#### DESIGN DESIGNATION LINN - ROUTE B

A.A.D.T. - 2025 = 109

A.A.D.T. - 2045 = 115 D.H.V. = 9%

> T = 13% V = 55 M.P.H. D = 51%/49%

FUNCTIONAL CLASSIFICATION = MAJOR COLLECTOR

#### LINN - ROUTE U

A.A.D.T. - 2025 = 262A.A.D.T. - 2045 = 276

D.H.V. = 11%

T = 14%V = 55 M.P.H.

#### GRUNDY - ROUTE E

A.A.D.T. - 2025 = 406 A.A.D.T. - 2045 = 427

D.H.V. = 9%

T = 26%

V = 55 M.P.H. D = 49%/51%

FUNCTIONAL CLASSIFICATION = MAJOR COLLECTOR

#### NO RIGHT OF WAY ACQUISITION

#### CONVENTIONAL SYMBOLS

BUILDINGS AND STRUCTURES ロモニコ GUARD RAIL GUARD CARLE •••• CONCRETE RIGHT-OF-WAY MARKER STEEL RIGHT-OF-WAY MARKER LOCATION SURVEY MARKER  $\circ$ UTILITIES FIBER OPTICS – FO – <del>-FO-</del> OVERHEAD CABLE TV -OTV-<del>-OTV-</del> UNDERGROUND CABLE TV OVERHEAD TELEPHONE -UTV-- OT -<del>-UTV</del> -<del>0T</del>-- UT -- OE -- UE -- S -- SS -UNDERGROUND TELEPHONE -UT OVERHEAD POWER -OE-UNDERGROUND POWFR —UE— —S SANITARY SEWER STORM SEWER <del>-ss</del>-WATER MANHOLE Q . FIRE HYDRANT ~ • WATER VALVE ···· WATER METER DROP INLET DITCH BLOCK = GROUND MOUNTED SIGN LIGHT POLE H-FRAME POWER POLE TELEPHONE PEDESTAL Δ FENCE

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

 $\boxtimes$ 

CHAIN LINK WOVEN WIRE

GATE POST

BENCHMARK

#### MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

### PLANS FOR PROPOSED STATE HIGHWAY



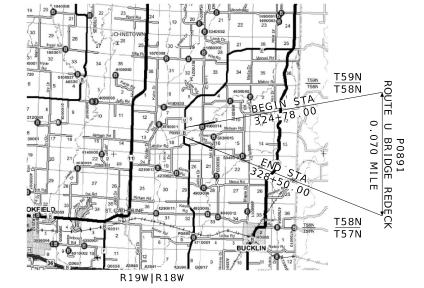
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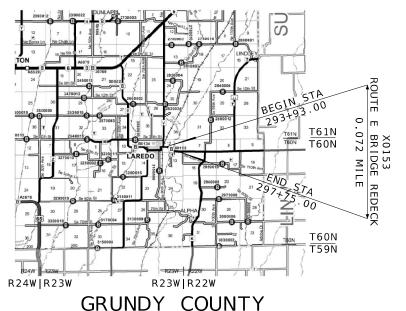
#### LINN & GRUNDY COUNTIES



NOT TO SCALE

#### LINN 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
TITLE SHEET	1
TYPICAL SECTIONS (TS) (3 SHEETS)	2
QUANTITIES (QU) (5 SHEETS)	3
PLAN-PROFILE (PP)	4 - 6
SPECIAL SHEET (SS)	7 - 9
TRAFFIC CONTROL SHEETS (TC)	10-12
BRIDGE DRAWINGS (B)	
A18021	1-10
P08911	1-11
X01531	1-10

NUM PE-201	MISSOCIAL MISSOC
8/6/	2025
ROUTE	STATE
B, U, & E	MO
	SHEET NO.
DISTRICT	1 1
NW	1
NW cou	INTY
NW cou	GRUNDY
NW  COUL LINN &	GRUNDY
NW  COUL LINN & JOB JNW	GRUNDY NO. D013
NW  COUL  LINN &  JOB  JNW  CONTRA	GRUNDY NO. 0013
NW COLLINN & JOB JNW CONTRA	GRUNDY NO. D013

# TION DATE DESCRIPTION PITOL 65:102 66:36)

#### LENGTH OF PROJECT

LINN - ROUTE B
BEGINNING
END STA. 363+75.00
STA. 366+53.00

APPARENT LENGTH 278.00 FEET

LINN - ROUTE U

BEGINNING STA. 324+78.00 END STA. 328+50.00

APPARENT LENGTH 372.00 FEET

GRUNDY - ROUTE E BEGINNING STA. 293+93.00

END STA. 297+75.00

APPARENT LENGTH 382.00 FEET

TOTAL CORRECTIONS 0.00 FEET

NET LENGTH OF PROJECT 1032.00 FEET

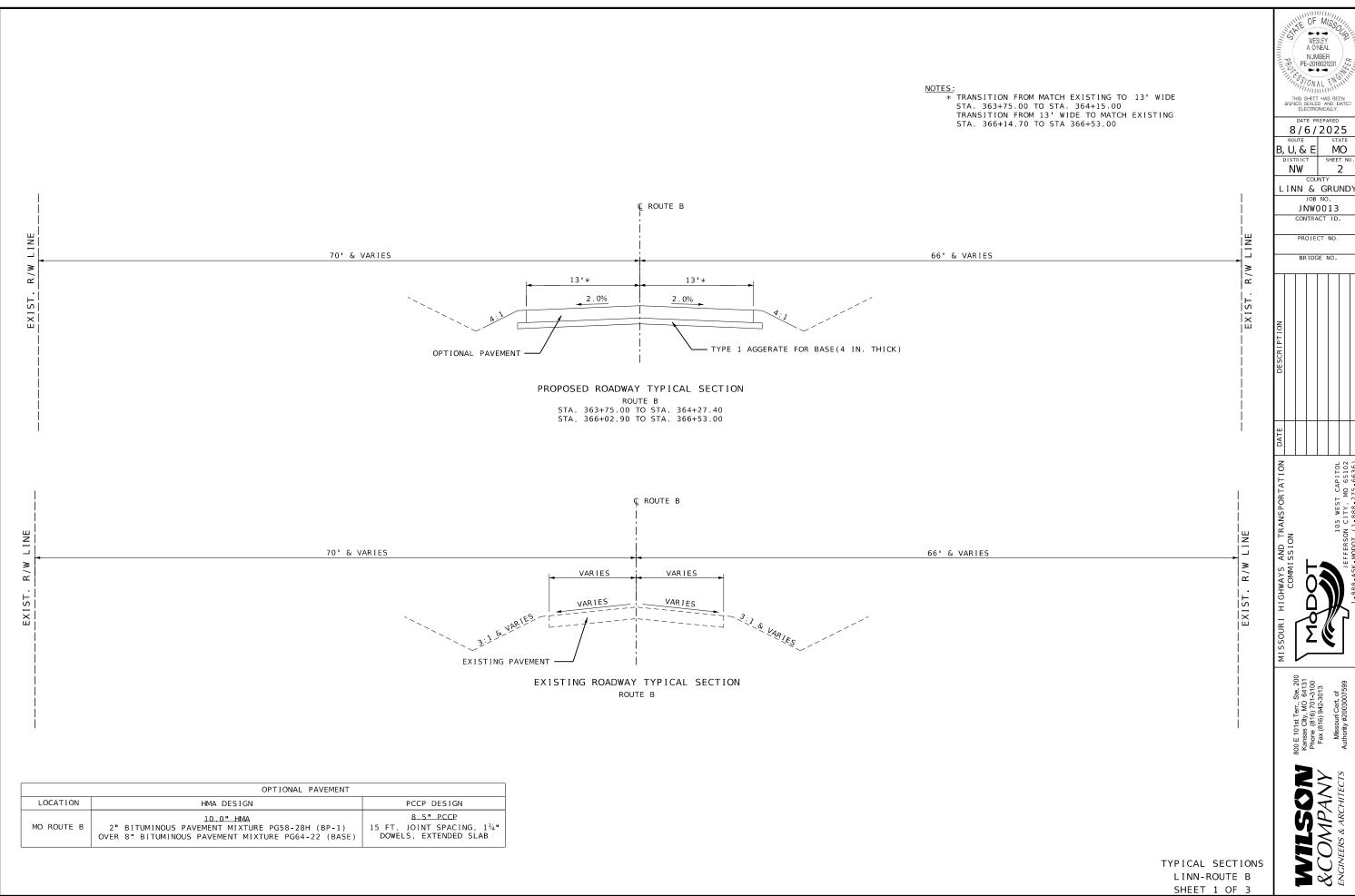
STATE LENGTH 0.195 MILES

FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES 0.4 ACRES



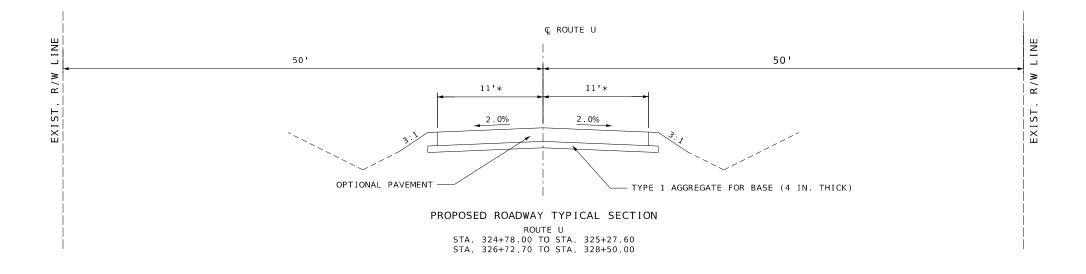
800 E 101st Terr., Ste. 20 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013 Missouri Cert. of Authority #2003007599

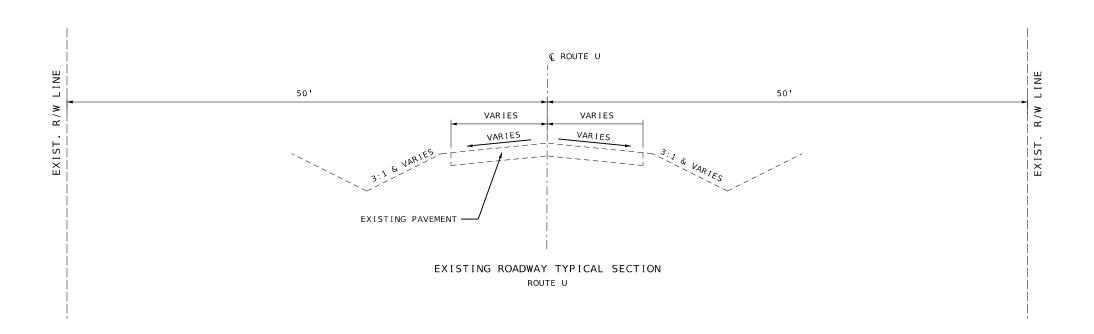
WILSON &COMPANY NOWFERS & ARCHITECTS



NOTES:

\* TRANSITION FROM MATCH EXISTING TO 11' WIDE STA. 324+78.00 TO STA. 325+24.00
TRANSITION FROM 11' WIDE TO MATCH EXISTING STA. 327+97.00 TO STA 328+50.00





	OPTIONAL PAVEMENT	
LOCATION	HMA DESIGN	PCCP DESIGN
MO ROUTE U	10.0" HMA 2" BITUMINOUS PAVEMENT MIXTURE PG58-28H (BP-1) OVER 8" BITUMINOUS PAVEMENT MIXTURE PG64-22 (BASE)	$\begin{array}{c} 8.5" \ \ \text{PCCP} \\ 15 \ \ \text{FT. JOINT SPACING, } \ 1^{1}\!\!4" \\ \text{DOWELS, EXTENDED SLAB} \end{array}$

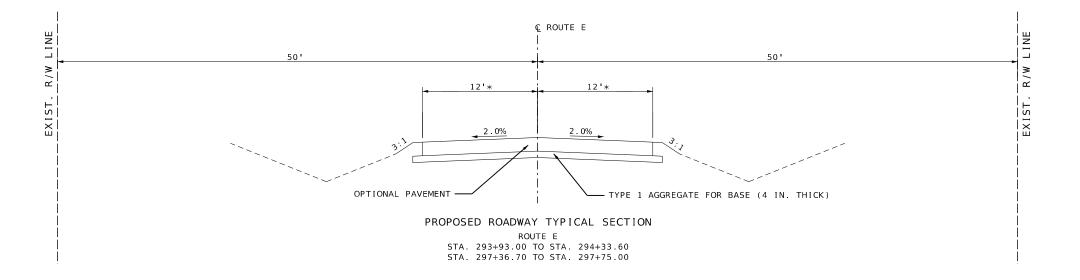
TYPICAL SECTIONS LINN-ROUTE U

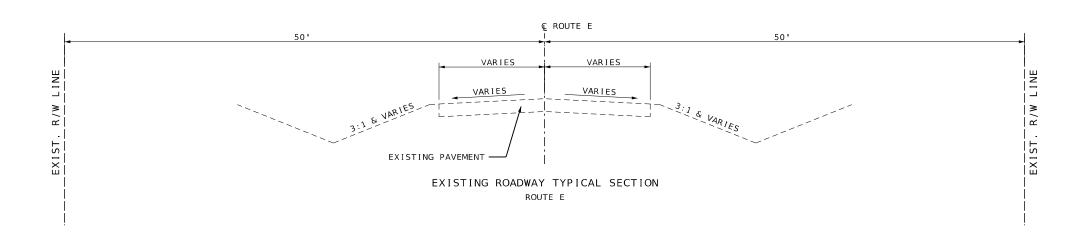
WESLEY A ONEAL NUMBER PE-2018021231 8/6/2025 3, Ü, & E MÖ NW 2 LINN & GRUNDY JOB NO.
JNW0013
CONTRACT ID. PROJECT NO. BRIDGE NO.



NOTES:

\* TRANSITION FROM MATCH EXISTING TO 12' WIDE STA. 293+93.00 TO STA. 294+33.60
TRANSITION FROM 12' WIDE TO MATCH EXISTING STA. 297+36.70 TO STA. 297+75.00





OPTIONAL PAVEMENT							
LOCATION	HMA DESIGN	PCCP DESIGN					
MO ROUTE E	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, $1^{1}\!\!4$ " DOWELS, EXTENDED SLAB					

TYPICAL SECTIONS GRUNDY-ROUTE E SHEET 3 OF 3

WESLEY A ONEAL NJMBER PE-2018021231

O / C / O O O F					
8/6/	2025				
ROUTE STATE					
B, U, & E	MO				
DISTRICT SHEET NO.					
NW 2					
COLINTY					

_ 1 NN	۱ &	GRUND
	JOB	NO.
J	NW	0013
CC	NTRA	CT ID.

PROJECT	NO



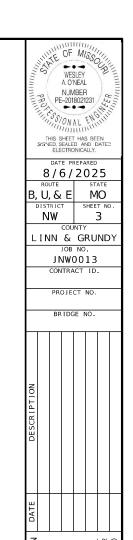


TEMPORARY EROSION CONTROL						
				TYPE 2C		
BEGIN	END	OFFSET	SILT	EROSION	TYPE C	SEDIMENT
	STATION		FENCE	CONTROL	BERM	REMOVAL
STATION	STATION		FENCE		DEKIM	KEMOVAL
				BLANKET		
			(LF)	(SY)	(LF)	
A1802 - F	OUTE B					
363+75	364+15	RT	48			0.5
363+75	364+23	LT	52			0.5
365+98	366+50	RT	52			0.5
366+25	366+51	LT	27			0.3
363+75	364+19	RT		60		
363+75	364+26	LT		82		
365+95	366+51	RT		133		
366+21	366+51	LT		73		
364+15	364+85	RT/LT			160	10
365+41	366+26	RT/LT			167	10
		TOTAL	179	348	327	21.8
P0891 - F	OUTE U					
324+78	325+20	RT	48			0.5
324+78	325+25	LT	51			0.5
326+86	328+50	RT	171			1.7
326+70	328+50	LT	186			1.9
324+78	325+20	RT		41		
324+78	325+25	LT		64		
326+86	328+50	RT		336		
326+70	328+50	LT		342		
325+21	325+88	RT/LT			174	10
326+10	326+86	RT/LT			193	10
		TOTAL	456	783	367	24.6
X1053 - F	OUTE E					
293+93	294+54	RT	61			0.6
293+93	294+54	LT	61			0.6
297+17	297+49	RT	37			0.4
297+17	297+38	LT	28			0.3
297+66	297+72	LT	34			0.3
293+93	294+54	RT		139		
293+93	294+53	LT		142		
297+17	297+49	RT		33		
297+17	297+41	LT		65		
297+61	297+72	LT		20		
296+05	297+17	RT/LT			272	10
		TOTAL	221	399	272	12.2
	PA	/ TOTAL	856	1530	966	59

	PAVEMENT					
			TYPE 1		GRAVEL	
BEGIN	END	OFFSET	AGGREGATE	OPTIONAL	OR	
STATION	STATION		BASE (4")	PAVEMENT	CRUSHED	
			(SY)	(SY)	STONE (B)	
					(SY)	
A1802 - F	OUTE B			•		
363+75	364+27	CL	156	143.7		
366+03	366+53	CL	145	134.5		
TOTAL		301	278.2			
P0891 - F	OUTE U					
324+78	325+27	CL	121	112.1		
326+73	328+50	CL	480	422.5		
		TOTAL	601	534.6		
X1053 - P	OUTE E					
293+93	294+34	CL	109	99.1		
297+37	297+75	CL	104	94.9		
297+37	297+71	LT			28	
	•	TOTAL	213	194	28	
	PA	Y TOTAL	1115	1006.8	28	

	PERMANENT EROSION CONTROL							
			FURNISHING	PLACING			PERMANENT	
BEGIN	END	OFFSET	TYPE 1	TYPE 1	FURNISHING	PLACING	EROSION	
STATION	STATION		ROCK DITCH	ROCK DITCH	TYPE 2	TYPE 2	CONTROL	
			LINER	LINER	ROCK BLANKET	ROCK BLANKET	GEOTEXTILE	
			(CY)	(CY)	(CY)	(CY)	(SY)	
A1802 - F	ROUTE B							
364+190	364+75	LT/RT			191	191	286	
365+50	366+21	LT/RT			179	179	269	
		TOTAL			370	370	555	
P0891 - P	ROUTE U							
325+21	325+85	LT/RT			233	233	350	
326+13	326+86	LT/RT			328	328	492	
		TOTAL			561	561	842	
X1053 - F	ROUTE E							
294+31	294+34	RT	1.3	1.3			10	
294+31	294+34	LT	1.1	1.1			9	
296+07	296+60	LT/RT			183	183	275	
297+34	297+37	RT	1.1	1.1			9	
297+34	297+37	LT	1.1	1.1			9	
		TOTAL	4.6	4.6	183	183	312	
PAY TOTAL 4.6 4.6 1114					1114	1709		

REMOVAL OF IMPROVEMENTS						
BEGIN	END	OFFSET	DESCRIPTION	QUANTITY	UNITS	
STATION	STATION					
A1802 - ROUTE B						
363+75		RT/LT	SAW CUT	23	LF	
366+53		RT/LT	SAW CUT	22	LF	
363+75	364+47	RT/LT	PAVEMENT	180	SY	
365+83	366+53	RT/LT	PAVEMENT	194	SY	
364+45		RT/LT	SIGN	3	EA	
365+80		RT/LT	SIGN	3	EA	
			TOTAL	1	LS	
P0891 - F	ROUTE U					
324+78		RT/LT	SAW CUT	18	LF	
328+50		RT/LT	SAW CUT	18	LF	
324+78	325+47	RT/LT	PAVEMENT	161	SY	
326+54	328+50	RT/LT	PAVEMENT	470	SY	
313+27		RT	SIGN	1	EA	
317+92		RT	SIGN	1	EA	
323+43		RT	SIGN	1	EA	
325+08		RT/LT	SIGN	2	EA	
325+27		RT/LT	SIGN	2	EA	
325+47		RT/LT	SIGN	2	EA	
326+54		RT/LT	SIGN	2	EA	
326+75		RT/LT	SIGN	2	EA	
326+97		RT/LT	SIGN	2	EA	
328+39		LT	SIGN	1	EA	
332+40		LT	SIGN	1	EA	
338+07		LT	SIGN	1	EA	
			TOTAL	1	LS	
X1053 - F	ROUTE E					
293+93		RT/LT	SAW CUT	20	LF	
297+75		RT/LT	SAW CUT	21	LF	
293+93	294+54	RT/LT	PAVEMENT	153	SY	
297+17	297+75	RT/LT	PAVEMENT	149	SY	
294+54		RT/LT	SIGN	2	EA	
297+17		RT/LT	SIGN	2	EA	
294+11		RT	WELL	1	EA	
			TOTAL	1	LS	
			PAY TOTAL	1	LS	



MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

MADOT

105 WEST CAPITOL
COMMISSION

106 WEST CAPITOL
COMMISSION

107 WEST CAPITOL
COMMISSION
C

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



EARTHWORK							
BEGIN	END	OFFSET	GRADING				
STATION	STATION		CLASS :				
			(STA)				
A1802 - R	OUTE B						
363+75	364+58	LT/RT	1.6				
365+72	366+53 LT/RT		1.6				
	3.2						
P0891 - R	OUTE U						
324+78	325+50	LT/RT	1.4				
326+50	328+50	LT/RT	4.0				
		TOTAL	5.4				
X1053 - R	OUTE E						
293+93	294+54	LT/RT	1.2				
297+17	297+75	LT/RT	1.2				
	TOTAL	2.4					
	11.0						

MOBILIZATION
1 LUMP SUM

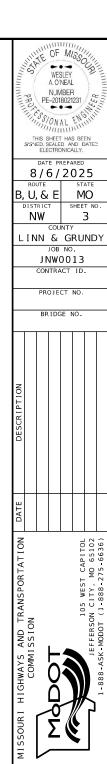
#### CONTRACTOR FURNISHED SURVEYING & STAKING 1 LUMP SUM

F	LOWABL	E BAC	< F I L L							
BEGIN END QTY REMARKS										
STATION	STATION	(CY)								
P0891 - R	OUTE U									
325+47	325+49	2	END BENT NO. 1							
TOTAL 2										

PAVEMENT MARKING											
			PERM. 4" YELLOW								
			CLASS 1								
BEGIN	END	OFFSET	PAVEMENT								
STATION	STATION		MARKING PAINT								
			TYPE P BEADS								
			(LF)								
A1802 - F	OUTE B										
363+55	366+73	CL	80								
		TOTAL	80								
P0891 - F	OUTE U										
323+42	328+70	CL	1056								
		TOTAL	1056								
X1053 - ROUTE E											
293+73	297+95	CL	106								
		TOTAL	106								
	PAY TOTAL 1242										

CLEARING & GRUBBING											
BEGIN END QTY REMARKS											
STATION	STATION	(ACRE)									
P0891 - F	OUTE U										
324+78	328+50	0.5	BRUSH AND SMALL TREE REMOVAL								
	TOTAL	0.5									
X1053 - F	ROUTE E										
293+93	297+75	0.5	BRUSH AND SMALL TREE REMOVAL								
	TOTAL	0.5									
PΔ	Y TOTAL	1.00									

	SEEDING AND MULCHING											
BEGIN	END		COOL SEASON									
STATION	STATION	OFFSET	MIXTURES	MULCHING								
			(AC)	(AC)								
A1802 - F	A1802 - ROUTE B											
363+75	0.1											
		TOTAL	0.1	0.1								
P0891 - F	ROUTE U											
324+78	328+50	RT/LT	0.2	0.2								
		TOTAL	0.2	0.2								
X1053 - F	X1053 - ROUTE E											
293+93	0.1											
		TOTAL	0.1	0.1								
	PAY TOTAL 0.4 0.4											



800 E 101st Terr., Ste. Kansas City, MO 641 Phone (816) 701-31C Fax (816) 942-3013



SUMMARY OF QUANTITIES SHEET 2 OF 5

SIGNS	CONCRETE	S	TRUC	TURAL	. ST	EEL	Р	ΙPΕ	POS	STS*		CK I NO	<u> </u>	U-				ER FOR A	ATED S	QUAR	E S						FFECTIVE: 07-01-2024
	FOOTINGS			POSTS	*						B <i>A</i>	\RS**		CHANNEL	-		2-INCH P		,		1-		INCH I		21100.6	BREAK-	DEMARKS
902 SIGNAL SIGNS TABULATED ON D-37A SHEET	EMBEDDED	4—	1 1		т —	ITOTAL	<del>                                     </del>			ITOT	\			POST		TOT		ANCHORS				OTAL	2.25" INSERT		CHORS	ACCEMBLY	REMARKS
SIGN SIGN STATION SIG	201	DOS.	TROST	POSTPOST	LIBC	TOTAL		OCT	POST L	BC TOTA		3/8" BAR	c		POST POS		12 GA.	DRIVEN 7 GA.	7 GA				(6 FT)	7 GA.	CONCRETE 7 GA.	ASSEMBLI	AND OTHER
NO. SIZE OR LOCATION DT				NO. 2 NO. 3								55 LBS/F		ITEM NO.	INO. INO.	ITEM	<b>I</b>	1	ITEM NO			TEM NO	ITEM NO.	ITEM NO	ITEM NO.	ITEM NO.	REQUIRED
LOG MILE SH		NO.		10.2 10.3		9031210		ال ۱۵۰		FT 90312		HTOTAL		_		90312	I	1	9031274				9031272A	9031281A	9031285	9031241	ITEMS
NO MILL		┨ '''○'		LF LF		LBS	_	I E		LBS			LBS	LF	LF LF			EACH	EACH	LF		LF	EACH	EACH	EACH	EACH	TILMS
12"X36" 364+02 HWY B, 16' RT			++		1	1 200	<del>                                     </del>		<del></del>		, EACH III	++			9.5	10		LACII	LACII	++			LACIT	EACH	EACH	EACH	
12"X36" 364+19 HWY B, 16' LT							1 1								9.5	10				+ +							
12"X36" 364+22 HWY B, 14.5' RT															9.5	10				1							
12"X36" 364+39 HWY B, 14.5' LT			1 1												9.5	10				1 1							
12"X36" 364+42 HWY B, 13' RT															9.5	10				1							
12"X36" 364+59 HWY B, 13' LT			1 1												9.5	10				1 1							
12"X36" 365+72 HWY B, 13' RT			1 1												9.5	10				1 1							
12"X36" 365+88 HWY B, 13' LT			1 1												9.5	10				1 1							
12"X36" 365+92 HWY B, 14.5' RT			1 1												9.5	10				1 1							
12"X36" 366+08 HWY B, 14.5' LT					<b> </b>										9.5	10											
12"X36" 366+12 HWY B, 16' RT					<b> </b>										9.5	10											
12"X36" 366+28 HWY B, 16' LT					<b> </b>										9.5	10											
12"X36" 325+11 HWY U. 14' RT			1 1					- 1							9.5	10				+							
12"X36" 325+05 HWY U, 14' LT			1 1					- 1							9.5	10				+							
12"X36" 325+31 HWY U. 12.5' RT	<u> </u>		1 1		1										9.5	10		1									
12"X36" 325+25 HWY U, 12.5' LT			1 1					- 1							9.5	10				+							
12"X36" 325+51 HWY U. 11' RT	<u> </u>		1 1		1										9.5	10		1									
12"X36" 325+45 HWY U, 11' LT	<u> </u>		1 1		1										9.5	10		1									
12"X36" 326+56 HWY U. 11' RT			1 1					- 1							9.5	10				+							
12"X36" 326+50 HWY U, 11' LT															9.5	10											
12"X36" 326+76 HWY U. 12.5' RT															9.5	10											
12"X36" 326+70 HWY U, 12.5' LT															9.5	10											
12"X36" 326+96 HWY U. 14' RT															9.5	10											
12"X36" 326+90 HWY U, 14' LT															9.5	10											
12"X36" 294+02 HWY E. 15' RT															9.5	10											
12"X36" 294+14 HWY E, 15' LT															9.5	10											
12"X36" 294+22 HWY E. 13.5' RT															9.5	10											
12"X36" 294+34 HWY E, 13.5' LT															9.5	10	)										
12"X36" 294+42 HWY E. 12' RT															9.5	10	)										
12"X36" 294+54 HWY E, 12' LT															9.5	10	)										
12"X36" 297+17 HWY E. 12' RT															9.5	10	)										
12"X36" 297+17 HWY E, 12' LT															9.5	10	)										
12"X36" 297+37 HWY E. 13.5' RT															9.5	10	)										
12"X36" 297+37 HWY E. 20.4' LT															9.5	10	)										
12"X36" 297+57 HWY E. 15' RT															9.5	10	)										
12"X36" 297+63 HWY E. 25' LT															9.5	10	)										
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SUBTOTA							]					L			_	36											
TOTA	L												**			36	0										
	_	*B	REAKAW	AY ASSE	MBLY	IS INC	IDENTA	L FC	DR STR	UCTURAL	STEEL AND	PIPE PO	STS.			•	•		-	•							

\*BREAKAWAY ASSEMBLY IS INCIDENTAL FOR STRUCTURAL STEEL AND PIPE POSTS.

\*\*BACKING BARS ARE TOTALED WITH STRUCTURAL STEEL OR PIPE POSTS.

SUMMARY OF QUANTITIES SHEET 3 OF 5

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

				9	STAND	ARD S	I GN	ASSEM	1BLIE:	 S					
			SIGN		E, DES						EACH	ı			
	STATION														
	OR	LOCATION													
NO.	LOG MILE														
			OM3 - R	OM3 - L											
		HWY B, 16' RT	1	- 1											
		HWY B, 16' LT HWY B, 14.5' RT	1	1											
		HWY B, 14.5' LT		1											
		HWY B, 13' RT	1												
		HWY B, 13' LT HWY B, 13' RT		1											
		HWY B, 13' LT	1	1											
	365+92	HWY B, 14.5' RT		1											
		HWY B, 14.5 LT	1												
		HWY B, 16' RT HWY B, 16' LT	1	1											
		HWY U. 14' RT	1												
	325+05	HWY U, 14' LT		1											
		HWY U. 12.5' RT HWY U, 12.5' LT	1	1											
$\vdash \vdash$		HWY U, 12.5 LT HWY U 11 RT	1	1											
		HWY U, 11' LT		1											
		HWY U. 11' RT		1											
		HWY U, 11' LT HWY U. 12.5' RT	1	1											
		HWY U, 12.5 LT	1	1											
		HWY U. 14' RT	_	1											
		HWY U, 14' LT	_1												
		HWY E. 15 RT HWY E, 15 LT	1	1											
		HWY E. 13.5' RT	1	1											
	294+34	HWY E, 13.5' LT		1											
		HWY E. 12' RT	1												
-		HWY E, 12' LT HWY E. 12' RT		1											
	297+17	HWY E, 12' LT	1	-											
		HWY E. 13.5' RT		1											
		HWY E. 20.4' LT	1	1											
		HWY E. 15' RT HWY E. 25' LT	1	1											
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		L				TYPE & S		
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	ARD OR SPECIAL		NO.		I	FLUORESCENT		
SIGN	DESIGNATION		EACH	SIZE	SH	SHF*	ST	STF*
		NO.			ITEM NO.	ITEM NO.	ITEM NO.	ITEM NO.
0112 0	TVD5 2 00 150T 1440V50 010VT		1.0	400000	9035004A	9035069A	9035011A	9035071A
OM3 - R	TYPE 3 OBJECT MARKER, RIGHT	-		12"X36"		54.00		
OM3 - L	TYPE 3 OBJECT MARKER, LEFT	_	18	12"X36"		54.00		
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ROUTE STATE
B, U, & E MO
DISTRICT SHEET NO.
NW 3 COUNTY
LINN & GRUNDY
JOB NO.
JNW0013
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

WESLEY
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NUMBER
PE-20180021231

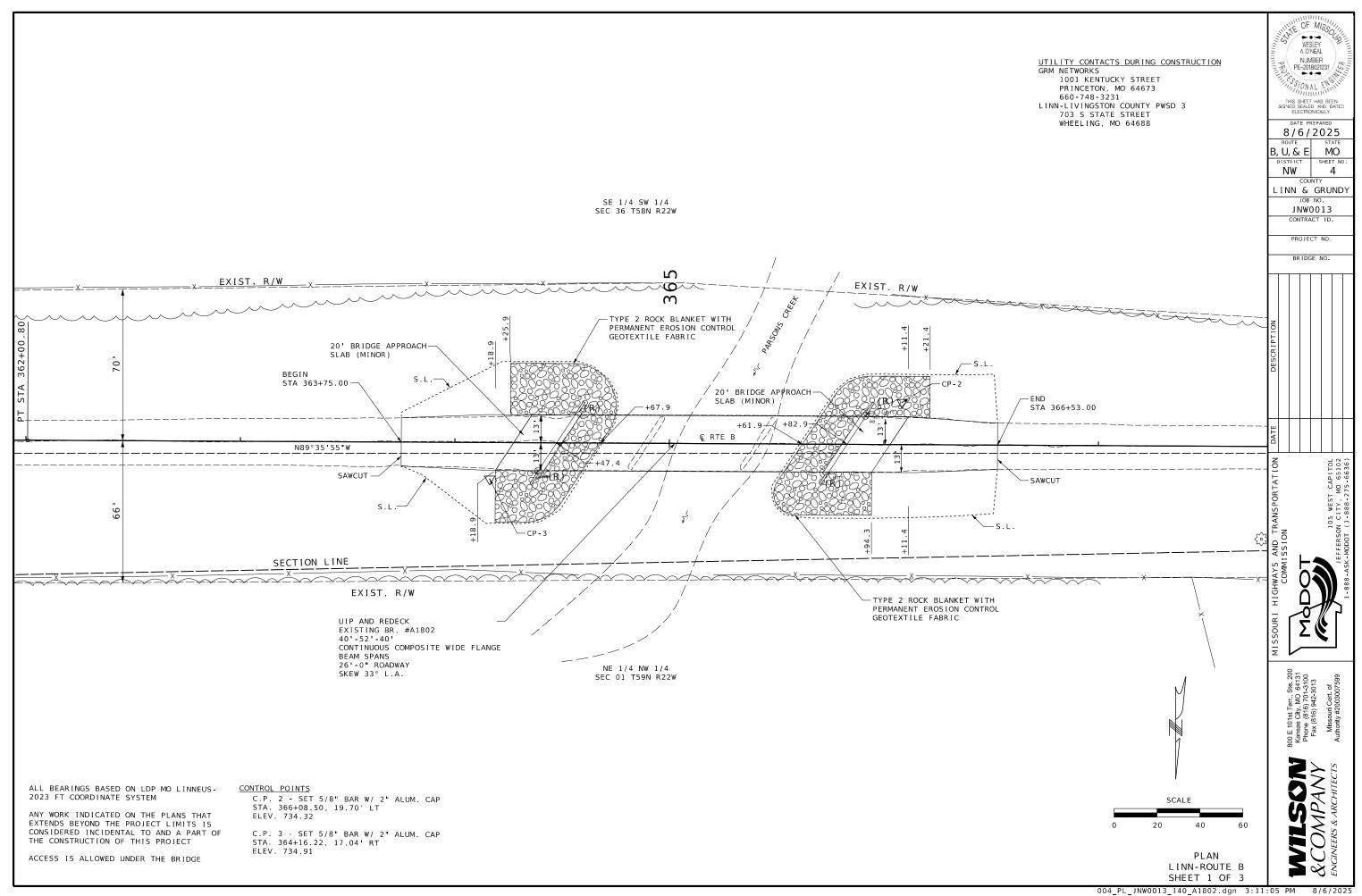
THIS SHEET HAS BEEN
SIGNED SALED AND DATED
ELECTRONICALLY.

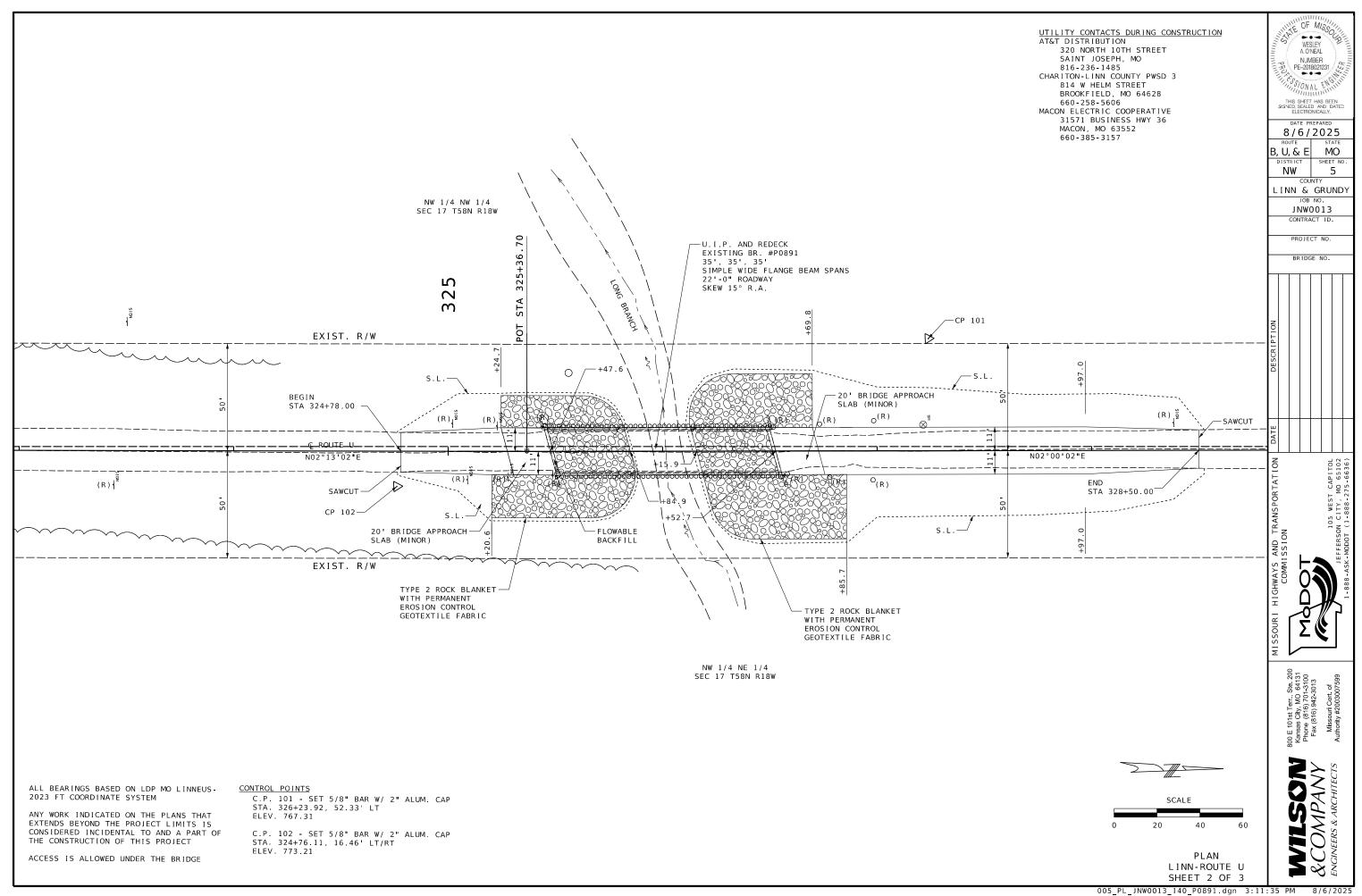
DATE PREPARED
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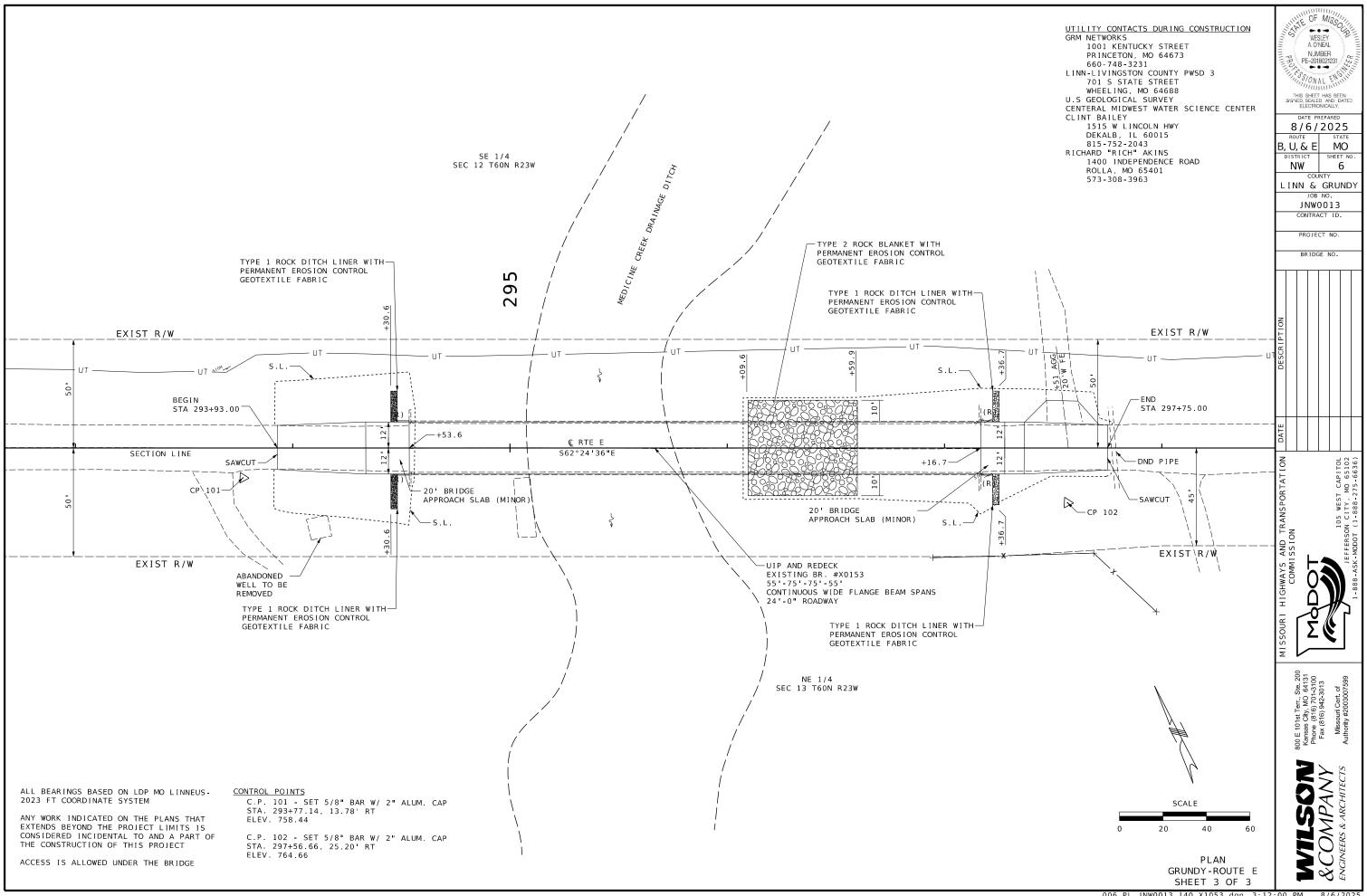
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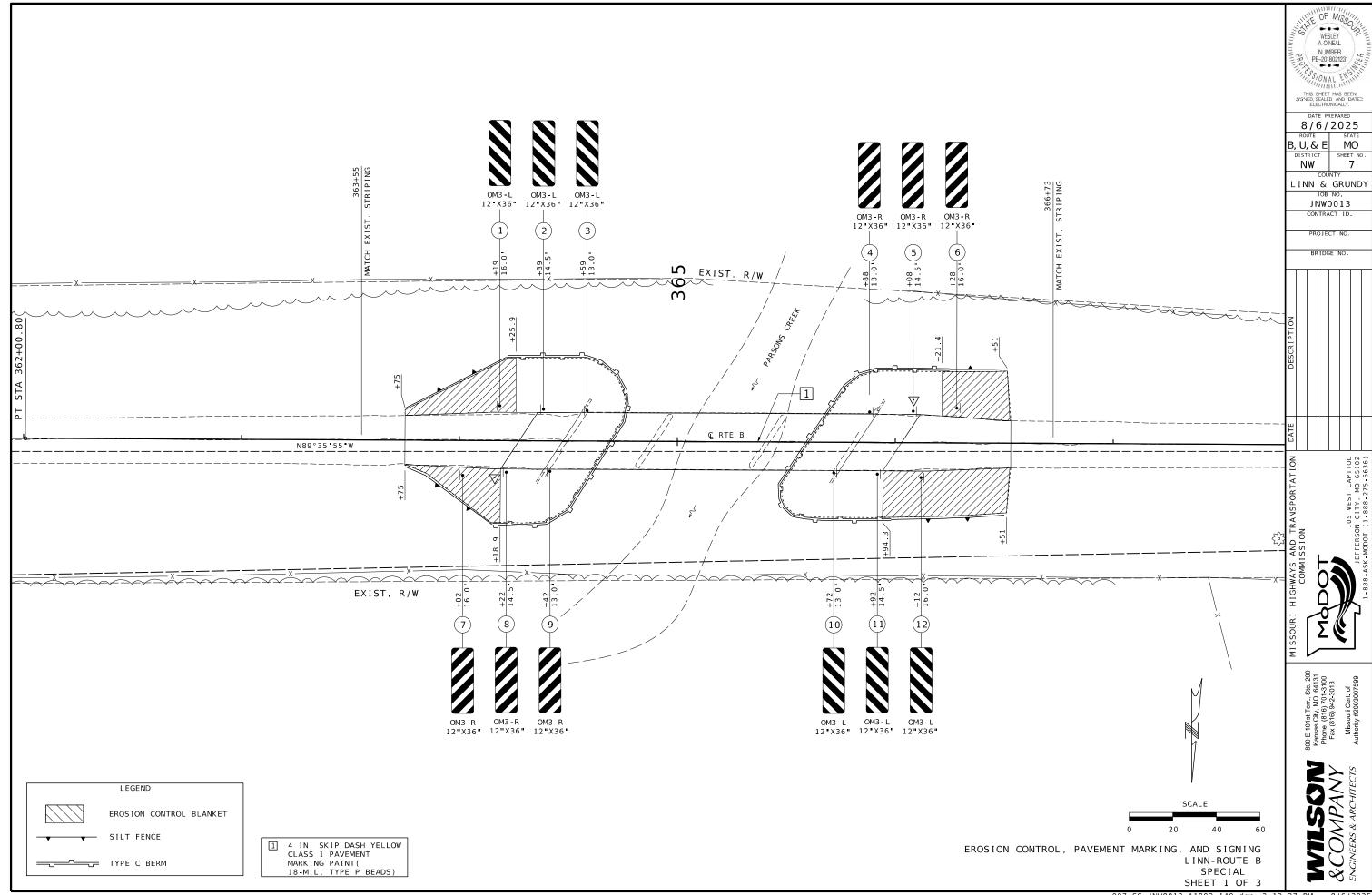
SUMMARY OF QUANTITIES SHEET 4 OF 5

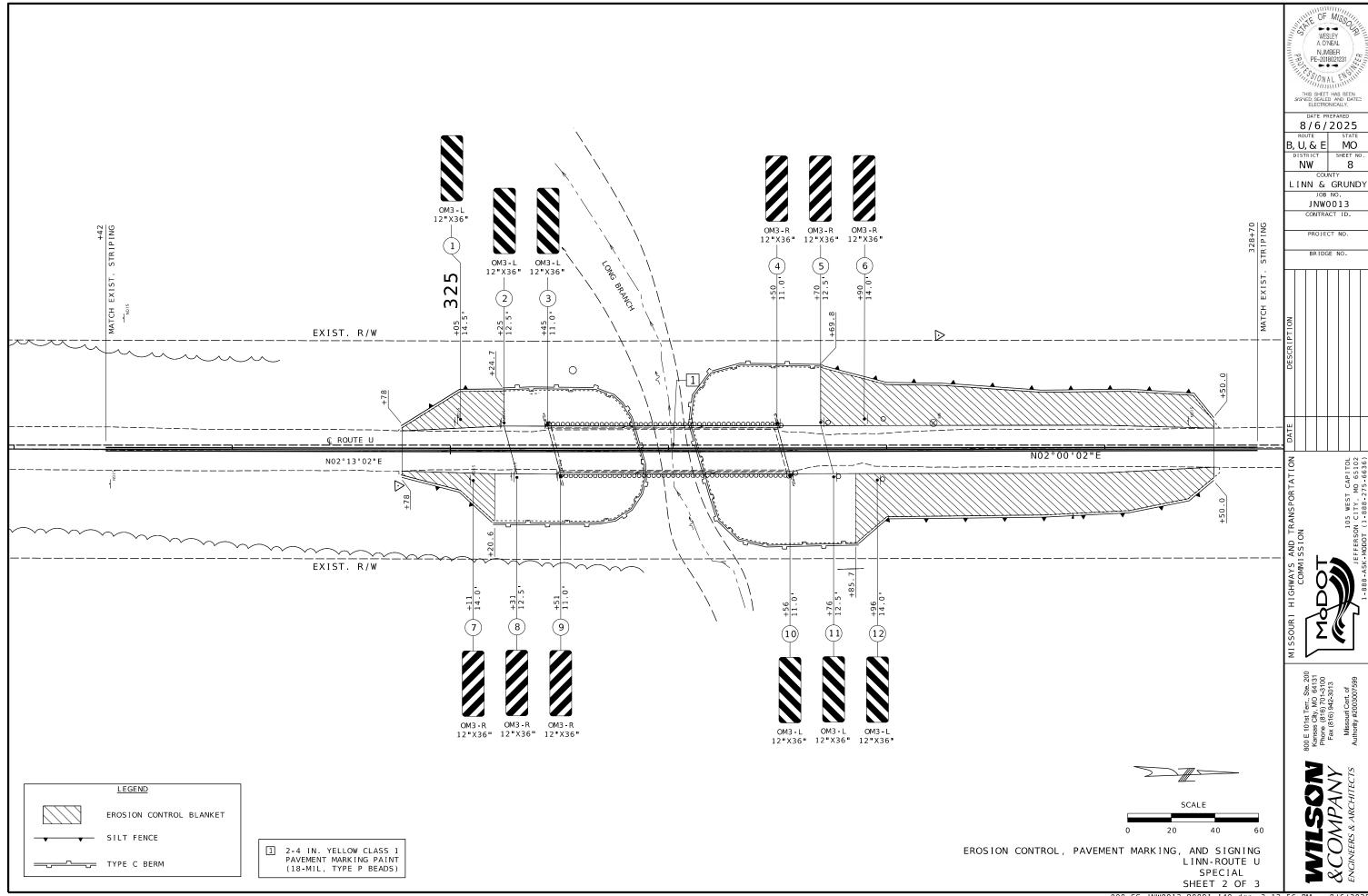
			TOTAL OTY	TOTAL SIG	NI	П	1		OTY	TOTAL	SIGN			Γ	EFFECTIVE: 07-01-2024	WITE OF	F MISSOLL
	SIZE	AREA QTY	AREA RELOC				SIZE	AREA	TY TOTAL RELO				ITEM	ТОТА		SYL	ESLEY DE
SIGN	IN.	SQ.FT. EACH	SQ.FT. EACH	SQ.FT.	DESCRIPTION	SIGN	IN.	SQ.FT.E	ACH SQ.FT. EACH	SQ.FT.		DESCRIPTION	NUMBER	QTY	DESCRIPTION	≧ A.O1	O'NEAL
			WARNING S	IGNS					GUIDE S	I GNS			6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)	== PE-201	018021231
WO1 - 1L WO1 - 1R	48X48 48X48				TURN (SYMBOL LEFT) TURN (SYMBOL RIGHT)	E05-1 E05-2		12.00				GORE EXIT EXIT OPEN	6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)  IMPACT ATTENUATOR 50 MPH (SAND BARRELS)	III, SSIONI	
WO1 - 1K WO1 - 2L	48X48				CURVE (SYMBOL LEFT)	E05-2		12.00				EXIT CLOSED	6122012		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)	3771111	HIIIII.
WO1 - 2R	48X48				CURVE (SYMBOL RIGHT)	GO20-1		10.00				ROAD WORK NEXT XX MILES	6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)	SIGNED, SEALER	ET HAS BEEN LED AND DATES RONICALLY.
WO1-3L	48X48	16.00			REVERSE TURN (SYMBOL LEFT)	GO20-2	48X24	8.00				END ROAD WORK	6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)		PREPARED
WO1 - 3R	48X48				REVERSE TURN (SYMBOL RIGHT)	GO20-4		4.50				PILOT CAR FOLLOW ME	6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)		/2025
WO1 - 4L	48X48				REVERSE CURVE (SYMBOL LEFT)	GO20-4a GO20-4a						PILOT CAR IN USE WAIT & FOLLOW PILOT CAR IN USE WAIT & FOLLOW	6122020		REPLACEMENT SAND BARREL IMPACT ATTENUATOR (RELOCATION)	ROUTE	STATE MO
WO1 - 4R WO1 - 4bL	48X48 48X48				REVERSE CURVE (SYMBOL RIGHT)  DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)	GO20-4a		6.00				WORK ZONE (PLAQUE)	6123001		TRUCK MOUNTED ATTENUATOR (TMA)	B, U, & E	SHEET NO.
WO1 - 4bR	48X48				DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)	MO4 - 8a		3.00				END DETOUR	6161008		ADVANCED WARNING RAIL SYSTEM	NW	3
WO1-4cL	48X48	16.00			TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)	MO4 - 9L	48X36	12.00				DETOUR (LEFT)	6161012		BUOYS (BOATS KEEP OUT)		DUNTY
WO1-4cR	48X48				TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)	MO4 - 9R		12.00				DETOUR (RIGHT)	6161013		BUOYS (NO WAKE)		RUNDY B NO.
WO1 - 6	60X30				HORIZONTAL ARROW (SYMBOL)	MO4 - 9P		4.00				STREET NAME (PLAQUE)	6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)		V0013
WO1-6a WO1-7	72X36 60X30				HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)  DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)	MO4 - 10L MO4 - 10R		6.00				DETOUR ARROW (LEFT) DETOUR ARROW (RIGHT)	6161025	22	CHANNELIZER (TRIM LINE) TYPE III MOVEABLE BARRICADE	CONTRA	RACT ID.
WO1 - 7a	72X36				DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)	104 1010	40/10	0.00	REGULATORY	SIGNS		DETOOK ARROW (RIGHT)	6161033	- 22	DIRECTION INDICATOR BARRICADE	PROJEC	ECT NO.
WO1-8	18X24	3.00			CHEVRON (SYMBOL)	R1-1	48X48	13.25				STOP	6161040		FLASHING ARROW PANEL		
WO1-8a	30X36				CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)	R1-2		6.93				YIELD	6161047		TYPE III OBJECT MARKER	BRIDG	OGE NO.
WO3 - 1	48X48				STOP AHEAD (SYMBOL)	R1-2a		9.00				TO ONCOMING TRAFFIC (PLAQUE)	6161055		SEQUENTIAL FLASHING WARNING LIGHT	<del>                                     </del>	
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		TUBULAR MARKER RADAR SPEED ADVISORY SYSTEM	$\{ \mid \mid \mid \mid \mid$	
WO3 - 4	48X48 48X48		+ + +		BE PREPARED TO STOP	R3-1		16.00				NO RIGHT TURN (SYMBOL)	0101033		CHANGEABLE MESSAGE SIGN,	1	
WO3 - 5	48X48				SPEED LIMIT AHEAD	R3 - 2		16.00				NO LEFT TURN (SYMBOL)	6161096		COMMISSION FURNISHED/RETAINED	$  \   \   \   \  $	
WO4-1L	48X48	16.00			MERGE (SYMBOL FROM LEFT)	R3-3		9.00				NO TURNS			CHANGEABLE MESSAGE SIGN WITHOUT COMM.	1 <sub>8</sub>	
WO4 - 1R	48X48				MERGE (SYMBOL FROM RIGHT)	R3-4		16.00				NO U-TURN (SYMBOL)	6161098		INTERFACE - CONTRACTOR FURNISHED/RETAINED	4Ĕ	
WO4 1aL	48X48				MERGE (LEFT) MERGE (RIGHT)	R3-7L		6.25				LEFT LANE MUST TURN LEFT	6161000		CHANGEABLE MESSAGE SIGN WITH COMM.		
WO4-1aR WO5-1	48X48 48X48				ROAD/BRIDGE/RAMP NARROWS	R3-7R R4-1		6.25 12.00				DO NOT PASS	6161099		INTERFACE - CONTRACTOR FURNISHED/RETAINED WORK ZONE TRAFFIC SIGNAL SYSTEM		
WO5-1	48X48				ONE LANE BRIDGE	R4-2		12.00				PASS WITH CARE	6162002	1	TEMPORARY LONG-TERM RUMBLE STRIPS	<b> </b> □	
WO5 - 5	48X48				NARROW LANES	R4 - 7a		12.00				KEEP RIGHT (HORIZONTAL ARROW)			TEMPORARY TRAFFIC BARRIER	1	
WO6 - 1	48X48	16.00			DIVIDED HIGHWAY (SYMBOL)	R4-8a	36X48	12.00				KEEP LEFT (HORIZONTAL ARROW)	6173600	1	CONTRACTOR FURNISHED/RETAINED	]	
WO6 - 2	48X48				DIVIDED HIGHWAY END (SYMBOL)	R5-1		6.25				DO NOT ENTER			TEMPORARY TRAFFIC BARRIER		
WO6-3 WO7-3a	48X48 30X24				TWO WAY TRAFFIC (SYMBOL)  NEXT XX MILES (PLAQUE)	R5-1a R6-1L	36X24	6.00				WRONG WAY ONE WAY ARROW (LEFT)	6173602		CONTRACTOR FURNISHED/COMMISSION RETAINED TEMP. TRAFFIC BARRIER HEIGHT TRANSITION		$\Pi\Pi$
WO7-3a WO8-1	48X48				BUMP	R6-1R	54X18	6.75				ONE WAY ARROW (RIGHT)	6175010		RELOCATING TEMPORARY TRAFFIC BARRIER		
WO8 - 2	48X48				DIP	R6-2L		5.00				ONE WAY (LEFT)	01730107		TEMPORARY TRAFFIC BARRIER		
WO8 - 3	48X48	16.00			PAVEMENT ENDS	R6-2R	24X30	5.00				ONE WAY (RIGHT)	6176000		COMMISSION FURNISHED/RETAINED	Z O	07 07 16)
WO8 - 4	48X48				SOFT SHOULDER	R9-9	24X12	2.00				SIDEWALK CLOSED			TEMP. TRAFFIC BARRIER HEIGHT TRANSITION	Ē	105 WEST CAPITOL ERSON CITY, MO 65102 DOT (1-888-275-6636)
WO8 - 5	48X48				SLIPPERY WHEN WET (SYMBOL)	<sub>B0 111</sub>	24710	2 00				SIDEWALK CLOSED AHEAD,	6177000		COMMISSION FURNISHED/RETAINED	<sup>4</sup>	A 0 57
WO8-6 WO8-6c	48X48 48X48				TRUCK CROSSING TRUCK ENTRANCE	R9-11L	24X18	3.00				(ARROW LEFT) CROSS HERE SIDEWALK CLOSED AHEAD,	9029400		TEMPORARY RAISED PAVEMENT MARKER TEMPORARY TRAFFIC SIGNALS	l ii	EST Y,   8-2
WO8 - 7	36X36				LOOSE GRAVEL	 	24X18	3.00				(ARROW RIGHT) CROSS HERE	9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING	SN	> 10 1
WO8-7a	36X36	9.00			FRESH OIL / LOOSE GRAVEL	R10-6	24X36	6.00				STOP HERE ON RED (45^ ARROW)				18 _	10 NC
WO8 - 9	48X48				LOW SHOULDER	R11-2	48X30	10.00	6 60.00			ROAD CLOSED					:RSC
WO8 - 11					UNEVEN LANES	1,,,	60420	12.50	7 07 50			ROAD CLOSED XX MILES AHEAD				SS	F 6
WO8 - 12 WO8 - 15					NO CENTER LINE GROOVED PAVEMENT	11	-		7 87.50 5 62.50			LOCAL TRAFFIC ONLY ROAD CLOSED TO THRU TRAFFIC				S MI ►	* S
WO8-15 WO8-15P					MOTORCYCLE (PLAQUE)	CONST - 3A	-		5 02.50		50	FINE SIGN				≨5 <b>∩</b>	
WO8 - 17L					SHOULDER DROP-OFF (SYMBOL LEFT)	CONST - 3	_					SPEEDING/PASSING (PLATE)				] 🗄 🕺	`\\\
WO8 - 17R					SHOULDER DROP-OFF (SYMBOL RIGHT)				MISCELLANEOU	JS SIGN						li T	<b>!///</b> /
WO8 - 17P					SHOULDER DROP-OFF (PLAQUE)	CONST 5	-					POINT OF PRESENCE				<del>-</del> <u>\</u> 0	<u> </u>
W10-1 WO12-1	42RND. 24X24				RAILROAD CROSSING DOUBLE DOWN ARROW (SYMBOL)	CONST - 5	-					POINT OF PRESENCE WORK ZONE NO PHONE ZONE				[g   <b>Σ</b>	_ (6.
	48X48				LOW CLEARANCE (SYMBOL)	1 55,151-0	.050	12.00				ZOILE NO THONE ZONE				188	
W012-2x					LOW CLEARANCE (PLAQUE)											Σ	
WO12-2a					OVERHEAD LOW CLEARANCE (FEET AND INCHES)											0	
WO12-4					LOW CLEARANCE XX FT XX IN XX MILES AHEAD			+		1						e. 20 4131	13 f
WO12-5 WO13-1	120X60 30X30				WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD ADVISORY SPEED (PLAQUE)	-		+ +								St. 0 64 01-3	2-30 irt. o 3007
	30X30 30X24				XXX FEET (PLAQUE)	1		+ +								Terr y, M	i) 94.
WO16-3					X MILE (PLAQUE)											800 E 101st Terr., Ste. 21 Kansas City, MO 6413 Phone (816) 701-3100	8, (816 ssou rity#
WO20-1	48X48				ROAD/BRIDGE/RAMP WORK AHEAD											E 1	Fax Mik
	48X48		06.66		DETOUR AHEAD	1 616 12	05		TOTAL							88 x g	. ₹
WO20-3 WO20-3		16.00 6 16.00 6	96.00		ROAD CLOSED AHEAD ROAD CLOSED 500 FT	616-10		N SIGNS	TOTAL 402								
WO20-3	48X48 48X48		30.00	200	RIGHT/CENTER/LEFT LANE CLOSED AHEAD	616-10		CNDIC	402	TOTAL							<b>&gt;</b> &
WO20-5a					2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD	RELOCA		I GNS		0							Z 5
WO20-6a					RIGHT/CENTER/LEFT LANE CLOSED												$A_{\parallel}$
WO20-7a					FLAGGER (SYMBOL)	1										IÃ	OMPAN EERS & ARCHITI
WO21-2	36X36				FRESH OIL	-										V!	$\sum_{i}^{\infty}$
WO21-5 WO22-1	48X48 48X48				SHOULDER WORK / SHOULDER WORK AHEAD  BLASTING ZONE AHEAD	1											KS.
WO22-1					TURN OFF 2-WAY RADIO AND PHONE	1											ĆĒ.
WO22-3					END BLASTING ZONE	]									SUMMARY OF QUANTITIES		&C
GO22-1	21X15	2.19			WET PAINT (ARROW PIVOTS)	J									SHEET 5 OF 5		$\mathcal{S}_{\tilde{X}}$
																1 '	

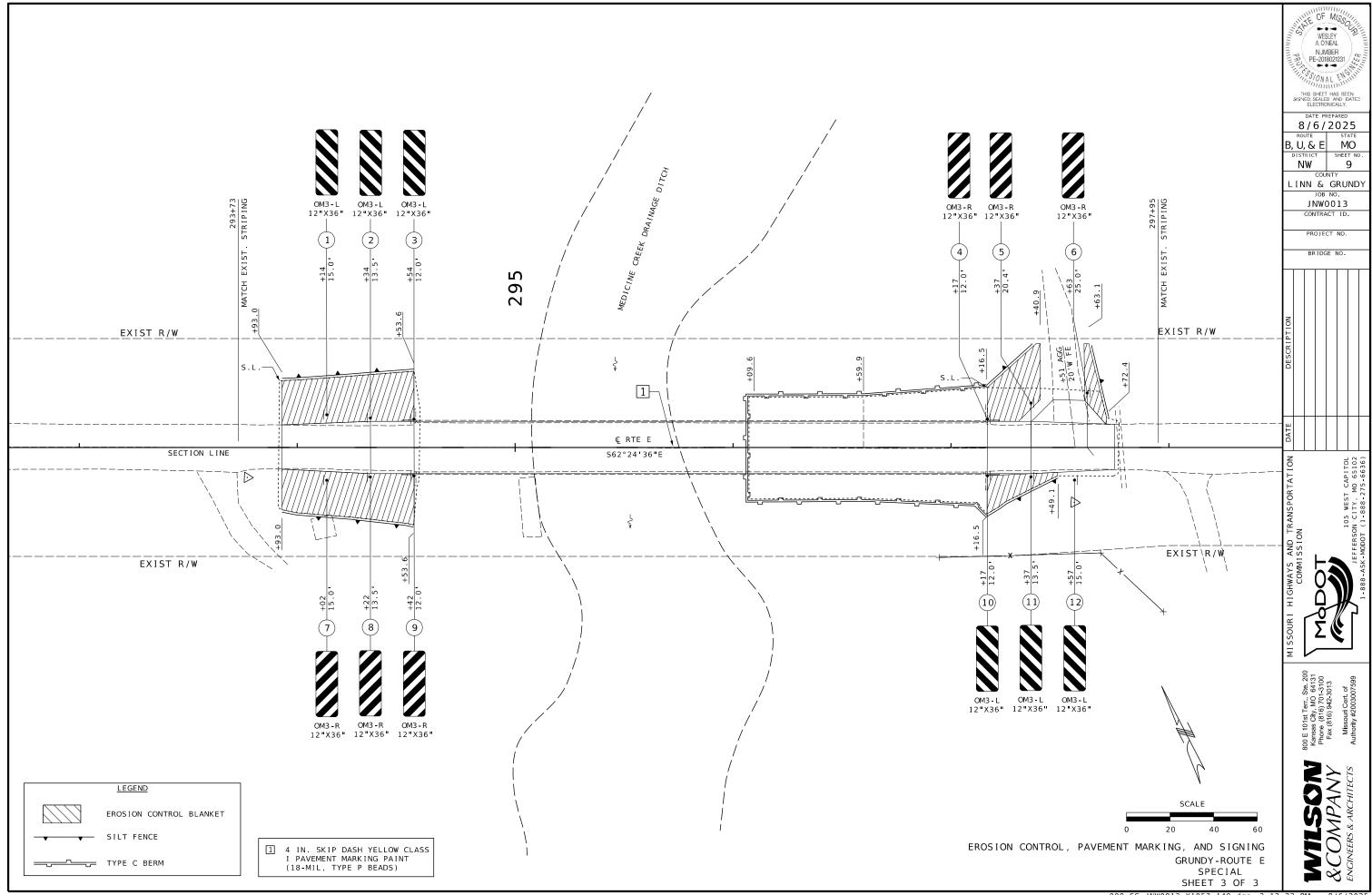












#### TRAFFIC CONTROL LEGEND

• SIGN (SINGLE SIDED)

BARRICADE

WORK AREA





ROAD CLOSED 1/2 MILES AHEAD LOCAL TRAFFIC ONLY

> R11-3a 56

ROAD CLOSED 3 MILES AHEAD LOCAL TRAFFIC ONLY

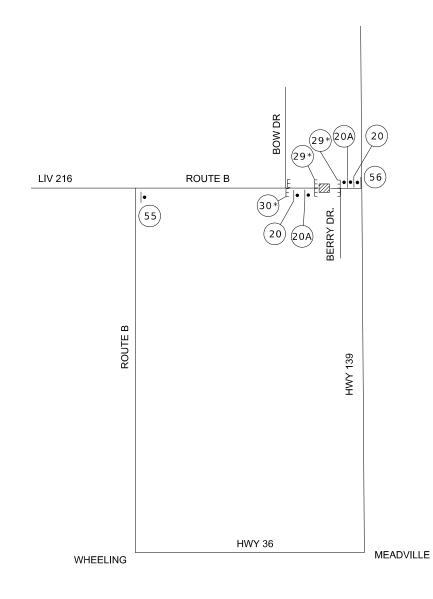
> R11-3a 55)

ROAD CLOSED TO THRU TRAFFIC

> R11-4 (30)

ROAD CLOSED

R11-2





	TI SIGN	ED, S	CTRO	D AI	ND E	ATE	)			
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				NO. 0013						
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		PR	OJE	СТ	NO.					
BRIDGE NO.										
	ı	ı	ı		ı	ı	ı			

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

NOTES:

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

\* SIGN MOUNTED TO BARRICADE

TRAFFIC CONTROL LINN-ROUTE B SHEET 1 OF 3

#### TRAFFIC CONTROL LEGEND

• SIGN (SINGLE SIDED)

F BARRICADE

WORK AREA



ROAD CLOSED

**CLOSED** 

500 FT

WO20-3

R11-3a

ROAD CLOSED

7 MILES AHEAD

6 MILES AHEAD LOCAL TRAFFIC ONLY

(55)

ROAD CLOSED TO THRU TRAFFIC

R11-4

ROAD CLOSED

29

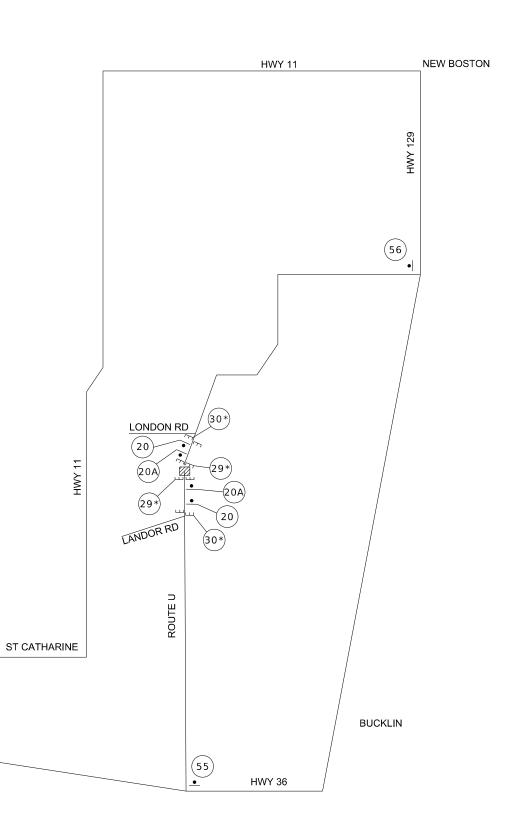
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BROOKFIELD

#### NOTES:

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

\* SIGN MOUNTED TO BARRICADE





B, U, & E MO
DISTRICT SHEET NO
NW 11

JOB NO.
JNW0013
CONTRACT ID.

PROJECT NO.

DESCRIPTION

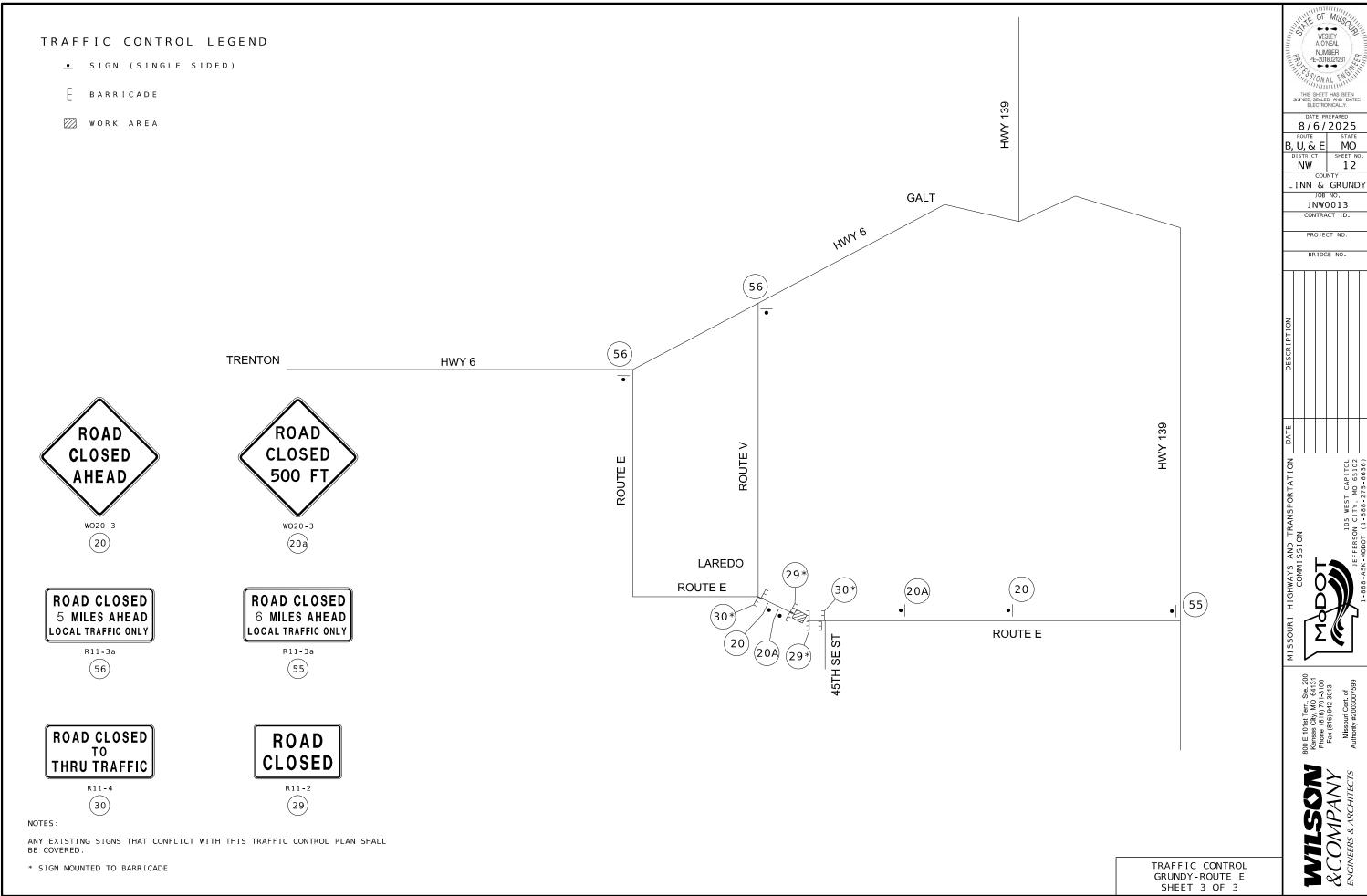
DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTA
COMMISSION
TO TO THE TRANSPORTA
T

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

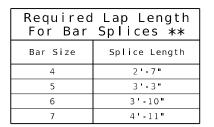


TRAFFIC CONTROL LINN-ROUTE U



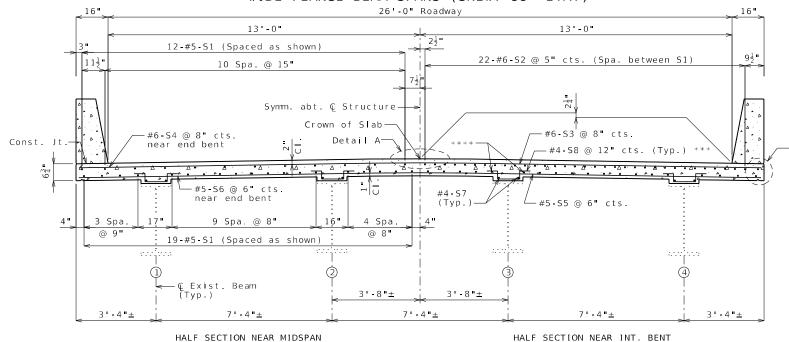
f'c = 4,000 psi

f'c = 4,000 psify = 60,000 psfy = 36,000 psi



\*\* Unless otherwise shown

#### U.I.P. AND REDECK EXISTING (40'- 52'- 40') CONTINUOUS COMPOSITE WIDE FLANGE BEAM SPANS (SKEW: 33° L.A.)



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

SEC/SUR 1

DETAIL A

TWP 58N

RGE 22W

JASON M. KEMNITZ

NUMBER

PE-2011005051

1,5810NAL EN

7/25/2025

LINN

JNW0013

CONTRACT ID

PROJECT NO

BRIDGE N

A18021

MO

SHEET NO

1

В

BR

- Const. Jt. € 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 (1965) (Existing)

HS20-44 (New Construction)
15 lb/sf Future Wearing Surface
Earth - 120 lb/cf, Equivalent Fluid Pressure 45 lb/cf

Fatique Stress - Case III

Design Unit Stresses:

Class B-1 Concrete (Barrier)

Class B-1 Concrete (Barrier)
Class B-2 Concrete (End Bents & Superstructure,
except Barrier)
Reinforcing Steel (ASTM A615 Grade 60)
Structural Carbon Steel (ASTM A709 Grade 36)

Joint Filler:

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

Reinforcing Steel:

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

Miscellaneous:

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.

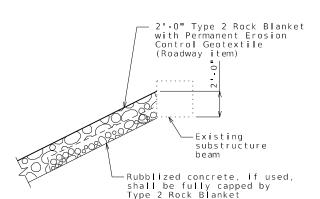
Traffic Handling:

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

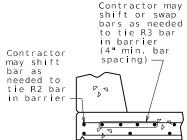
#### TYPICAL SECTION THRU SLAB

\*\*\* #4-58 hairpin bars may be placed at an angle to meet clearance

\*\*\*\* Contractor may shift bars to tie #4-S8 to the bottom longitudinal bars as needed.



ROCK BLANKET ON SPILL SLOPES



OPTIONAL SHIFTING TOP BARS AT BARRIER

Estimated Quantities		
I t em		Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot	12
Removal of Existing Bridge Deck	sq. foot	3,908
Bridge Approach Slab (Minor)	sq. yard	118
Slab on Steel	sq. yard	434
Type H Barrier	linear foot	272
Strengthening Existing Beams	lump sum	1
Slab Drain	each	24
Surface Preparation for Applying Epoxy-Mastic Primer	lump sum	1
Aluminum Epoxy-Mastic Primer	lump sum	1
Non-Destructive Testing	linear foot	120

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	ee I
I t em				Total
Class B-2 Concrete		cu.	yard	94
Reinforcing Steel (Epoxy Coated)		р	ound	37,879

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 B OVER PARSONS CREEK

ROUTE B FROM ROUTE BB TO ROUTE 139 ABOUT 0 6 MILE WEST OF BOUTE 139 BEGINNING STATION  $364+47.50 \pm (MATCH EXISTING)$ 

Detailed March 2025 Checked May 2025

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

#### DETAILS OF CONCRETE REMOVAL AT END BENTS

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

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

#### General Notes:

#### Stay-In-Place Forms:

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

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

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

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

#### 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.

 ${\sf Slab}$   ${\sf shall}$  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:

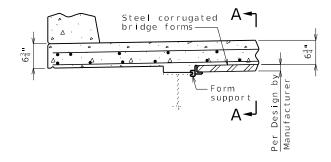
Slab is to be considered a uniform thickness as shown on the plans. Haunching will vary. See front sheet for slab thickness. Haunches will be increased approximately 1" when comparing with original plan dimensions to match existing grade on Rte. B. Clean and coat all exposed surfaces
of existing structural steel piles
with aluminum epoxy-mastic primer
in accordance with Sec 1081.

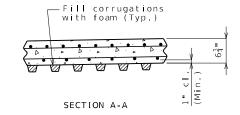
Extend coating 2'-0" below
ground line as shown.

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

#### 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 two 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.





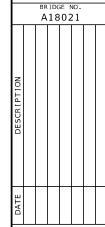
OPTIONAL STAY-IN-PLACE FORM DETAILS



DATE PREPARED
7/30/2025
ROUTE STATE
B MO
DISTRICT SHEET NO
BR 2
COUNTY

LINN
JOB NO.
JNW0013
CONTRACT ID.

PROJECT NO.



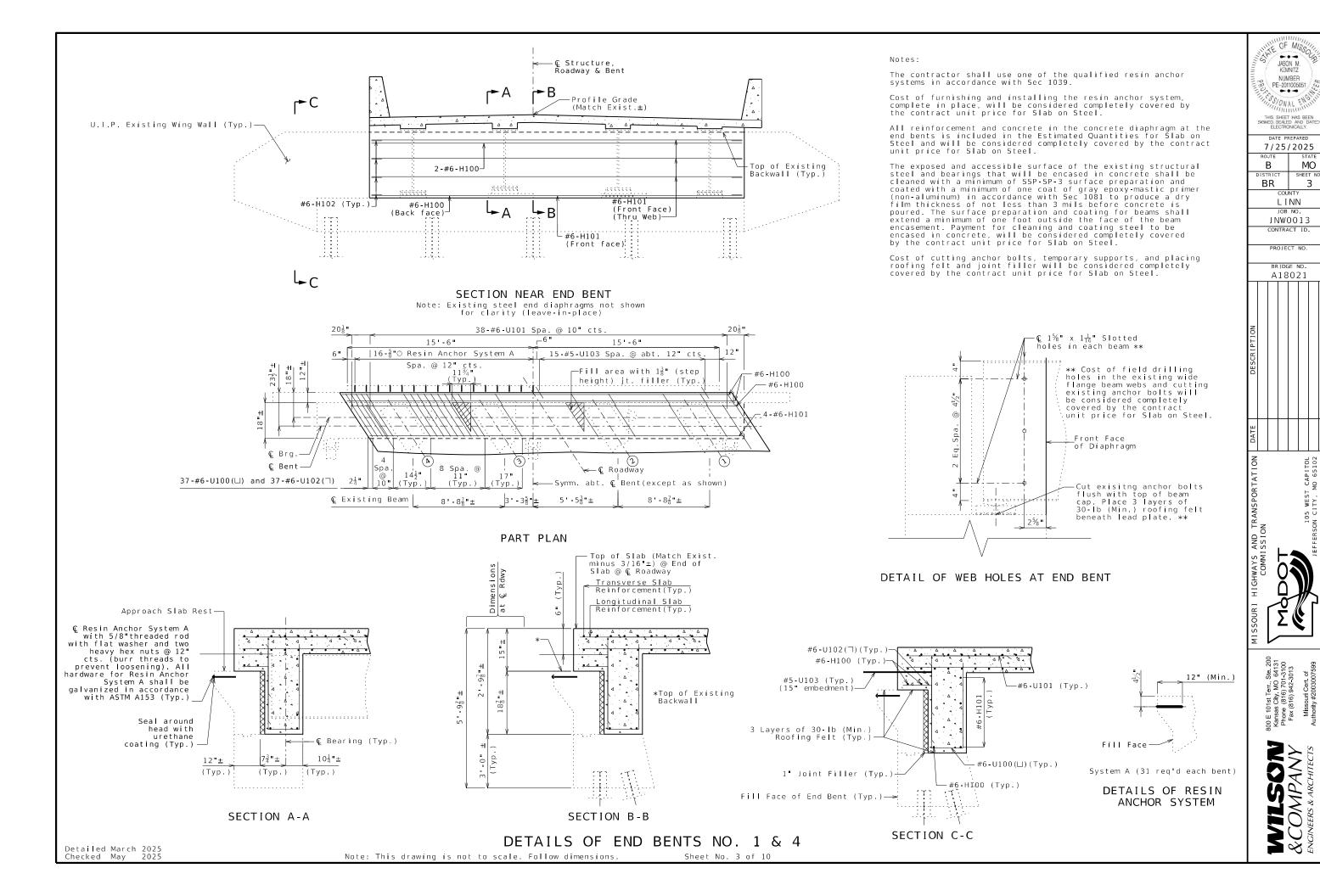
COMMISSION

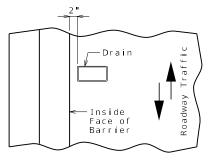
COMMISSION

105 WEST CAPITO

800 E 101st Terr.. Ste. 2 Kansas City, MO 6413 Phone (816) 701-3100 Fax (816) 942-3013

WILSON &COMPANY SNOINERS & ARCHITECTS





PART PLAN OF SLAB AT DRAIN

SLAB DRAINS

#### PLAN OF FRP DRAIN OPTION

8" (Nom.)

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 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.

#### 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

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

OF MISSO JASON M. KEMNITZ NUMBER PE-2011005051 SSONAL EN

7/25/2025 В MO SHEET NO

BR 4 LINN

JNW0013

CONTRACT ID. PROJECT NO

BRIDGE NO A18021

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

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

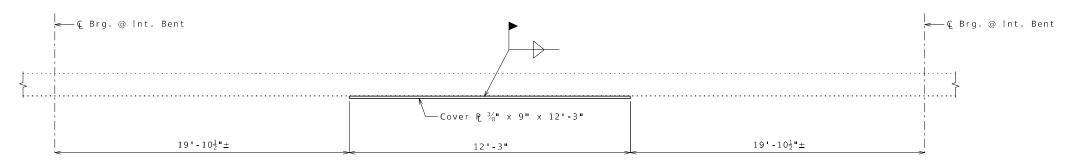
1" (Min.)

PART SECTION NEAR DRAIN

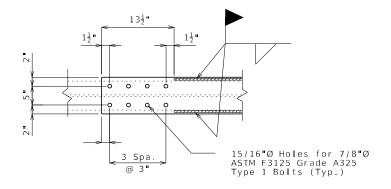
Detailed March 2025 Checked May 2025

Sheet No. 4 of 10

PART ELEVATION OF EXTERIOR BEAMS SHOWING COVER PLATE INSTALLATION SPAN (1-2) AND SPAN (3-4)



PART ELEVATION OF EXTERIOR BEAMS 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 936 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. KENNITZ NUMBER PE-2011000051 THIS SHEET HAS BEEN SKINED SEALED AND DATED ELECTRONICALLY. DATE PREPARED 7/25 / 2025

TOTAL PREPARED
7/25/2025

ROUTE STATE
B MO

DISTRICT SHEET NO.

BR 5

COUNTY
LINN

JOB NO.
JNW0013

CONTRACT ID.

BRIDGE NO. A18021

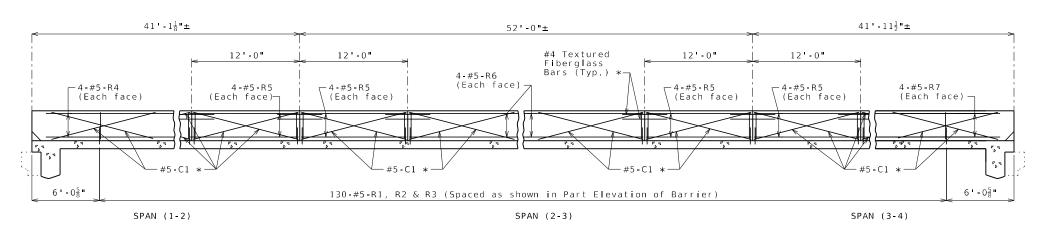
DESCRIPTION

HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITOL
LEFFERSON CITY, MO 65102

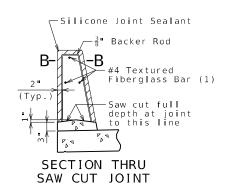
800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013 Missouri Cert. of

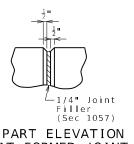
WILSON &COMPANY ENGINEERS & ARCHITECTS

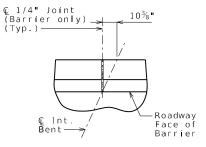


#### ELEVATION OF BARRIER

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





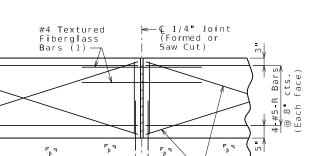


Silicone Joint Sealant (Typ.)

- ब्रे**"** Backer Rod

#### PART ELEVATION AT FORMED JOINT

PART PLAN SHOWING JOINT LOCATION



21 "

-#5-C1 (Typ.) \*

#5-R1, R2 & R3

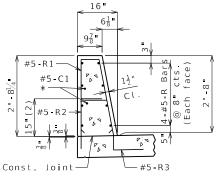
@ abt. 12" cts.

#### PART ELEVATION OF BARRIER

#5-R1, R2 & R3

@ abt. 12" cts.

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

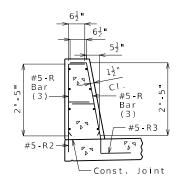


#### SECTION A-A

Use a minimum lap of 2'-6" 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 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.



SIGNED, SEALED AND DA'
ELECTRONICALLY.

7 / 25 / 2025

ROUTE STATE
B MO

DISTRICT SHEET NO
BR 6

JOB NO.
JNW0013
CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A18021

COMMISSION

105 WEST CAPITOL

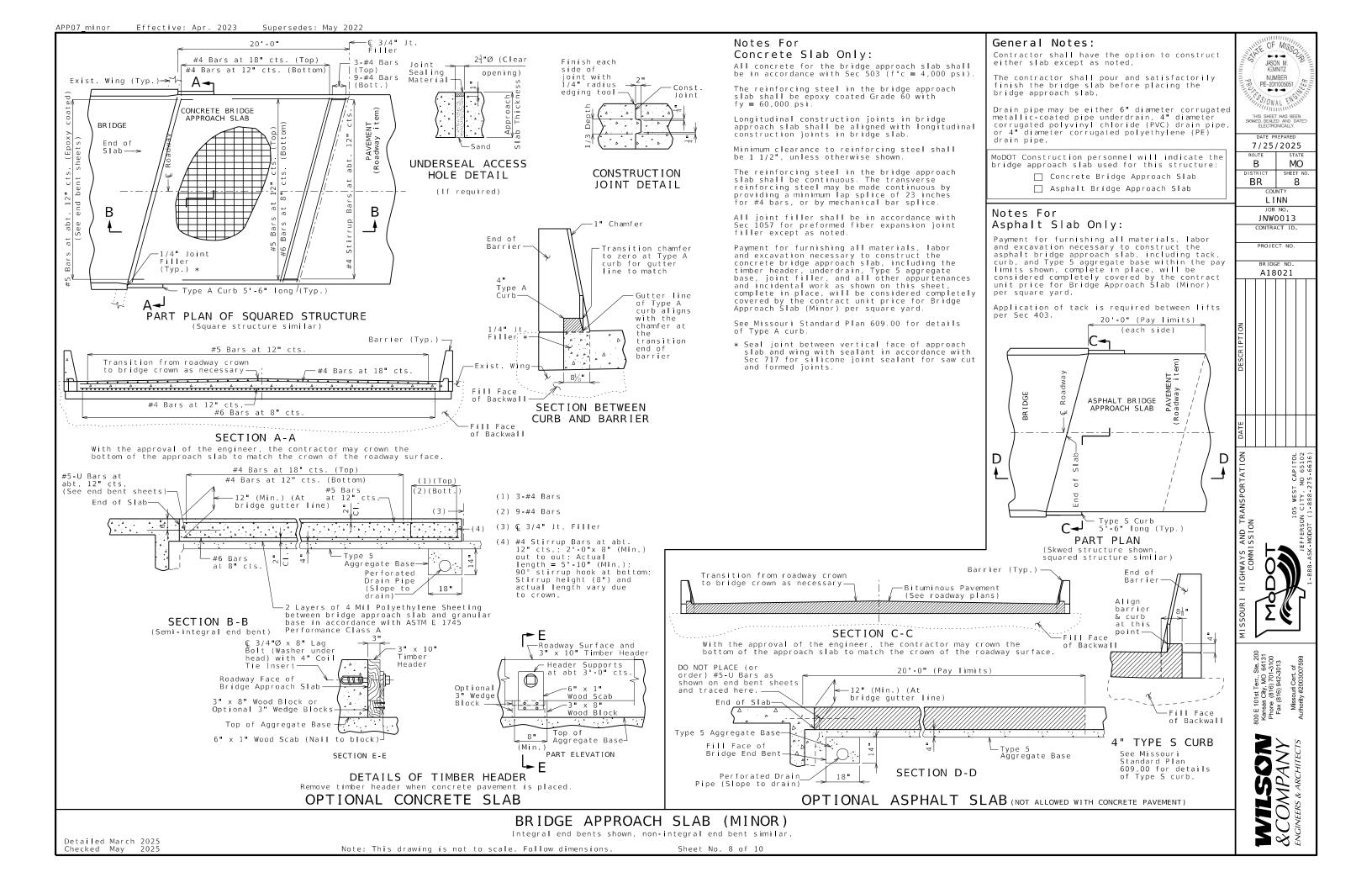
800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013 Missouri Cert, of

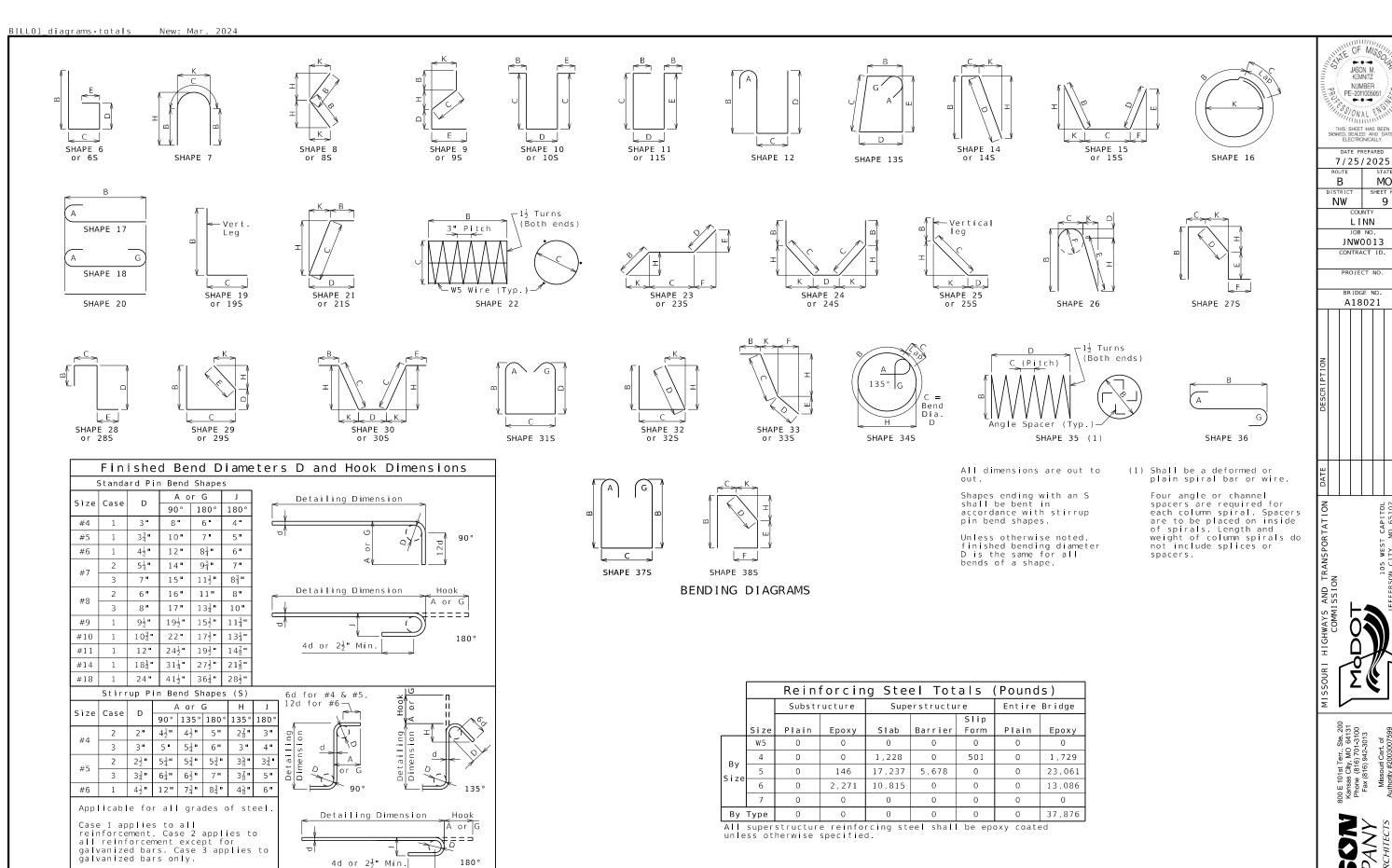


TYPE H BARRIER

Sheet No. 7 of 10

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





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JASON M. KEMNITZ NUMBER

> MO SHEET NO

> > 9

New: Mar. 2024 BILL03\_data\_tables

			В	ill of			g Steel										Bill of R			ee I				1
			Dimensions Nom. Actual B C D E F H K Length Length Weight											Dimensions						Nom. Actual Length Length Weigh				
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6 S2	SLAB SLAB	E 20	47 4.000   16 0.000						7 4 4		4 9183 0 2115	-												
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	BARRIER																							
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5 K5	BARRIER	E 38 S				0 9.500	0 8.250 0 18.750 0	4.2503	1 3		0 63													
5 K6	BARRIER	E 21 S		2 4.870	0 10.000		2 4.250 0		3 3		1 90													
5 K7	BARRIER	E 20	5 6.000	D .				5	6 5	5	6 321													
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5 R2	BARRIER		0 18.000		0 9.500		2 3.0000	1	7 :		5 384	-												
5 R3	BARRIER	E 27 S					0 12.000 0 15.000 0	3.0003	4 3		2 859													
5 R4	BARRIER		26 5.000						5 5 2		5 441													
5 R5	BARRIER		11 8.000						1 8 :		8 779 8 462													
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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.

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.

JASON M. KEMNITZ NUMBER PE-2011005051

7/25/2025

LINN JNW0013 CONTRACT ID. PROJECT NO. BRIDGE NO. A18021

MO

SHEET NO.

10

5 0 "

5'-0"

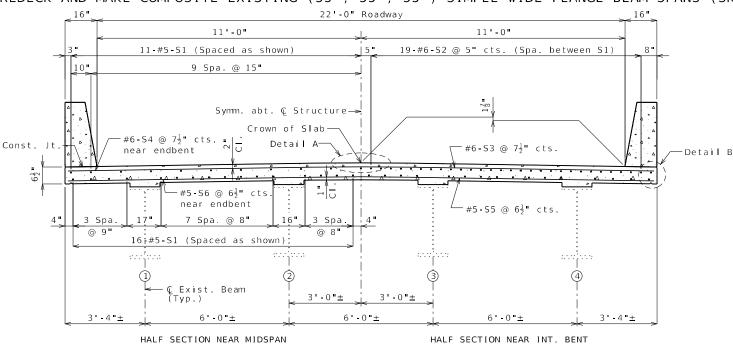
5'-0"

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

5'-0"

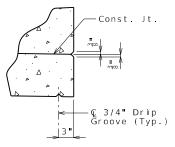
\*\* Unless otherwise shown

#### U.I.P., REDECK AND MAKE COMPOSITE EXISTING (35', 35', 35') SIMPLE WIDE FLANGE BEAM SPANS (SKEW: 15° R.A.)



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

#### 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, f'c = 4,000 psiexcept Barrier) Reinforcing Steel (ASTM A615 Grade Structural Carbon Steel (ASTM A709 Grade 36) fy = 36,000 psi

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

#### Reinforcing Steel

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

#### Miscellaneous:

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

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

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

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

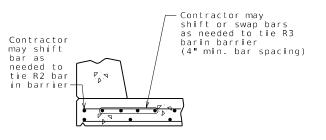
Contractor shall verify all dimensions in the field before finalizing the shop drawings.

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).

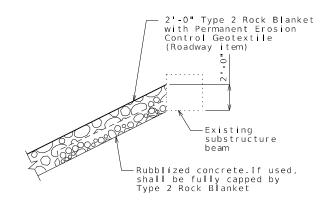
For adjusted girder deflection due to the weight of the new deck and barriers, see Bridge Electronic Deliverables.

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



ROCK BLANKET ON SPILL SLOPES

Estimated Quantities		
I t em		Total
Removal of Existing Bridge Deck	sq. foot	2,486
Bridge Approach Slab (Minor)	sq. yard	105
Slab on Steel	sq. yard	294
Type H Barrier	linear foot	214
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Shear Connectors	each	1,656
Strengthening Existing Beams	lump sum	1
Slab Drain	each	18
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	for	Slab on St	ee l
I t em			Total
Class B-2 Concrete		cu. yard	7 1
Reinforcing Steel (Epoxy Coated)		pound	32,115

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.

ABOUT 6.1 MILES NORTH OF ROUTE 36

REPAIRS TO BRIDGE: ROUTE U OVER LONG BRANCH

ROUTE U FROM ROUTE 129 TO ROUTE 36 BEGINNING STATION  $325+47.00 \pm (MATCH EXISTING)$  JASON M. KEMNITZ

NUMBER

PE-2011005051

SONAL EN

7/25/2025

LINN

JNW0013

CONTRACT ID

PROJECT NO

BRIDGE N P08911

MO

SHEET NO

1

U

BR

#### 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

> Two 7/8"Ø x 4" Welded Studs (Typ.)

C 7/8"Ø x 4"

Welded Studs (Typ.)

€ Unit-

Shear Connectors.

ELEVATION

See Table

PLAN OF SHEAR CONN. (2 PER UNIT)

DETAILS OF SHEAR CONNECTORS

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

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

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:

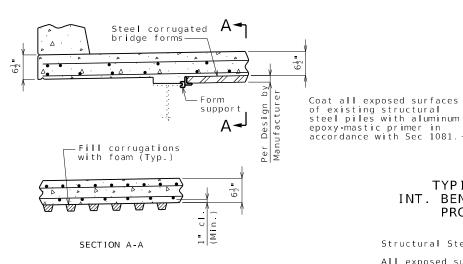
The contractor shall provide bracing necessary for lateral and torsional stability of the beams during construction of the concrete slab and remove the bracing after the slab has attained 75% design strength. Contractor shall not weld on or drill holes in the beams. The cost for furnishing, installing,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

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

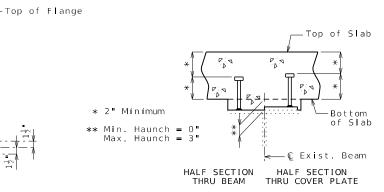
Alternate pour sequences may be submitted to the engineer for approval. Keyed construction joints shall be provided between pours.

Bridge deck surface may be finished with a vibratory screed.

Slab is to be considered a uniform thickness as shown on the plans. Haunching will vary. Haunches will be increased approximately 1/4" when comparing with original plan dimensions to match existing grade on Rte. U.



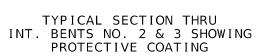
OPTIONAL STAY-IN-PLACE FORM DETAILS



SECTION THRU EXIST. BEAM SHOWING SHEAR CONNECTORS

#### Fill Face of Existing End Bent-Remove leveling pad concrete where necessary Flowable Backfill (Roadway item)-

PART SECTION SHOWING FLOWABLE BACKFILL AT EXPOSED PILES AT END BENT NO. 1

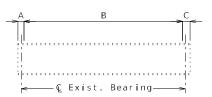


Clean and seal with

Epoxy) (See Sec 711)

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 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 propagation will be considered completely. 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



#### **ELEVATION SHOWING SHEAR** CONNECTOR SPACING

	TABLE SHOWING SHEAR CONNECTOR UNIT SPACING										
Span	S.C. per unit	Α	В	С							
1	2	6"±	69 Units @ 6" cts.	6"±							
2	2	6"±	69 Units @ 6" cts.	6"±							
3	2	6"±	69 Units @ 6" cts.	6"±							
	Total shear connectors required										



7/25/2025

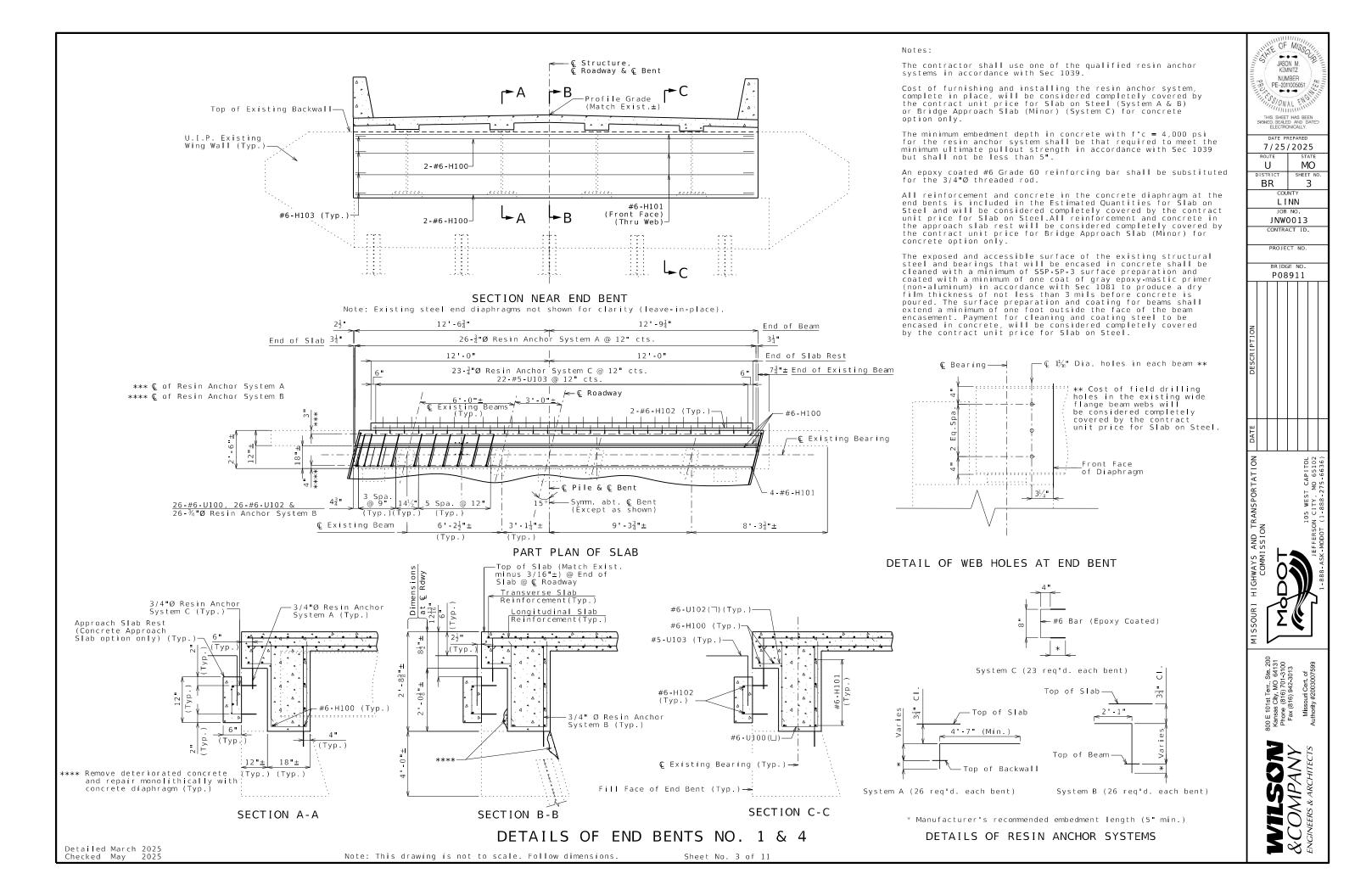
U MO SHEET NO BR 2

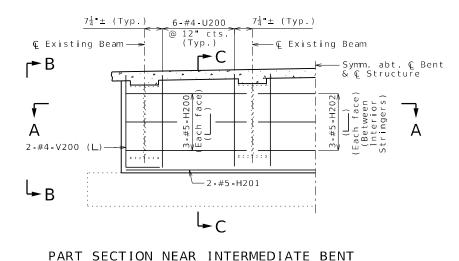
> LINN JNW0013 CONTRACT ID

PROJECT NO

BRIDGE NO P08911

Ste 2 6413 3100 800 E 101st Terr., S Kansas City, MO 6 Phone (816) 701-Fax (816) 942-30





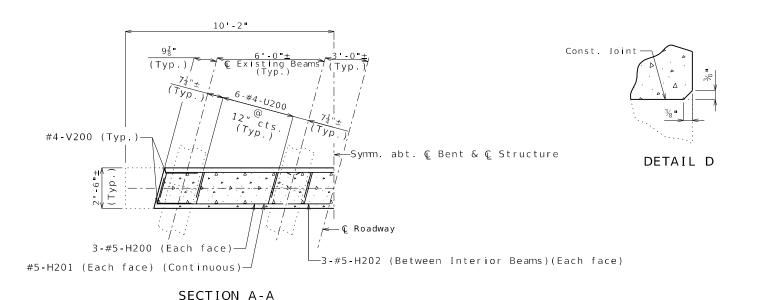
Note: Existing steel diaphragms not shown for clarity (leave-in-place).

### #4-V200 (Typ.) (∟) — Detail D (Typ.) 2'-6"± (Typ.)

#### SECTION C-C

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

#### **ELEVATION B-B**



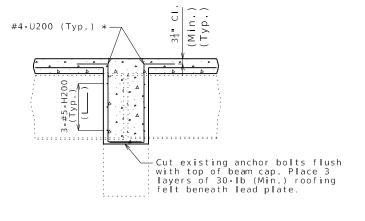
## $\mathbb{Q}$ $1\frac{1}{16}$ $\mathbb{M}$ Holes in each exterior beam

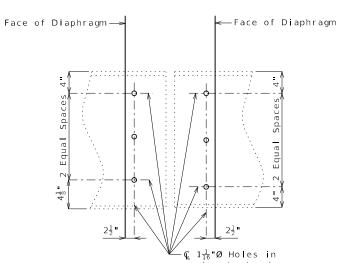
#### DETAILS OF WEB HOLES IN EXTERIOR BEAMS AT INTERMEDIATE BENTS

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

Cost of field drilling holes in existing exterior wide flange beam webs and placing roofing felt 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.





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

JASON M. KEMNITZ

PE-2011005051 SONAL EN

7/25/2025

LINN LOB NO

JNW0013

CONTRACT ID

PROJECT NO

BRIDGE NO P08911

MO SHEET NO

4

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

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

Reinforcing steel shall be shifted to

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

All 1/2-inch diameter bolts shall be ASTM

slab drains and the bracket assembly.

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".

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

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

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 accordance of the clab drains

field cut. The method of cutting FRP slab drain shall be as recommended by the manufacturer to ensure a smooth, chip free

JASON M. KEMNITZ NUMBER PE-2011005051 SSONAL EN

7/25/2025 U MO SHEET NO BR 5

> LINN JNW0013

CONTRACT ID. PROJECT NO

BRIDGE NO P08911

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

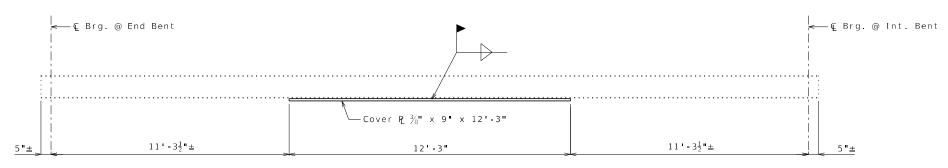
PLAN OF FRP DRAIN OPTION

SLAB DRAINS

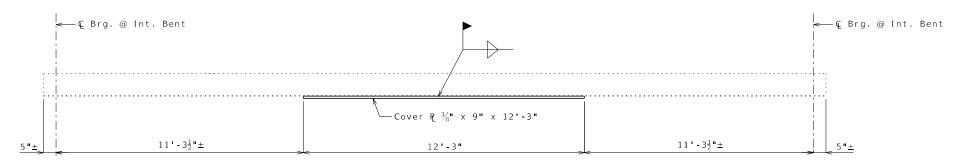
Note: This drawing is not to scale. Follow dimensions.

Detailed March 2025

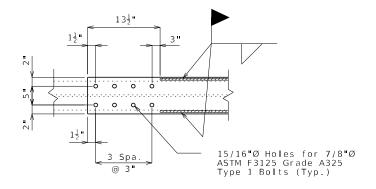
Sheet No. 5 of 11



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



PART ELEVATION OF EXTERIOR BEAM 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)
- Install and tighten bolts.
- 4. Weld cover plate to flange.

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

Payment for 936 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.

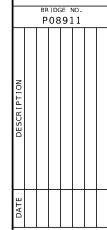
# JASON M. NUMBER PE-2011005051 THIS SHEET HAS BEEN SIGNED SEALED AND DATED ELECTRONICALLY. DATE PREPARED 7 / 25 / 20 25 ROUTE STATE

ROUTE STATE
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DISTRICT SHEET NO
BR 6

COUNTY
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JOB NO.
JNWO013
CONTRACT ID.

PROJECT NO.



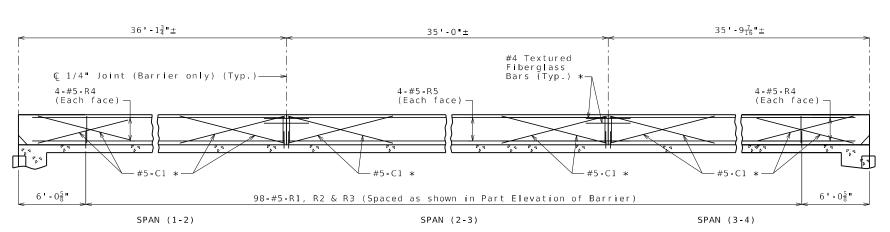
COMMISSION
COMMISSION

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105 WEST CAPITOL
JEFFERSON CITY, MO 65102

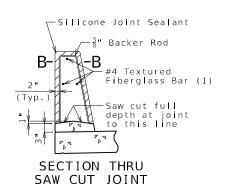
800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013 Missouri Cert. of

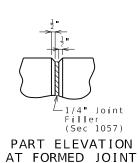


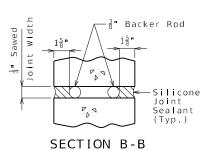


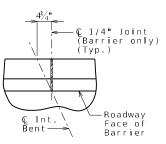
#### ELEVATION OF BARRIER

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

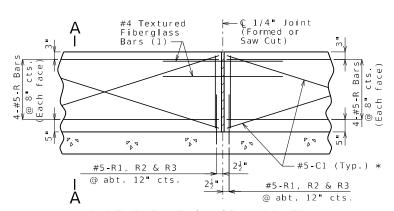






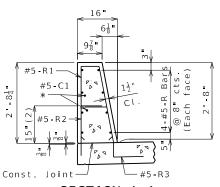


PART PLAN SHOWING JOINT LOCATION



#### PART ELEVATION OF BARRIER

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

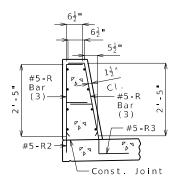


#### SECTION A-A

Use a minimum lap of 2'-6" 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 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.



DATE PREPARED 7 / 25 / 2025

ROUTE STATE
U MO
DISTRICT SHEET NO
BR 7

LINN

JOB NO.

JNW0013

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
P08911

HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITOL
LEFEED COM CITY MO GET 102

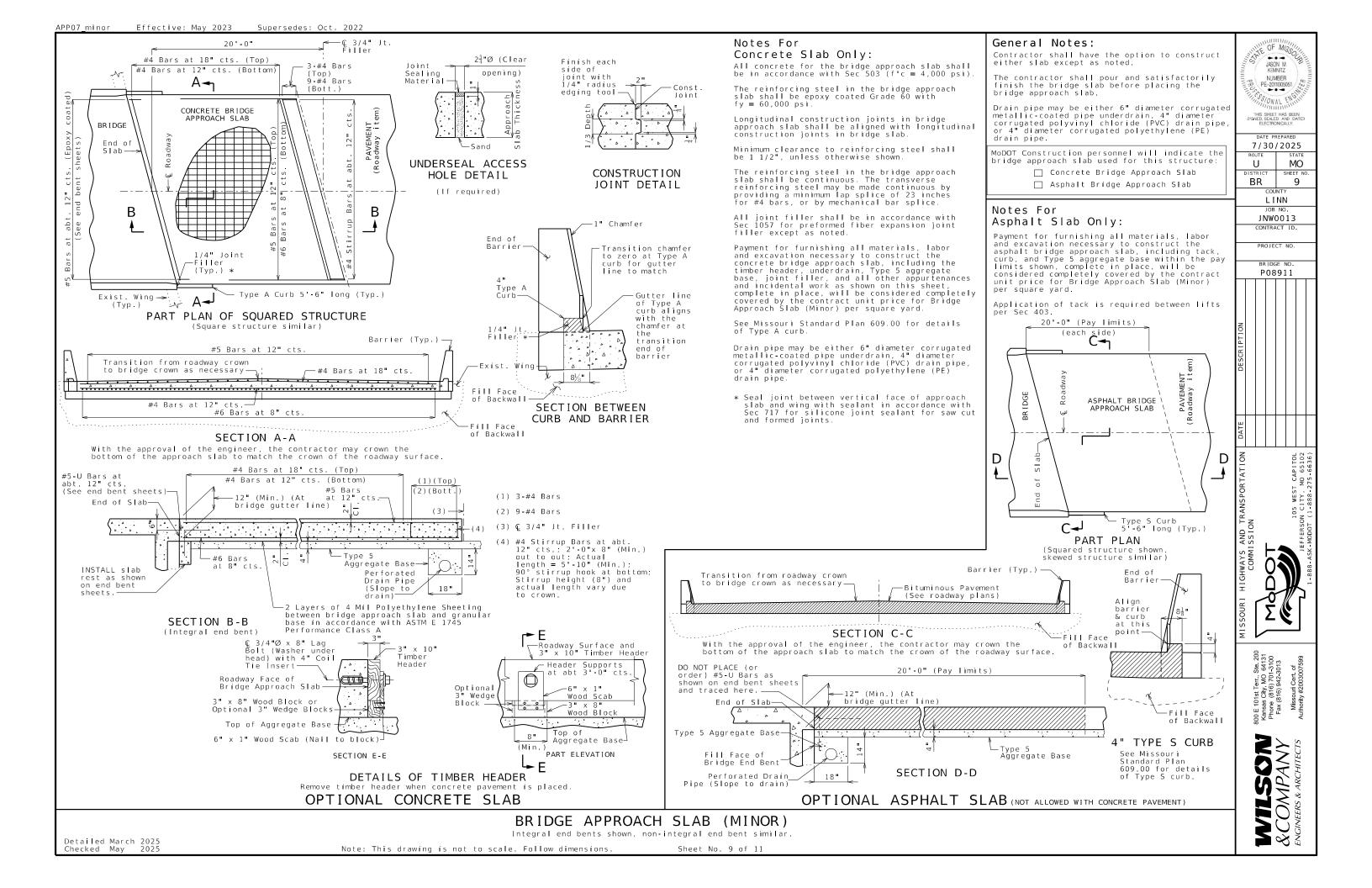
800 E 101st Terr., Ste. 200 Kansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013 Missouri Cert of

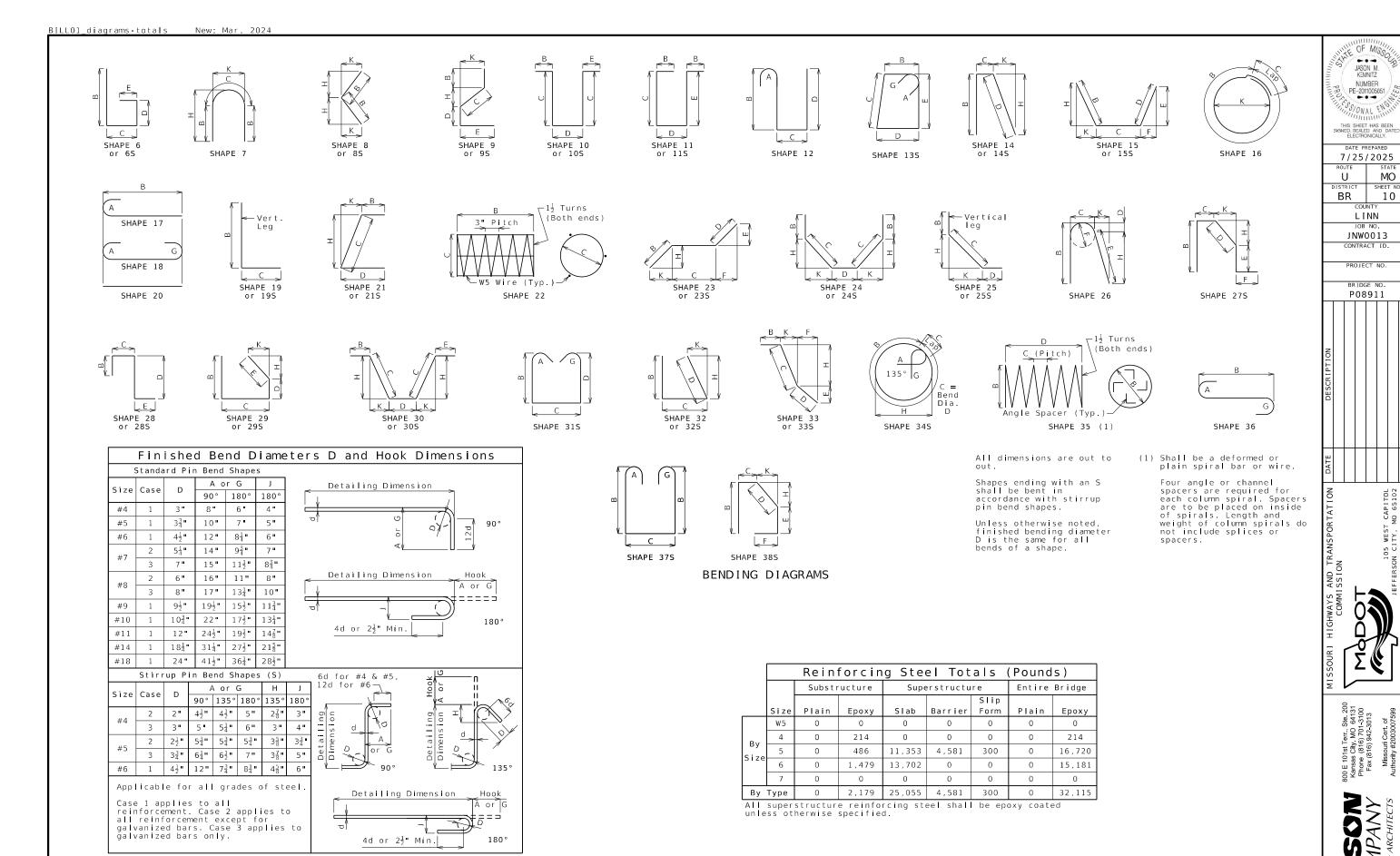
WILSON &COMPANY ENGINEERS & ARCHITECTS

TYPE H BARRIER

Sheet No. 8 of 11

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





BILLO3 data tables New: Mar. 2024

					Bill o	f Reinforci		<u>eeı</u>				<b>.</b>		1				nforcing Steel		1		
o.  s	ize/		C.	des	ВС	Dimension D E	s F	Н К		Actual	Weight		Size/		Codes	В	C D	Dimensions  E F H	K	_	Actual Length	Waiah
	lze/ Mark	Location			ft in, ft in,					. ft in			Size/ Mark	Location				ft in, ft in, ft i			ft in.	
		END BENTS																				
		NO. 1 & 4		+++							220											
6 6	H100	DIAPHRAGM	E 20		25 3.000				25 3	3 25 3	228											
			E 20		24 10 .00					24 10												
			E 20		23 9.000						166											
16 6	H103	DIAPHRAGM	E 10	S	3 0.000	0 15.000			7 3	6 11	423				$\square$							
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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

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

SH = Required shape, see bending diagrams.

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

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

Detailed March 2025 Checked May 2025

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

Sheet No. 11 of 11

JASON M. KEMNITZ NUMBER PE-2011005051

7/25/2025

LINN JNW0013 CONTRACT ID. PROJECT NO. BRIDGE NO. P08911

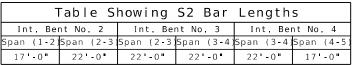
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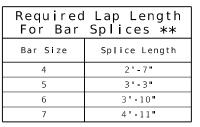
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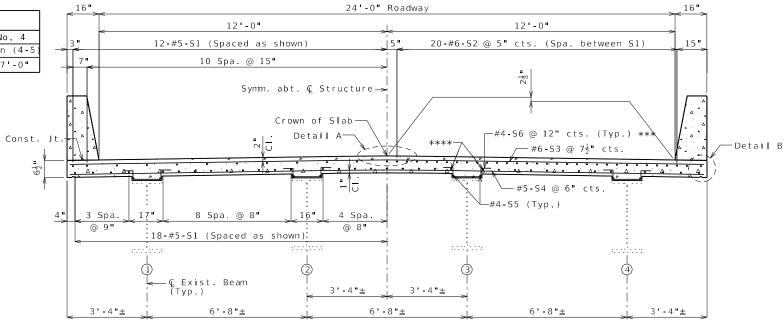
#### SEC/SUR 12 TWP 60N RGE 23W

# U.I.P., REDECK AND MAKE COMPOSITE EXISTING (55'- 75'- 75'- 55') CONTINUOUS WIDE FLANGE BEAM SPANS





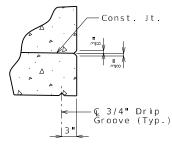
\*\* Unless otherwise shown



TYPICAL SECTION THRU SLAB

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

DETAIL A



DETAIL B

### Design Specifications:

General Notes:

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

Design Loading:

H10 (1944) (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 psiexcept Barrier f c = 4.000 nsReinforcing Steel (ASTM A615 Grade 60) fy = 60,000 psi

Joint Filler:

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 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 súrface. (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.

Traffic Handling:

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



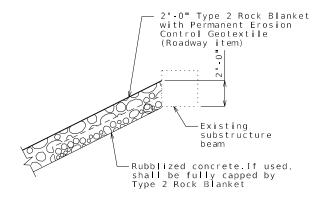
in barrier

\*\*\* #4-S6 haripin bars may be placed at an angle to meet clearance. \*\*\*\* Contractor may shift bars to tie #4-S6 to the bottom longitudinal

HALF SECTION NEAR MIDSPAN

bars as needed.

OPTIONAL SHIFTING TOP BARS AT BARRIER



ROCK BLANKET ON SPILL SLOPES

Estimated Quantities	-	
I t em		Total
Removal of Existing Bridge Deck	sq. foot	6,502
Bridge Approach slab (Minor)	sq. yard	110
Slab on Steel	sq. yard	780
Type H Barrier	linear foot	527
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Shear Connectors	each	2,832
Slab Drain	each	48
Non-Destructive Testing	linear foot	120

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
I t em		Total
Class B-2 Concrete	cu. yard	165
Reinforcing Steel (Epoxy Coated)	pound	66,611

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 E OVER MEDICINE CREEK DRAINAGE DITCH

ROUTE E FROM ROUTE V TO ROUTE K ABOUT 0 4 MILE FAST OF BOUTE V BEGINNING STATION 294+53.00  $\pm$  (MATCH EXISTING)

JASON M. KEMNITZ

NUMBER

PE-2011005051

SONAL EN

7/25/2025

GRUNDY

JNW0013

CONTRACT ID

PROJECT NO

BRIDGE N X01531

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SHEET NO

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0E 101st Terr., Ste. 200 ansas City, MO 64131 Phone (816) 701-3100 Fax (816) 942-3013

Detailed March 2025 Checked May 2025

HALF SECTION NEAR INT. BENT

# 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 & 5 removal lines.

#### General Notes:

#### Stay-In-Place Forms:

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

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

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

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

# 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.

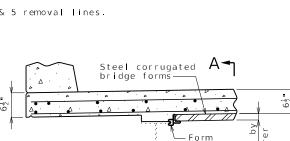
Slab shall be poured upgrade from end to end at a minimum rate of 25 cubic yards per hour.

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.

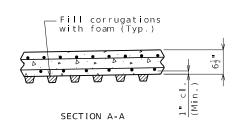
# Haunching:

Slab is to be considered a uniform thickness as shown on the plans. Haunching will vary. See front sheet for slab thickness. Haunches will be increased approximately 1/2" when comparing with original plan dimensions to match existing grade on Rte. E.

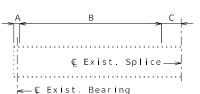


support

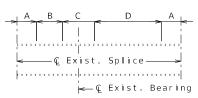
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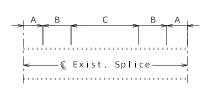
OPTIONAL STAY-IN-PLACE FORM DETAILS



ELEVATION SHOWING SHEAR CONNECTOR SPACING FOR END BEAMS

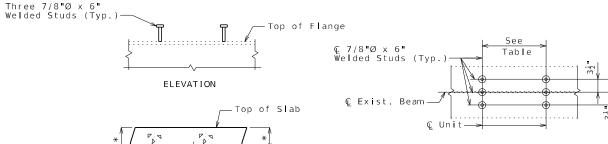


ELEVATION SHOWING SHEAR CONNECTOR SPACING FOR COMBINED BEARING & MID SPAN BEAMS



ELEVATION SHOWING SHEAR CONNECTOR SPACING FOR INT. BENT BEARING BEAMS

TABLE SHOWING SHEAR CONNECTOR UNIT SPACING													
Beam	S.C. per unit	А	В	С	D								
End Beam (Spans 1-2 & 5-4)	3	12 <b>"</b> ±	52 Units @ 10" cts.	2'-1"±	= =								
Brg. Beam (Bent 2 & Span 2-3) & Brg. Beam (Bent 3 & Span 4-3)	3	2'-1"±	7 Units @ 6" cts.	15'-4"±	52 Units @ 10"	cts.							
Brg. Beam (Bent 3)	3	2 - 1 "±	7 Units @ 6" cts.		-								
			Total shear conr	nectors r	equired 2	2,832							



\* 2" Minimum

\*\* Min. Haunch = 0"
Max. Haunch = 3"

HALF SECTION
THRU BEAM

THRU COVER PLATE

SECTION THRU EXIST.

BEAM SHOWING

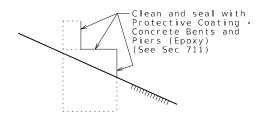
SHEAR CONNECTORS

PLAN OF SHEAR CONN. (3 PER UNIT)

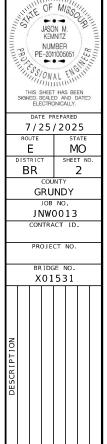
# DETAILS OF SHEAR CONNECTORS

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
END BENTS NO. 1 & 5 SHOWING
PROTECTIVE COATING



COMMISSION

COMMISSION

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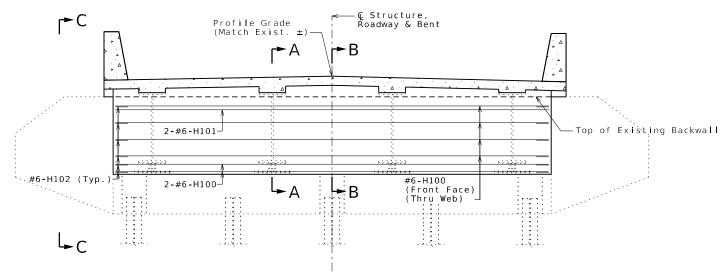
105 WEST CAPIT

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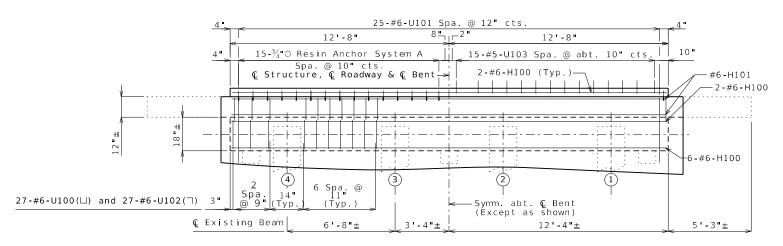
800 E 101st Terr.. Ste. 2 Kansas City, MO 6413 Phone (816) 701-3100 Fax (816) 942-3013

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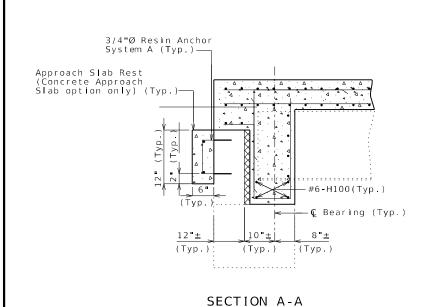


#### SECTION NEAR END BENT

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



# PART PLAN



-Top of Slab (Match Exist. minus 3/16"±) @ End of Slab @ Ç Roadway Dimensions at © Rdwy Transverse Slab Reinforcement(Typ.) Longitudinal Slab Reinforcement(Typ.) #5-U103 (Typ.)
\*\*\*Intall Approach Slab Rest (15" embedment)level with top of existing backwall (Typ.) SECTION B-B

#6-H101 (Typ.) -#6-U101 (Тур.) #6-H100 (Typ.) 3 Layers of 30-lb (Min. Roofing Felt (Typ. ←#6 Bar (Epoxy Coated) 1 1/4" Joint Filler (Typ. #6-U100(凵)(Typ.) Fill Face of End Bent (Typ.)

SECTION C-C

ANCHOR SYSTEM \* Manufacturer's recommended embedment length (5" min.)

Notes:

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

Cost of furnishing and installing the resin anchor system, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab (Minor) for concrete option only.

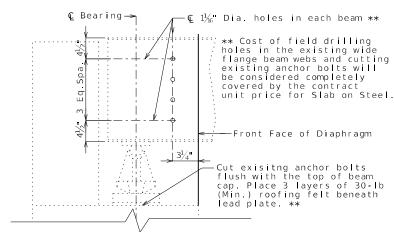
The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

An epoxy coated #6 Grade 60 reinforcing bar shall be substituted for the  $3/4\,\text{"0}$  threaded rod.

All reinforcement and concrete in the concrete diaphragm at the end 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. All reinforcement and concrete in the approach slab rest will be considered completely covered by the contract unit price for Bridge Approach Slab (Minor) for concrete option only.

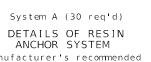
The exposed and accessible surface of the existing structural steel and bearings that will be encased in concrete shall be cleaned with a minimum of SSP-SP-3 surface preparation and coated with a minimum of one coat of gray epoxy-mastic primer (non-aluminum) in accordance with Sec 1081 to produce a dry film thickness of not less than 3 mils before concrete is poured. The surface preparation and coating for beams shall extend a minimum of one foot outside the face of the beam 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 cutting anchor bolts, temporary supports, and placing roofing felt and joint filler will be considered completely covered by the contract unit price for Slab on Steel.



#### DETAIL OF WEB HOLES AT END BENT

#6-U102(□)(Typ.)-



JASON M. KEMNITZ NUMBER PE-2011005051 SONAL ENG

7/25/2025 Ε MO SHEET NO BR 3

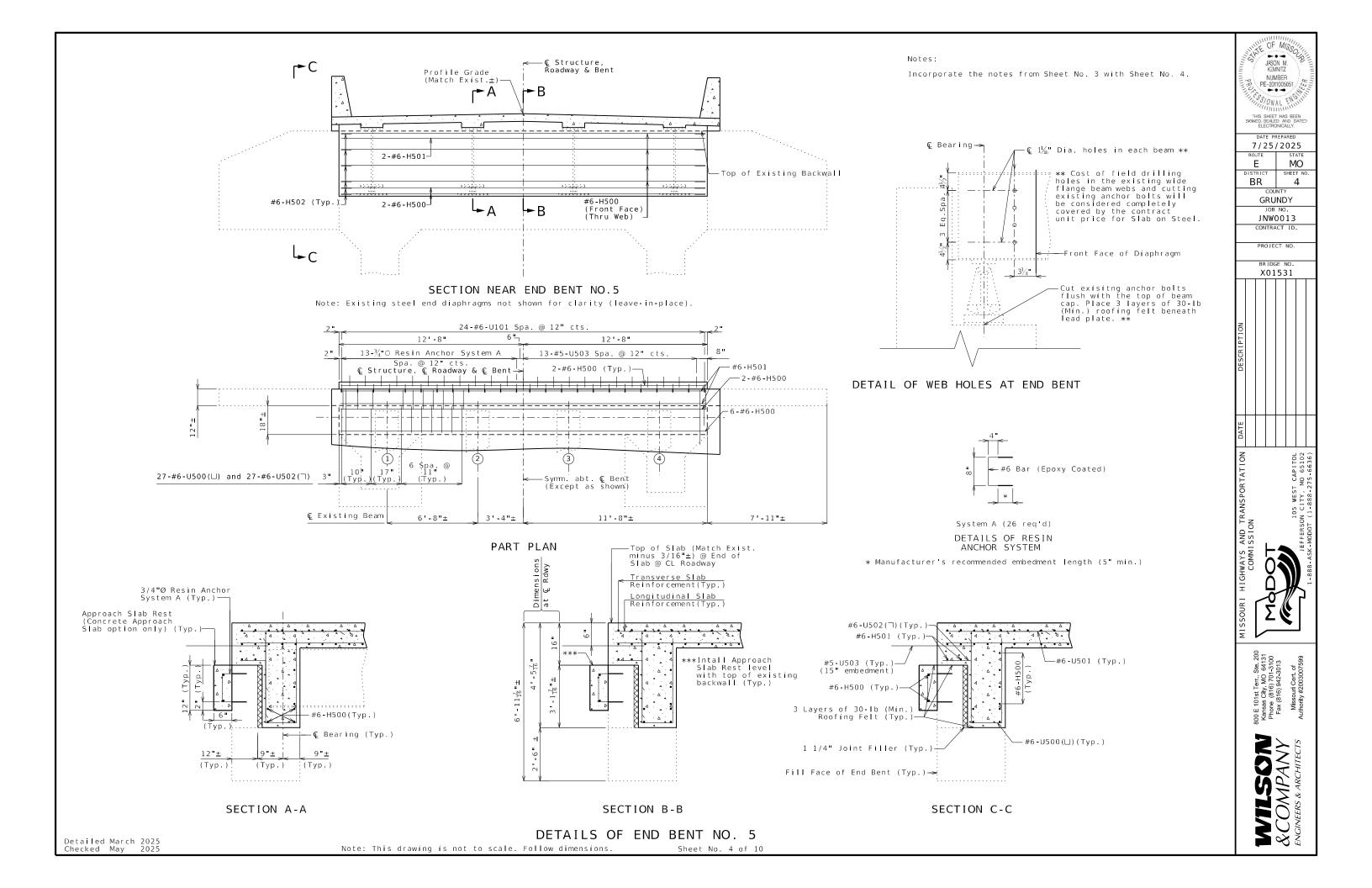
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JNW0013 CONTRACT ID.

PROJECT NO.

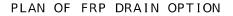
X01531

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# PART PLAN OF SLAB AT DRAIN

SLAB DRAINS



8" (Nom.)

### 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.

# 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

## 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  $8\,{}^{\circ}$  x  $4\,{}^{\circ}$  .

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 b field cut. The method of cutting FRP slab drain shall be as recommended by the manufacturer to ensure a smooth, chip free



7/25/2025 Ε MO SHEET NO BR 5

GRUNDY LOB NO JNW0013

CONTRACT ID. PROJECT NO

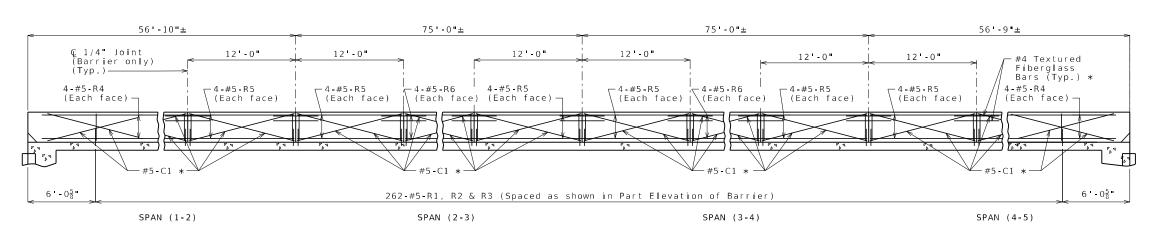
BRIDGE NO X01531

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

1" (Min.)

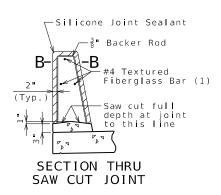
PART SECTION NEAR DRAIN

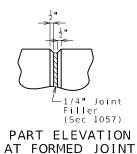
Detailed March 2025

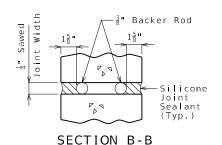


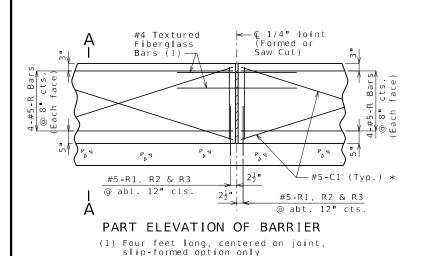
#### ELEVATION OF BARRIER

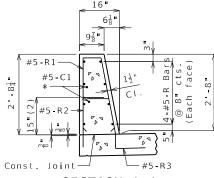
(Left barrier shown, right barrier similar)
Longitudinal dimensions are horizontal.







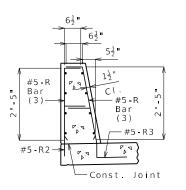






The cross-sectional area above the slab is 2.89 square feet.

(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.

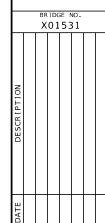
For slip-formed option, both sides of barrier shall have a vertically broomed finish and the top shall have a transversely broomed finish.



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PROJECT NO.



COMMISSION

THIGHWAYS AND TRANSPORTATION

COMMISSION

TO THE TO THE TRANSPORTATION

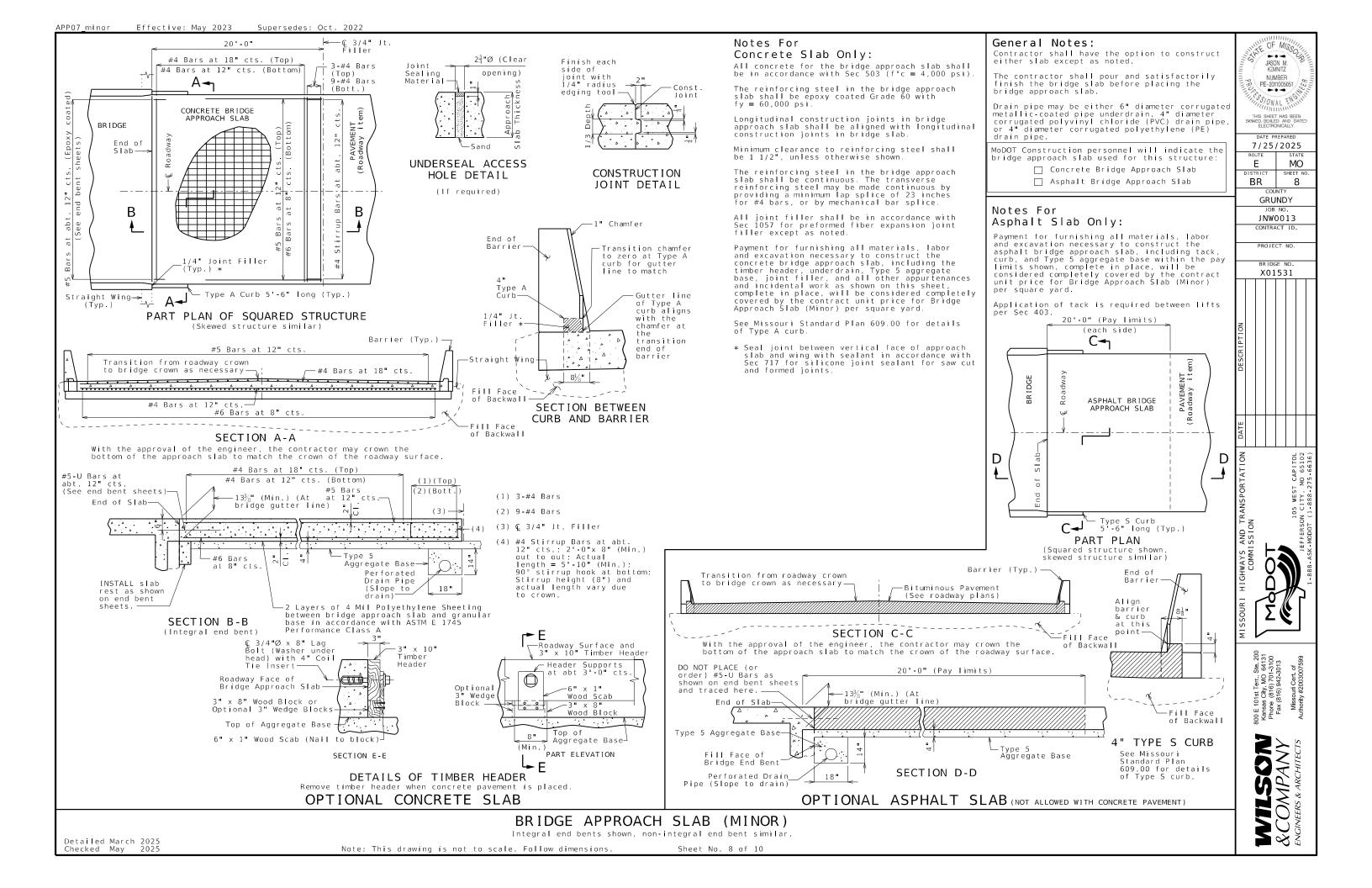
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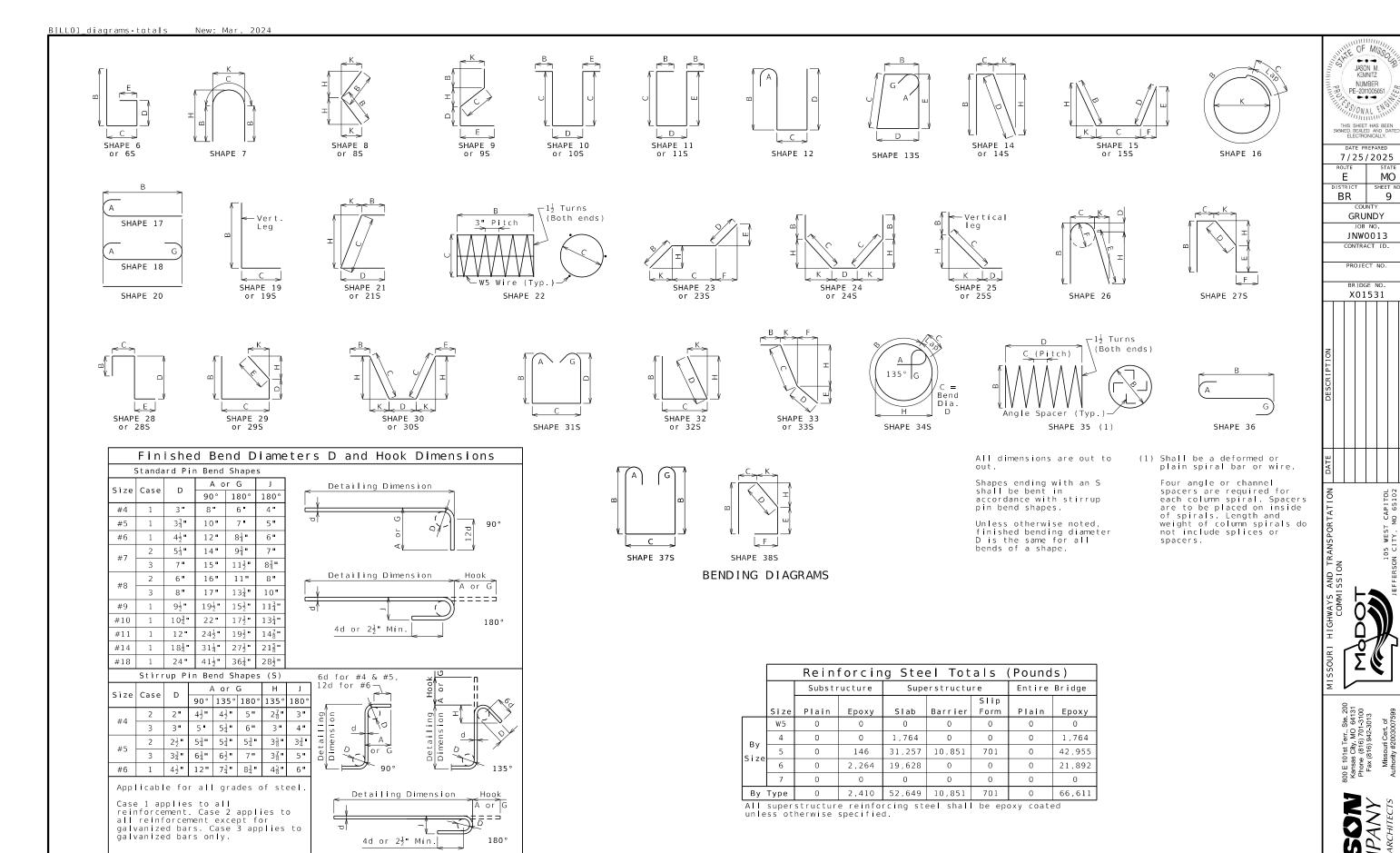
TO THE TRANSPORTATION

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# TYPE H BARRIER





BILLO3 data tables New: Mar. 2024

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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.

For bending diagrams and steel reinforcing totals, see Sheet No. 9.

Detailed March 2025 Checked May 2025

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

Sheet No. 10 of 10

JASON M. KEMNITZ NUMBER PE-2011005051

7/25/2025

GRUNDY JOB NO. JNW0013 CONTRACT ID. PROJECT NO. BRIDGE NO. X01531

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SHEET NO

10