEAR CONNECTOR SPACING

TABLE SHOWING SHEAR

	CONNECTOR UNIT SPACING										
Span	S.C. per unit	Α	АВ								
(1-2)	2	8"±	72 Units @ 6" cts.	8"±							
(2-3)	2	5 " ±	93 Units @ 6" cts.	5 " ±							
(3-4)	2	8"±	72 Units @ 6" cts.	8"±							
	Total shear connectors required										



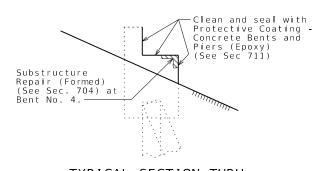


PLAN OF SHEAR CONN. (2 PER UNIT)

DETAILS OF SHEAR CONNECTORS

The cost of supplying and installing shear connectors will be considered completely covered by the contract unit price for Shear Connectors.

Shear connectors shall be in accordance with Sec 712, 1037 & 1080.



TYPICAL SECTION THRU END BENTS NO. 1 & 4 SHOWING PROTECTIVE COATING AND SUBSTRUCTURE REPAIR



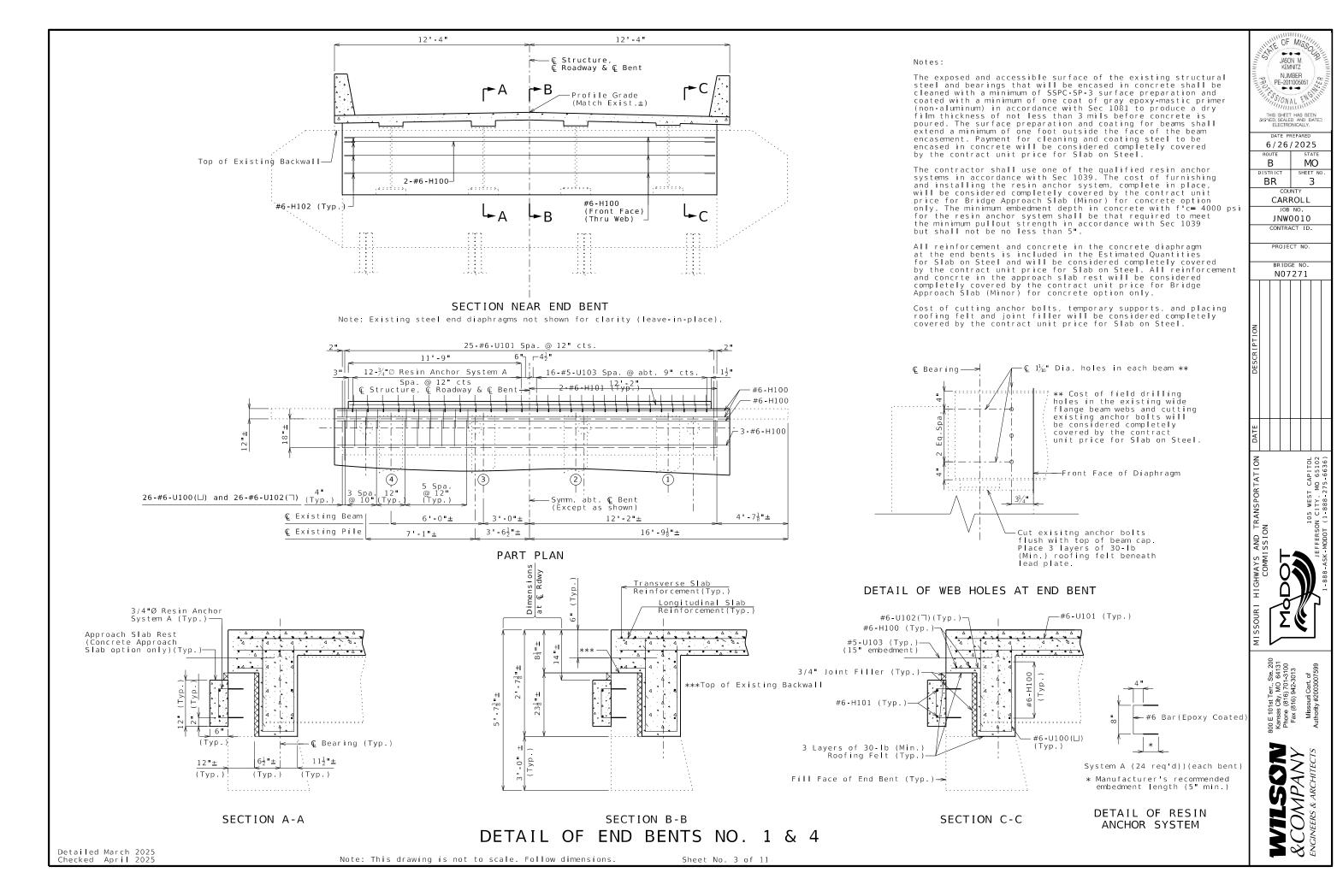
6/26/2025

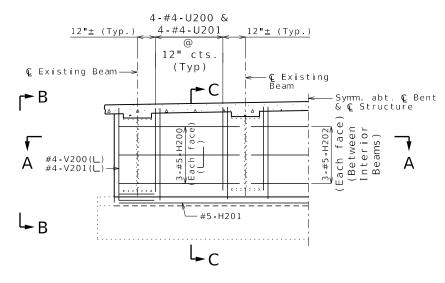
В MO SHEET NO BR 2

CARROLL LOB NO JNW0010 CONTRACT ID

PROJECT NO.

BRIDGE NO N07271



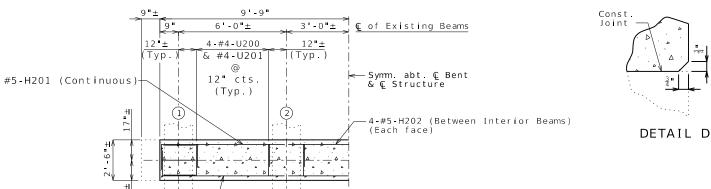


#4-V201(L)--#4-V200 (L) — Detail D (Typ.) (Typ.): 2'-6<u>"</u>± (Typ.) (Typ.)

ELEVATION B-B

PART SECTION NEAR INTERMEDIATE BENT

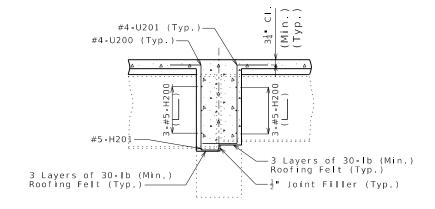
Note: Existing steel diaphragms not shown for clarity (leave-in-place).



SECTION A-A

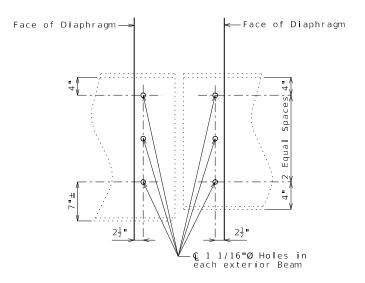
3-#5-H200 (Each face)-

DETAILS OF CONCRETE DIAPHRAGMS AT INTERMEDIATE BENTS NO. 2 & 3



SECTION C-C

Bend or cut bottom leg of U bars in field where necessary to miss existing steel diaphragm bent plate



DETAILS OF WEB HOLES IN EXTERIOR BEAMS AT INTERMEDIATE BENTS

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

Cost of field drilling holes in existing exterior wide flange beam webs and placing roofing felt and joint filler will be considered completely covered by the contract unit price for Slab on steel.

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



6/26/2025 В MO

SHEET NO BR 4 CARROLL LOB NO

JNW0010

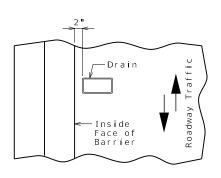
CONTRACT ID.

PROJECT NO.

BRIDGE NO. N07271

800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013

VILSON SCOMPANY



PART PLAN OF SLAB AT DRAIN

SLAB DRAINS

PLAN OF FRP DRAIN OPTION

8" (Nom.)

PLAN OF STEEL DRAIN OPTION

© Drain→

General Notes:

— End of Slab at End Bent

1/2"Ø x 3"± Shear

- C Drain

1/2 Ø x 3 Galv. Carriage Bolt with Hex Nut and

Lock Washer (Typ.)

└─ Ç Drain

No. 4

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

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

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

Reinforcing steel shall be shifted to clear drains

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

and nuts shall be galvanized in accordance with AASHTO M 232 (ASTM A153), Class C.

All 1/2-inch diameter bolts shall be ASTM A307, except as shown.

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

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

Notes for Steel Drain:

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

Outside dimensions of drains are 8" x 4".

The drains shall be galvanized in accordance with ASTM A123

Notes for FRP Drain:

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

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

Minimum reinforced wall thickness shall be 1/4 inch.

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

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

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

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



6/26/2025 В MO SHEET NO BR 5

CARROLL LOB NO JNW0010

CONTRACT ID. PROJECT NO.

BRIDGE NO N07271

800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013

0

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

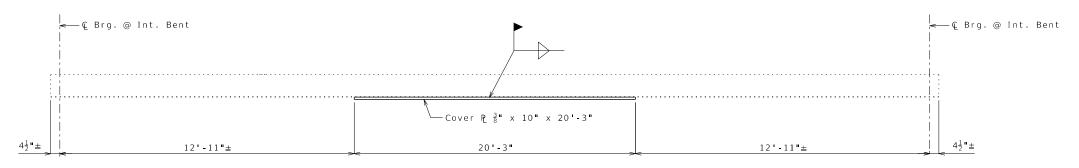
1" (Min.)

PART SECTION NEAR DRAIN

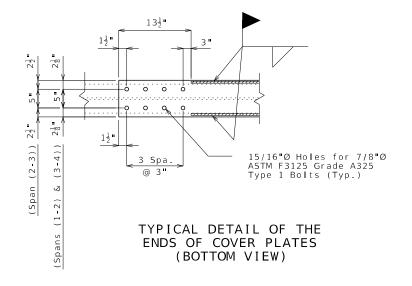
Detailed March 2025 Checked April 2025

Sheet No. 5 of 11

PART ELEVATION OF EXTERIOR BEAMS NO. 1 & 4 SHOWING COVER PLATE INSTALLATION SPAN (1-2) AND SPAN (3-4)



PART ELEVATION OF EXTERIOR BEAMS NO. 1 & 4 SHOWING COVER PLATE INSTALLATION SPAN (2-3)



Notes

Beam with end-bolted cover plates shall be installed in the following sequence after existing bridge deck is removed:

- 1. Drill holes in cover plate and flange.
- 2. Clean faying surfaces. (See Special Provisions)
- Install and tighten bolts.
- 4. Weld cover plate to flange.

Fabricated Structural Steel shall be ASTM A709 Grade 36, except as noted.

Payment for 1,190 pounds of new cover plates, complete in place, will be considered completely covered by the contract lump sum price for Strengthening Existing Beams.

Notch toughness is required for all cover plates.

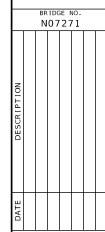
Contractor shall verify all dimensions in field before finalizing the shop drawings.

JASON M. KEMNITZ NUMBER PE-2011005051 THIS SHEET HAS BEEN STAYED SALADD AND DATE:

10000 - 00000000000 1 V-000 - N-00											
DATE PE	DATE PREPARED										
6/26/2025											
ROUTE	STATE										
В	MO										
DISTRICT	SHEET NO.										
BR	6										
COU	NTY										
CARE	CARROLL										
IOB	NO										

JNW0010 CONTRACT ID.

PROJECT NO.

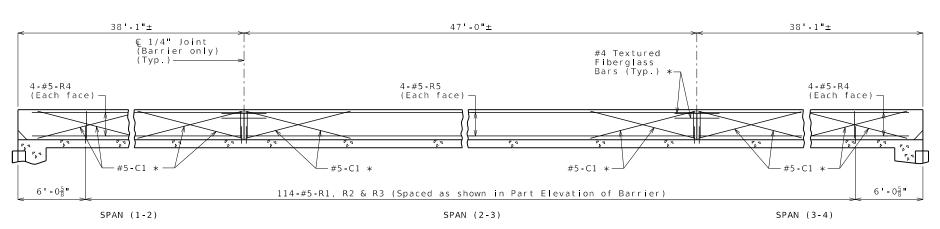


ISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITO
JEFFERSON CITY, MO 6510

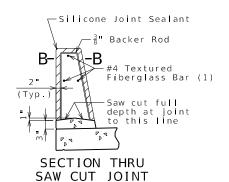
800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013 Missouri Cert. of

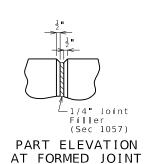
WILSON &COMPANY ENGINEERS & ARCHITECTS

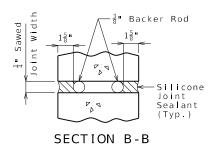


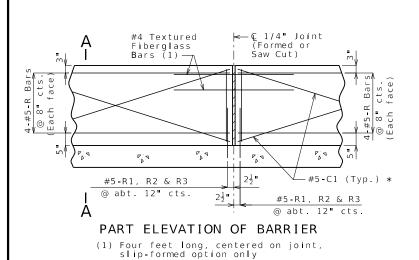
ELEVATION OF BARRIER

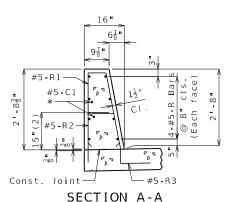
(Left barrier shown, right barrier similar) Longitudinal dimensions are horizontal.







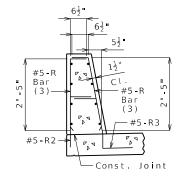




Use a minimum lap of 3'-1" for #5 horizontal barrier bars.

The cross-sectional area above the slab

(2) To top of bar



R-BAR PERMISSIBLE ALTERNATE SHAPE

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

TYPE H BARRIER

NUMBER PE-2011005051 ISSIONAL ENG 6/26/2025

JASON M. KEMNITZ

В MO SHEET NO 7

BR CARROLL LOB NO

> JNW0010 CONTRACT ID.

PROJECT NO.

BRIDGE NO N07271

General Notes:

* Slip-formed option only.

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

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

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

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

Concrete in barrier shall be Class B-1.

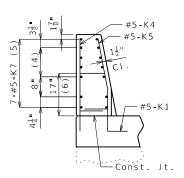
Measurement of barrier is to the nearest linear foot for each structure, measured along the outside top of slab from end of slab to end of slab.

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

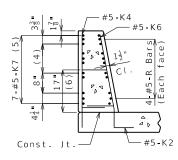
Joint sealant and backer rods shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

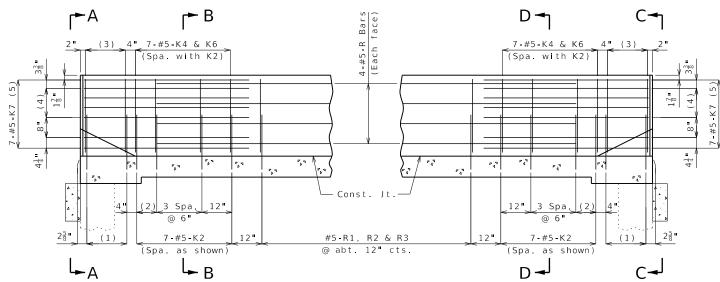
For slip-formed option, both sides of barrier shall have a vertically broomed finish and the top shall have a transversely broomed finish.





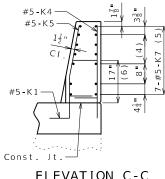
ELEVATION A-A



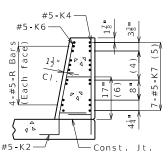


PART ELEVATION

- (1) 5-#5-K1 @ 4" cts.
- (2) 2 Spaces @ 4"
- (3) 5-#5-K4 and 5-#5-K5, spaced with K1
- (4) 3 Spaces @ 3¹³₁₆
- (5) Spaced as shown, each face
- (6) To top of bar

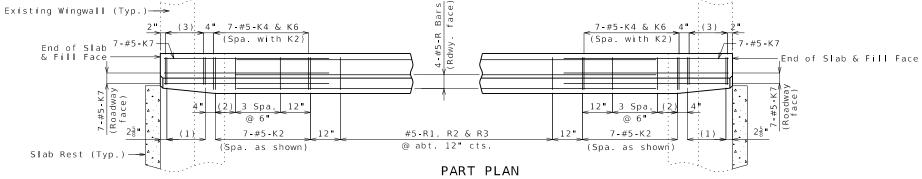


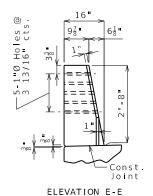
ELEVATION C-C



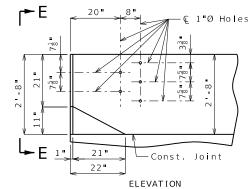
SECTION D-D

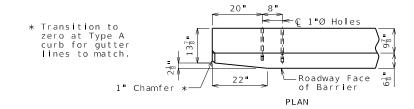
SECTION B-B





Detailed March 2025 Checked April 2025





DETAILS OF GUARD RAIL ATTACHMENT

General Notes:

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

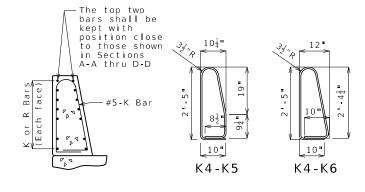
Reinforcing Steel:

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

Use a minimum lap of 2'-6" between K7 bars and R bars.

TYPE H BARRIER AT END BENTS

(Left barrier shown, right barrier similar)



PERMISSIBLE ALTERNATE SHAPES

(Other K bars not shown for clarity)

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

All dimensions are out to out.

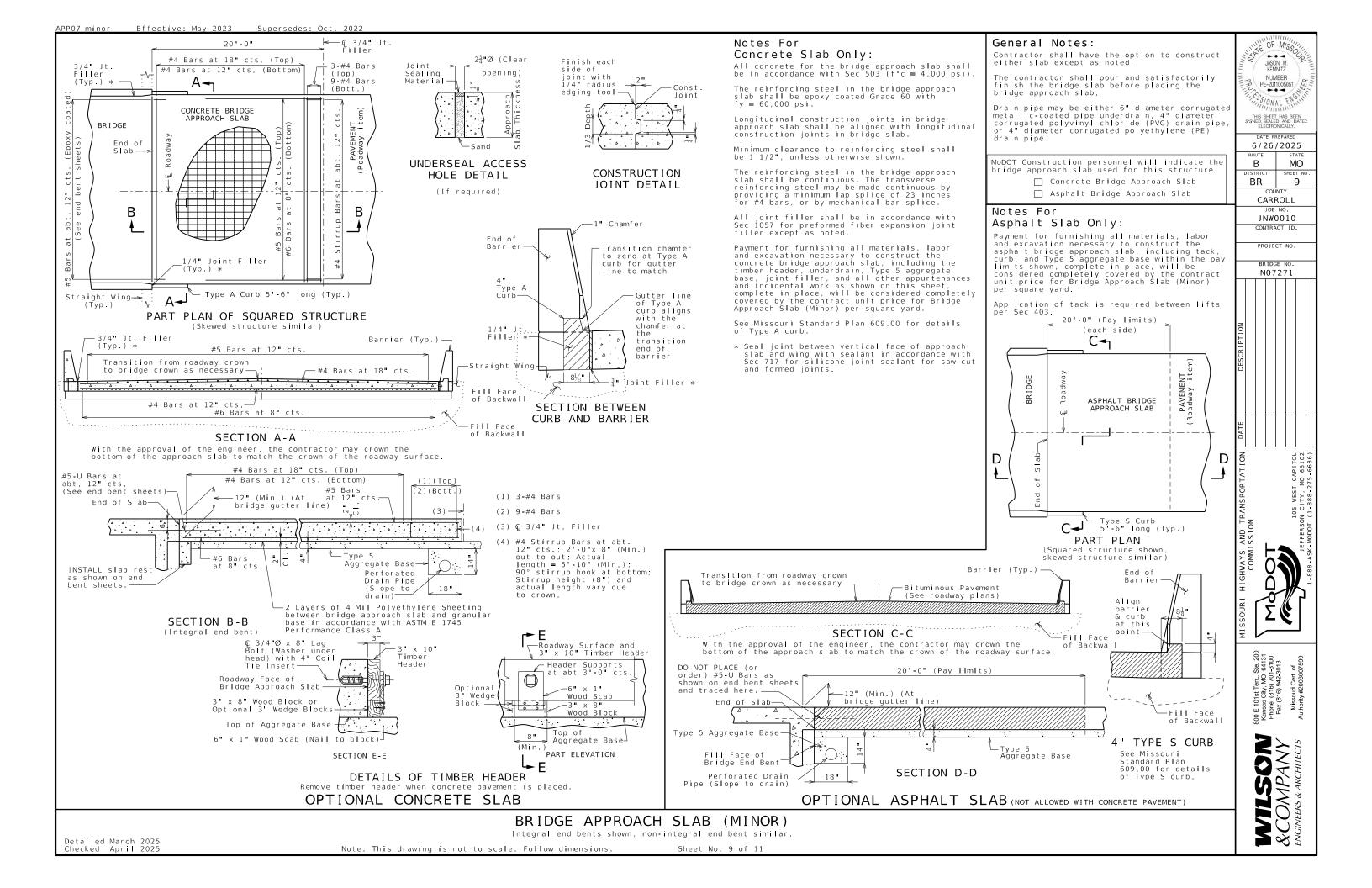


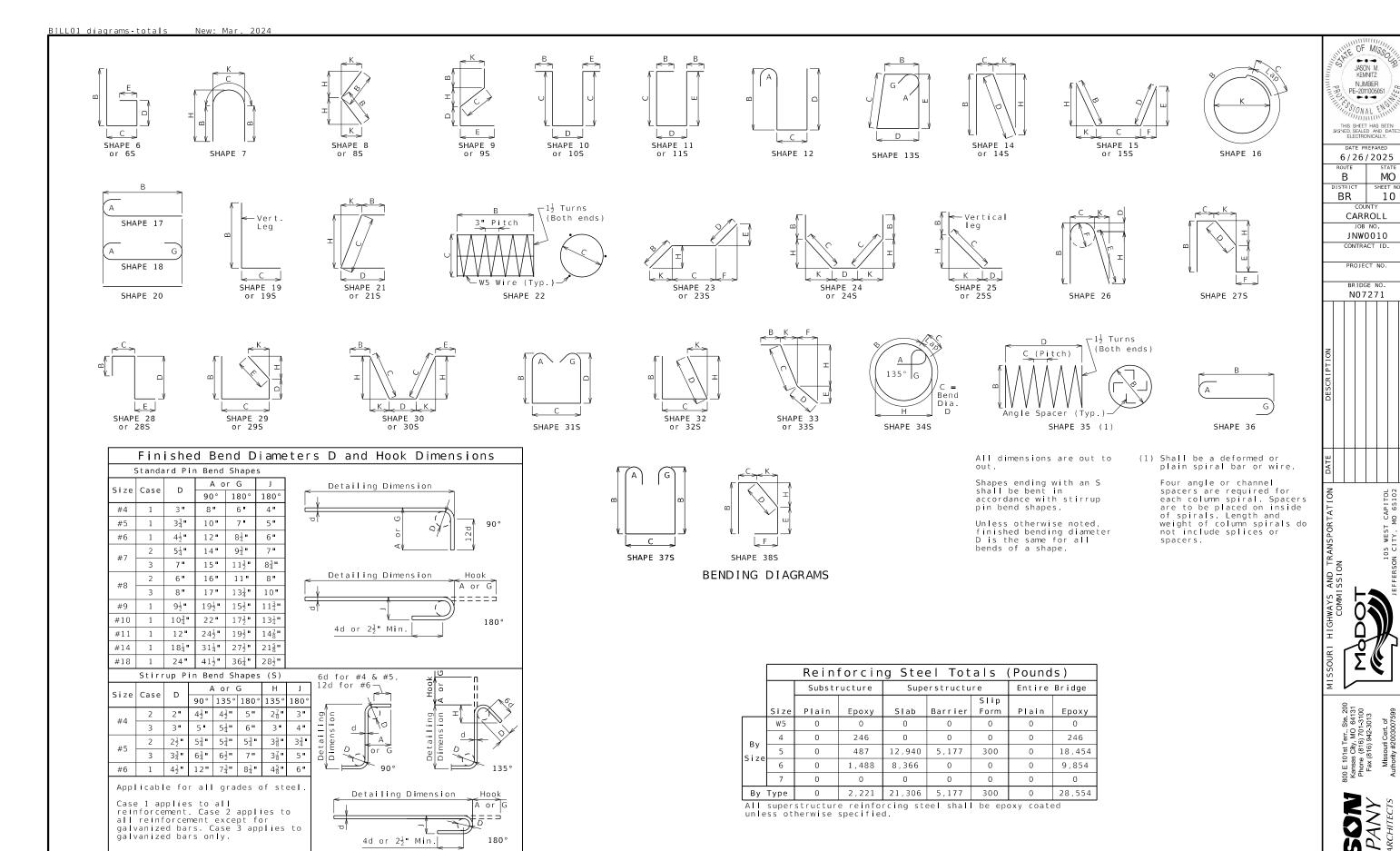
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DATE PE	REPARED									
6/26/2025										
ROUTE	STATE									
В	MO									
ISTRICT	SHEET NO.									
BR	8									
COU	COUNTY									
CARE	ROLL									

JOB NO. JNW0010 CONTRACT ID.

PROJECT NO







BILLO3 data tables

Bill of Reinforcing Steel												 			Bill of Reinforcing						-						
. Size/						Dimension		1	1 1/		Actual		No. Size/				_				imension	_	1	14	_		
Size/ . Mark	Location	Codes	V ft in.	C ft in	f t in	E E	F F	ft in		Length l		We I gn t		Mark	Location	Codes E SH S		B + in	C ft in	D	E ft in	f + n	ft in	K K	Length ft in.		_
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5 U103	SLAB REST	E 20 S	2 6.000)						2 6 2	: 6	167															
	INT. BENTS																								+		-
	NO. 2 & 3												-												+		
	110. 2 4 3																								+ +		
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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.

All bars shall be Grade 60.

BILL OF REINFORCING STEEL

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.

SH = Required shape, see bending diagrams.

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JASON M. KEMNITZ NUMBER

6/26/2025

CARROLL JOB NO.
JNW0010 CONTRACT ID. PROJECT NO. BRIDGE NO. N07271

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SHEET NO

11

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For bending diagrams and steel reinforcing totals, see Sheet No. 11.

Detailed March 2025 Checked April 2025

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

Sheet No. 11 of 11

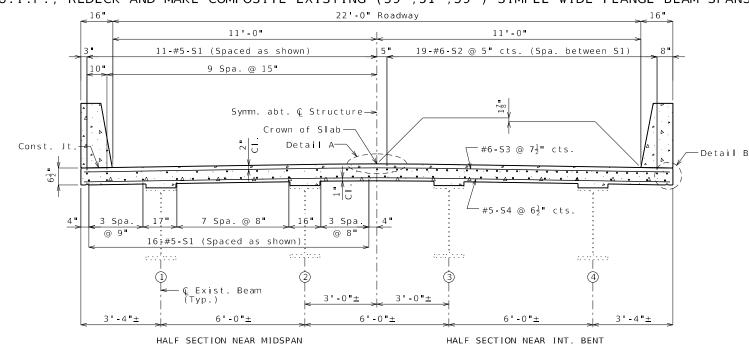
fy = 60,000 psi

Table Showing S2 Bar Lengths Int. Bent No. 2 Int. Bent No. 3 Span (1-2)Span (2-3)Span (2-3)Span (3-4 5'-0" 5'-0" 5 0 5'-0"

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

** Unless otherwise shown.

U.I.P., REDECK AND MAKE COMPOSITE EXISTING (39',51',39') SIMPLE WIDE FLANGE BEAM SPANS



- € Roadway -Cross Slope 3/16" per ft -Profile Grade (Match exist.±) Top of Slab Crown of Slab 2'-0" 4'-0" Parabolic Crown

DETAIL A — Const. Jt. -Ç 3/4" Drip Ğroove (Typ.)

DETAIL B

General Notes:

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

Design Loading:

H15-44 (1-Lane) (1957) (Existing) HS20-44 (New Construction)

No Future Wearing Surface Earth - 120 lb/cf, Equivalent Fluid Pressure 45 lb/cf

Fatigue Stress - Case III Design Unit Stresses:

Class B-1 Concrete (Barrier) Class B-2 Concrete (End Bents & Superstructure, f'c = 4,000 psif'c = 4,000 psiexcept Barrier)
Reinforcing Steel (ASTM A615 Grade 60)

All joint filler shall be in accordance with Sec 1057 fo 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.

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

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

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

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

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

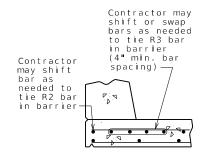
The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved qualified special mortar in accordance with Sec 704.

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

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

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

TYPICAL SECTION THRU SLAB



OPTIONAL SHIFTING TOP BARS AT BARRIER

Estimated Quantities		
I t em		Total
Removal of Existing Bridge Deck	sq. foot	3,137
Bridge Approach Slab (Minor)	sq. yard	100
Slab on Steel	sq. yard	360
Type H Barrier	linear foot	262
Substructure Repair (Formed)	sq. foot	75
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Shear Connectors	each	3,060
Strengthening Existing Beams	lump sum	1
Slab Drain	each	22
Surface Preparation for Applying Epoxy-Mastic Primer	lump sum	1
Aluminum Epoxy-Mastic Primer	lump sum	1

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

Estimated Quantities fo	r Slab on St	eel
I t em		Total
Class B-2 Concrete	cu. yard	92
Reinforcing Steel (Epoxy Coated)	pound	30,403

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

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

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

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

REPAIRS TO BRIDGE: ROUTE JJ OVER WEST FORK WAKENDA CREEK

ROUTE JJ FROM ROUTE AA TO ROUTE DD ABOUT 2.5 MILES EAST OF ROUTE AA BEGINNING STATION 124+42.0 \pm (MATCH EXISTING)

JASON M. KEMNITZ

NUMBER

PE-2011005051

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6/26/2025

CARROLL

LOB NO JNW0010

CONTRACT ID.

PROJECT NO

BRIDGE NO N08261

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COMPANY \bigcup

DETAILS OF CONCRETE REMOVAL AT END BENTS

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

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

General Notes:

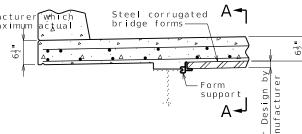
Stay-In-Place Forms:

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

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

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

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



Pouring and Finishing Slab:

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

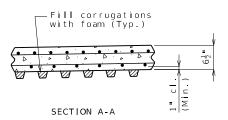
Slab shall be poured upgrade from end to end at a minimum rate of 25 cubic yards per hour.

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

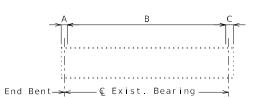
Bridge deck surface may be finished with a vibratory screed.

Haunching:

Slab is to be considered a uniform thickness as shown on the plans. Haunching will vary. See front sheet for slab thickness. Adjust haunches as needed to match existing grade on Rte. JJ.

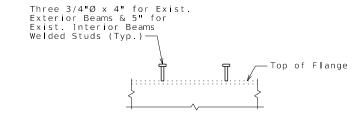


OPTIONAL STAY-IN-PLACE FORM DETAILS

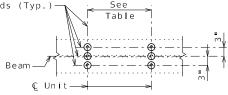


ELEVATION SHOWING SHEAR CONNECTOR SPACING

	TABLE SHOWING SHEAR CONNECTOR UNIT SPACING										
Span	S.C. per unit	Α	В	С							
(1-2)	3	5"±	77 Units @ 6" cts.	5"±							
(2-3)	3	5 " ±	101 Units @ 6" cts.	5 " ±							
(3-4)	3 5"±		77 Units @ 6" cts.	5 "±							
	Total shear connectors required 3,060										



Three 3/4"Ø x 4" for Exist. Exterior Beams & 5" for Exist. Interior Beams Welded Studs (Typ.)



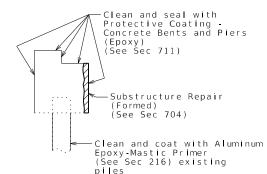
ELEVATION

PLAN OF SHEAR CONN. (3 PER UNIT)

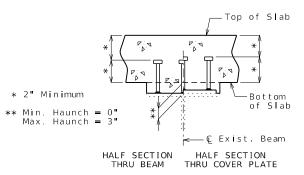
DETAILS OF SHEAR CONNECTORS

The cost of supplying and installing shear connectors will be considered completely covered by the contract unit price for Shear Connectors.

Shear connectors shall be in accordance with Sec 712, 1037 & 1080.



TYPICAL SECTION THRU INT. BENTS NO. 2 & 3 SHOWING PROTECTIVE COATING



SECTION THRU EXIST.
BEAM SHOWING
SHEAR CONNECTORS

Structural Steel Protective Coating:

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

JASON M.
KEMNITZ

NIMBER
PE-2011005051

THIS SHEET MAS BEEN

DATE PREPARED

6/26/2025

ROUTE STATE

J J MO

DISTRICT SHEET NO.

BR 2

CARROLL

JOB NO.

JNW0010

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
NO8261

COMMISSION

COMMISSION

105 WEST CAPITOL

105 WEST CAPITOL

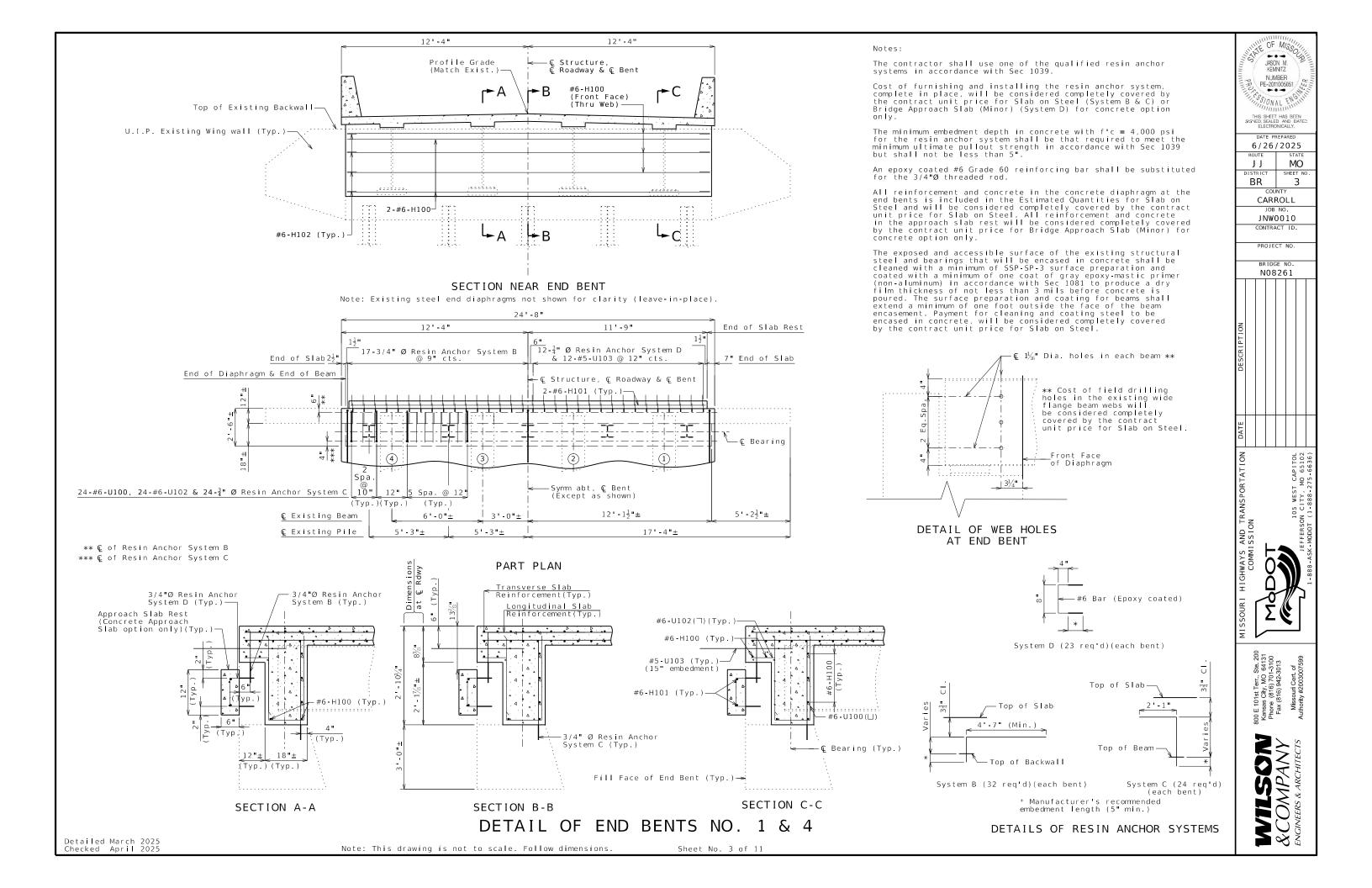
106 WEST CAPITOL

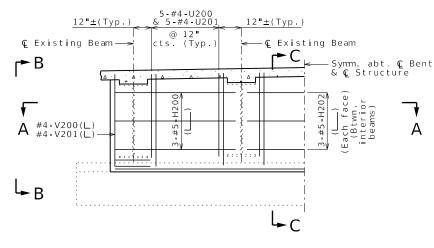
107 WEST CAPITOL

107 WEST CAPITOL

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WILSON &COMPANY ENGINEERS & ARCHITECTS

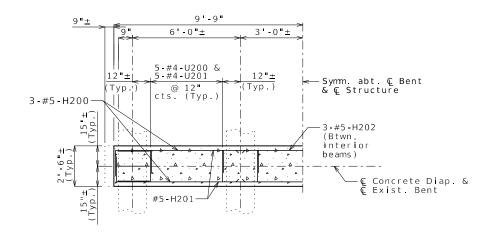


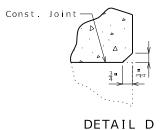


ELEVATION B-B

PART SECTION NEAR INTERMEDIATE BENT

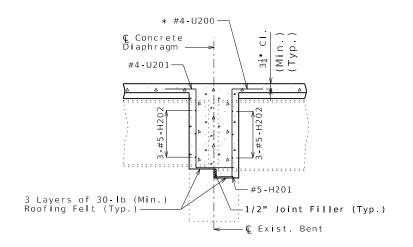
Note: Existing steel diaphragms not shown for clarity (leave-in-place).





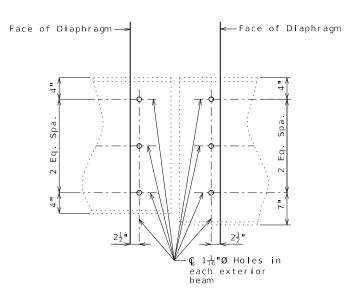
SECTION A-A

DETAILS OF CONCRETE DIAPHRAGMS AT INTERMEDIATE BENTS NO. 2 & 3



SECTION C-C

* Bend or cut bottom leg of U Bars in field where neccessary to miss existing steel diaphragm bent plate



DETAILS OF WEB HOLES IN EXTERIOR BEAMS AT INTERMEDIATE BENTS

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

Cost of field drilling holes in existing exterior wide flange beam webs and placing roofing felt and joint filler will be considered completely covered by the contract unit price for Slab on steel.

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



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6/26	/2025
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JJ	MO
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BR	4
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-,	ROLL
JOB	NO.
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BRIDG	E NO.
	201

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DESCRIPTION				
DATE				

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COMMISSION

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General Notes:

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

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

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

Reinforcing steel shall be shifted to clear drains.

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

and nuts shall be galvanized in accordance with AASHTO M 232 (ASTM A153), Class C.

All 1/2-inch diameter bolts shall be ASTM A307, except as shown.

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

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

JASON M. KEMNITZ NUMBER PE-2011005051 1,5810NAL ENS

6/26/2025 11 MO SHEET NO BR 5

CARROLL LOB NO

> JNW0010 CONTRACT ID.

PROJECT NO.

BRIDGE NO N08261

Notes for FRP Drain:

tubing ASTM A500 or A501.

accordance with ASTM A123

Notes for Steel Drain: Slab drains may be fabricated of either 1/4-inch welded sheets of ASTM A709 Grade 36 steel or from 1/4-inch structural steel

The drains shall be galvanized in

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

Outside dimensions of drains are 8" x 4".

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

Minimum reinforced wall thickness shall be 1/4 inch.

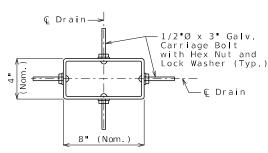
The resin used shall be ultraviolet (UV) resistant and/or have UV inhibitors mixed throughout. Drains may have an exterior coating for additional UV resistance.

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

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

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

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PLAN OF FRP DRAIN OPTION

SLAB DRAINS

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

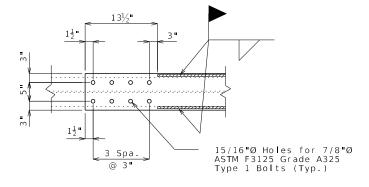
PART PLAN OF SLAB AT DRAIN

PART SECTION NEAR DRAIN

Detailed March 2025 Checked April 2025

Sheet No. 5 of 11

PART ELEVATION OF EXTERIOR BEAMS NO. 1 & 4 SHOWING COVER PLATE INSTALLATION SPAN (2-3)



TYPICAL DETAIL OF THE ENDS OF COVER PLATES (BOTTOM VIEW)

Notes

Beam with end-bolted cover plates shall be installed in the following sequence after existing bridge deck is removed:

- 1. Drill holes in cover plate and flange.
- 2. Clean faying surfaces. (See Special Provisions)
- 3. Install and tighten bolts.
- 4. Weld cover plate to flange.

Fabricated Structural Steel shall be ASTM A709 Grade 36, except as noted.

Payment for 514 pounds of new cover plates, complete in place, will be considered completely covered by the contract lump sum price for Strengthening Existing Beams.

Notch toughness is required for all cover plates.

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

JASON M. KEMNITZ

NAMBER PE-2011005051

THIS SHEET HAS BEEN STAYED, SALAED AND DATE:

DATE PREPARED
6/26/2025
ROUTE STATE
JJ MO
DISTRICT SHEET NO.
BR 6
COUNTY
CARROLL
JOB NO.
JNW0010
CONTRACT ID.

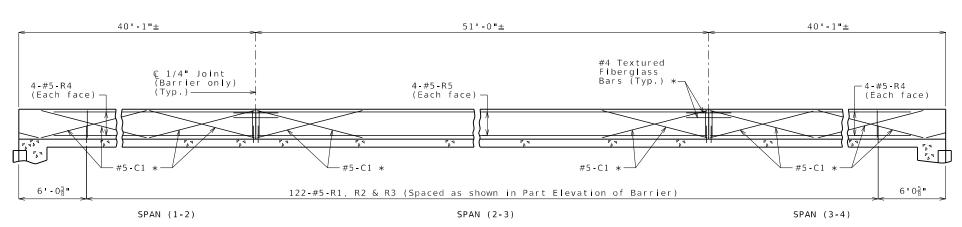
PROJECT NO.

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COMMISSION

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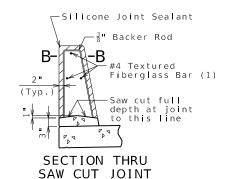
105 WEST CAPITOL
JEFFERSON CITY, MO 65102

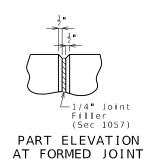


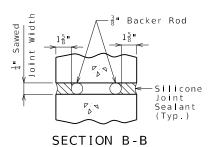


ELEVATION OF BARRIER

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



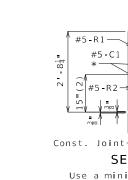




#4 Textured Fiberglass (Formed or Saw Cut) Sa

PART ELEVATION OF BARRIER

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



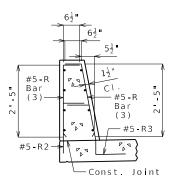
SECTION A-A Use a minimum lap of 3'-1" for #5 horizontal barrier bars.

└─ #5 - R3

 $6\frac{1}{8}$

The cross-sectional area above the slab is 2.89 square feet.

(2) To top of bar



R-BAR PERMISSIBLE ALTERNATE SHAPE

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

General Notes:

* Slip-formed option only.

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

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

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

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

Concrete in barrier shall be Class B-1.

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

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

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

For slip-formed option, both sides of barrier shall have a vertically broomed finish and the top shall have a transversely broomed finish. JASON M. KEMNIEN PE-2011005051 JASON M. KEMNIEN NOMBER PE-2011005051 JASON MAL ENGINEERS OF THE SHEET HAS BEEN SISTED SCALED AND DATE:

DATE PREPARED

6/26/2025

ROUTE STATE

J J MO

DISTRICT SHEET NO

BR 7

COUNTY

CARROLL

JOB NO.

J NWO 0 1 0

CONTRACT ID.

DESCRIPTION DESCRI

COMMISSION

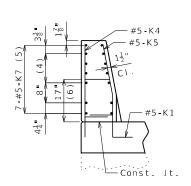
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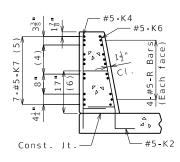
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800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013 Missouri Cert. of

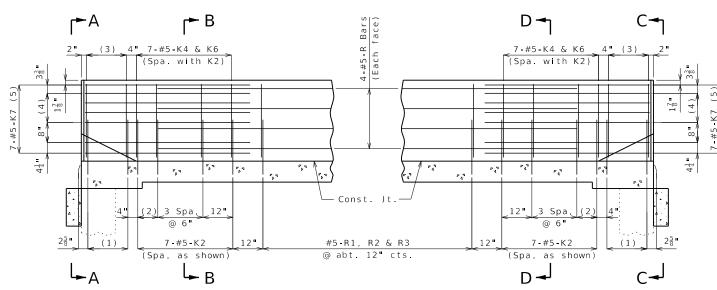


TYPE H BARRIER



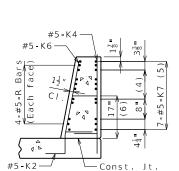


ELEVATION A-A



PART ELEVATION

- (1) 5-#5-K1 @ 4" cts.
- (2) 2 Spaces @ 4"
- (3) 5-#5-K4 and 5-#5-K5, spaced with K1
- (4) 3 Spaces @ 3¹³₁₆
- (5) Spaced as shown, each face
- (6) To top of bar



ELEVATION C-C

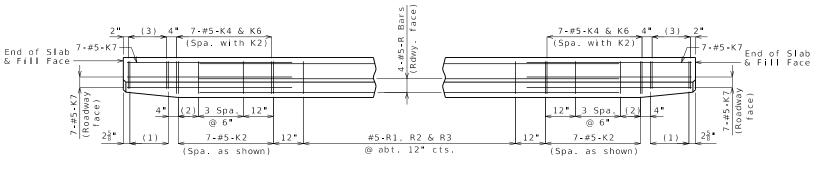
#5-K4

#5-K5

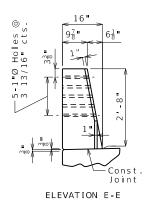
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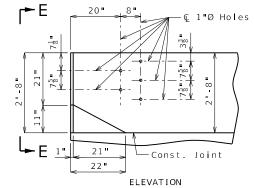
SECTION D-D

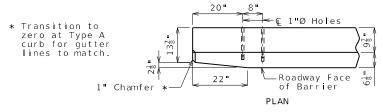
SECTION B-B



PART PLAN







DETAILS OF GUARD RAIL ATTACHMENT

General Notes:

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

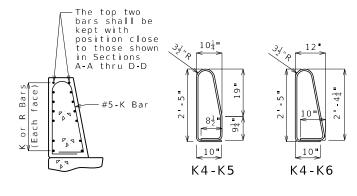
Reinforcing Steel:

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

Use a minimum lap of 2'-6" between K7 bars and R bars.

TYPE H BARRIER AT END BENTS

(Left barrier shown, right barrier similar)



PERMISSIBLE ALTERNATE SHAPES

(Other K bars not shown for clarity)

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

All dimensions are out to out.



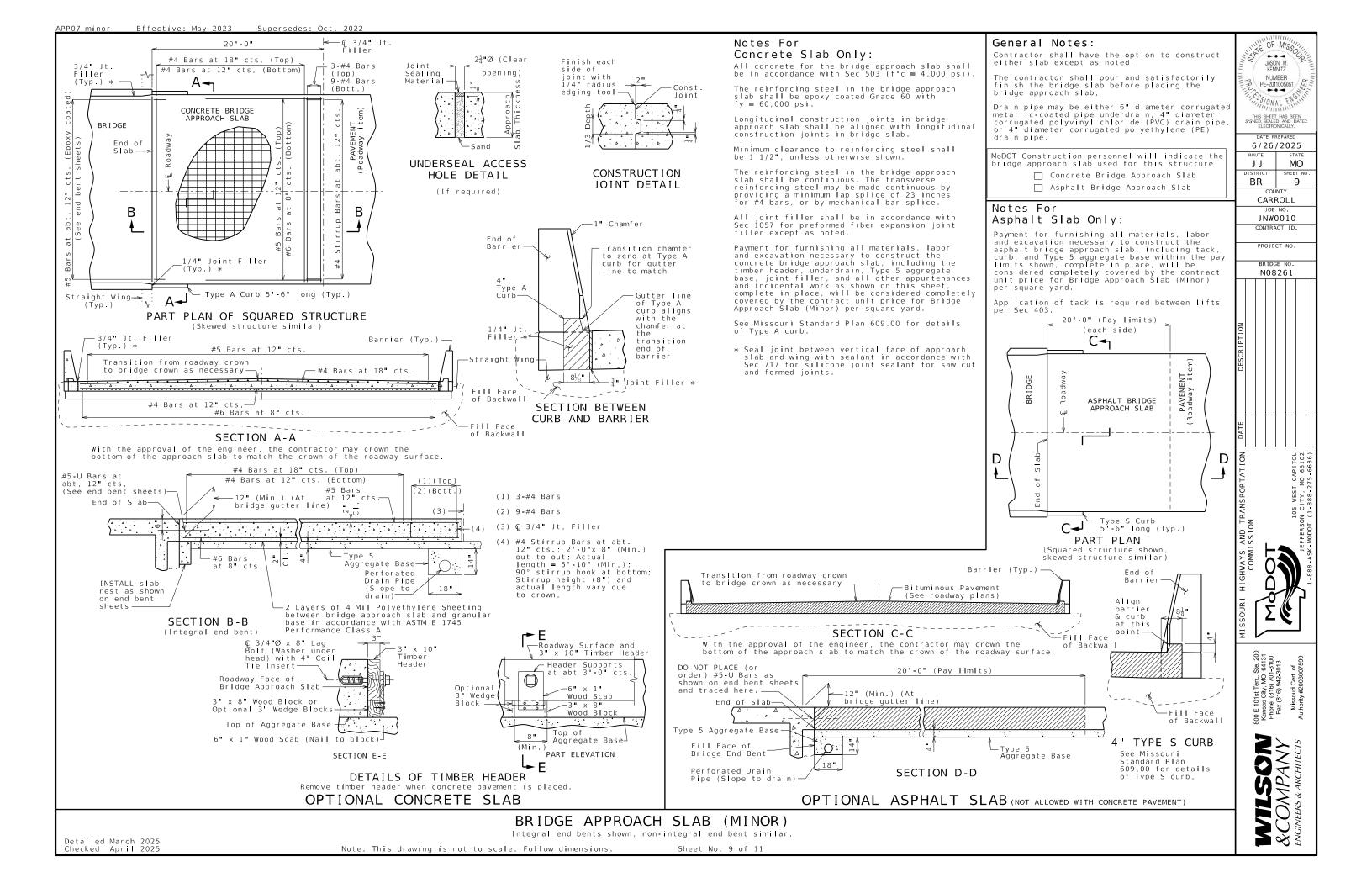
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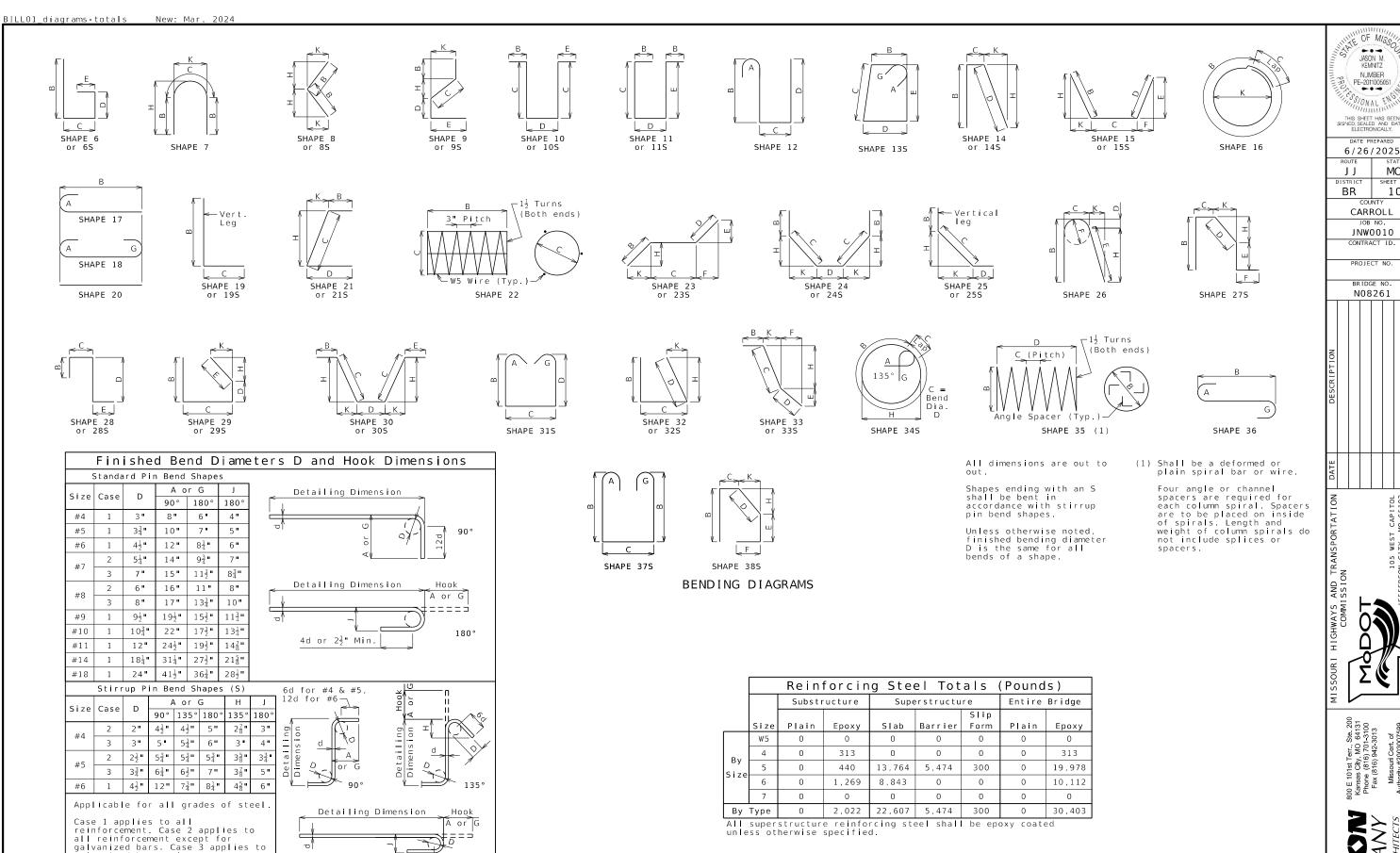
6/26/2025 JJ MO SHEET NO BR 8

CARROLL LOB NO JNW0010

CONTRACT ID. PROJECT NO.







ğalvanized bars only.

180°

4d or $2\frac{1}{2}$ Min.

JASON M. KEMNITZ

NUMBER

6/26/2025

CARROLL

LOB NO JNW0010 CONTRACT ID. PROJECT NO.

BRIDGE NO

N08261

MO SHEET NO

10

11

BR

<u>New: Mar. 2024</u> BILL03_data_tables

Bill of Reinforcing Steel								Bill of Reinforcing Steel																		
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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.

All bars shall be Grade 60.

BILL OF REINFORCING STEEL

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.

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

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JASON M. KEMNITZ NUMBER PE-2011005051

6/26/2025

CARROLL JOB NO.
JNW0010
CONTRACT ID.

PROJECT NO. BRIDGE NO. N08261

MO

SHEET NO

11

For bending diagrams and steel reinforcing totals, see Sheet No. 10.

Detailed March 2025 Checked April 2025

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

Sheet No. 11 of 11