MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
PLANS FOR PROPOSED
STATE HIGHWAY
CASS COUNTY

DESIGN DESIGNATION

ADT - 2020 = 4500
ADT - 2040 = 5100
DHV = 550
TRUCK = 19%
V = 55-60 MPH
D = 50/50

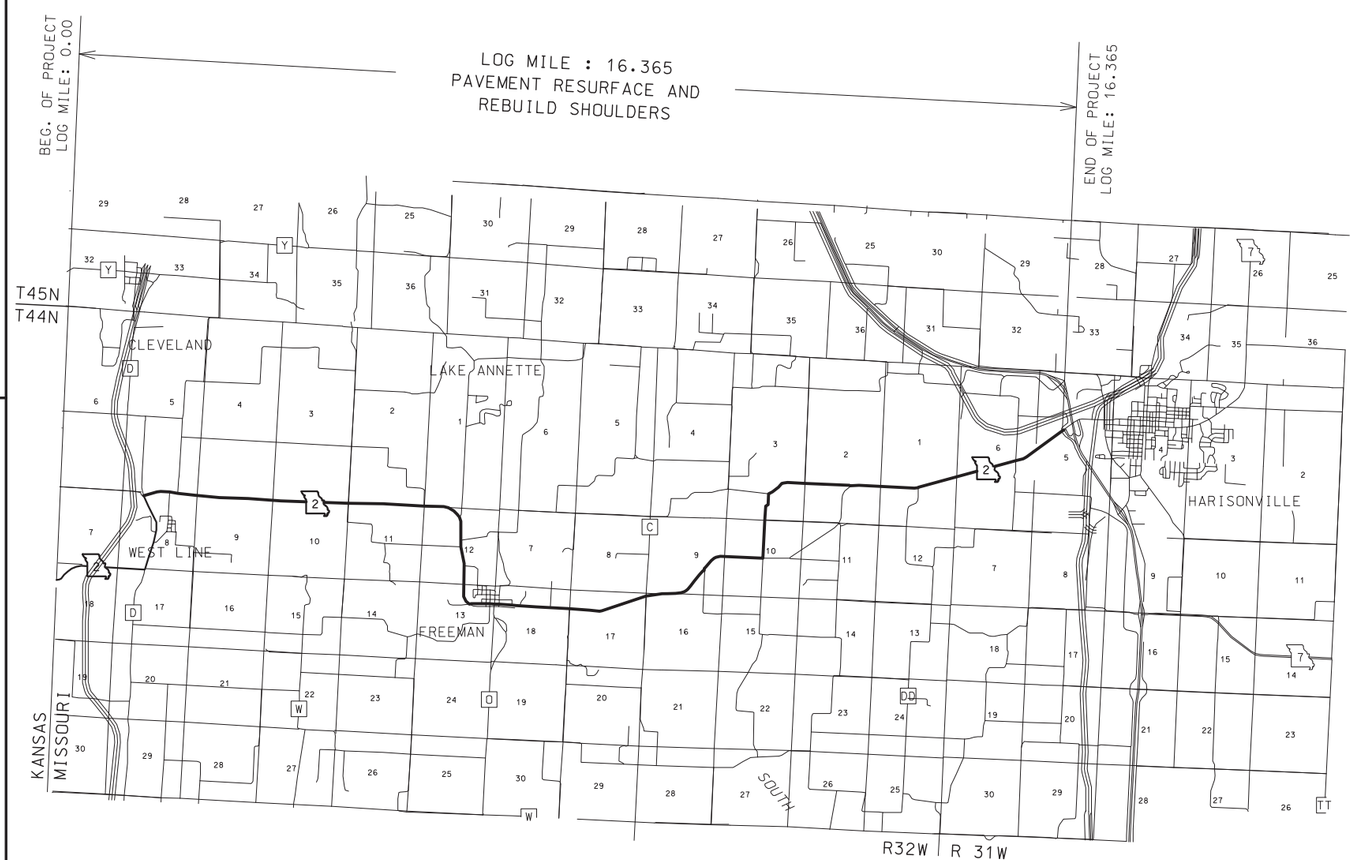
FUNCTIONAL CLASSIFICATION - PRINCIPLE ARTERIAL

NO RIGHT OF WAY TO BE ACQUIRED
FOR THIS PROJECT

CONVENTIONAL SYMBOLS
(USED IN PLANS)

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

NOTE: DASHED OR OPEN SYMBOLS INDICATE
EXISTING FEATURES



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.

1/2 0 1 2
SCALE IN MILES

TITLE SHEET
SHEET 1 OF 1

INDEX OF SHEETS

DESCRIPTION	SHEET NUMBER
TITLE SHEET	1
TYPICAL SECTIONS (TS) (1 SHEET)	2
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SPECIAL SHEETS (SS)	5-9
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(BR. A20871) (4 SHEETS)	1-4

LENGTH OF PROJECT

BEGINNING OF PROJECT LOG MILE: 0.000
END OF PROJECT LOG MILE: 16.365

APPARENT LENGTH 86407.20 FEET

EQUATIONS AND EXCEPTIONS:

BRIDGE A2539
BEG. LOG MILE: 2.080
END. LOG MILE: 2.102

BRIDGE A1391
BEG. LOG MILE: 9.282
END. LOG MILE: 9.329

BRIDGE L0327
BEG. LOG MILE: 14.518
END. LOG MILE: 14.555

TOTAL CORRECTIONS	559.68	FEET
NET LENGTH OF PROJECT	85847.52	FEET
STATE LENGTH	16.259	MILES
FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES	24.410	ACRES

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

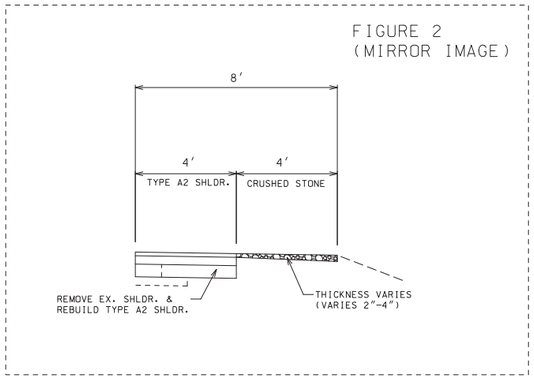
DATE PREPARED	
7/13/2020	
ROUTE 2	STATE MO
DISTRICT KC	SHEET NO. 1
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

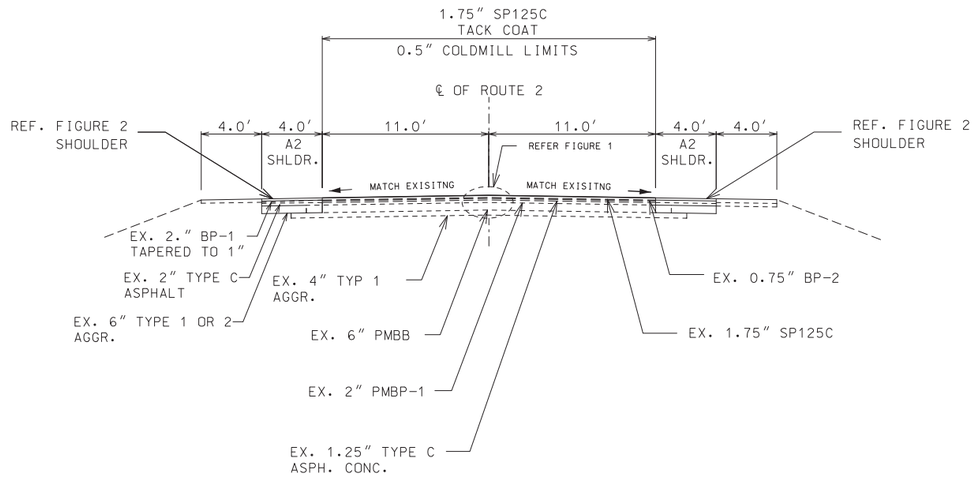
DATE	DESCRIPTION

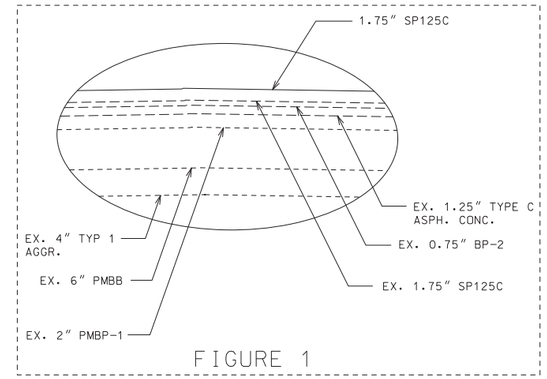
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

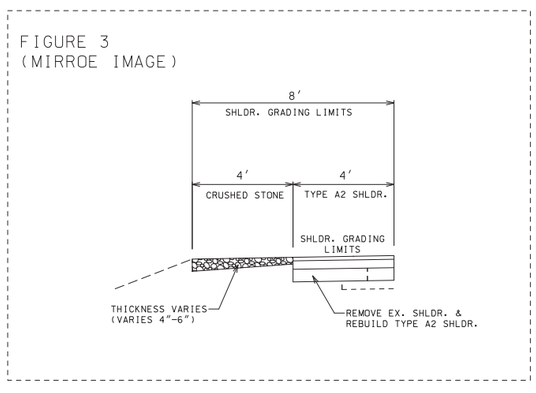
TYPICAL SECTIONS

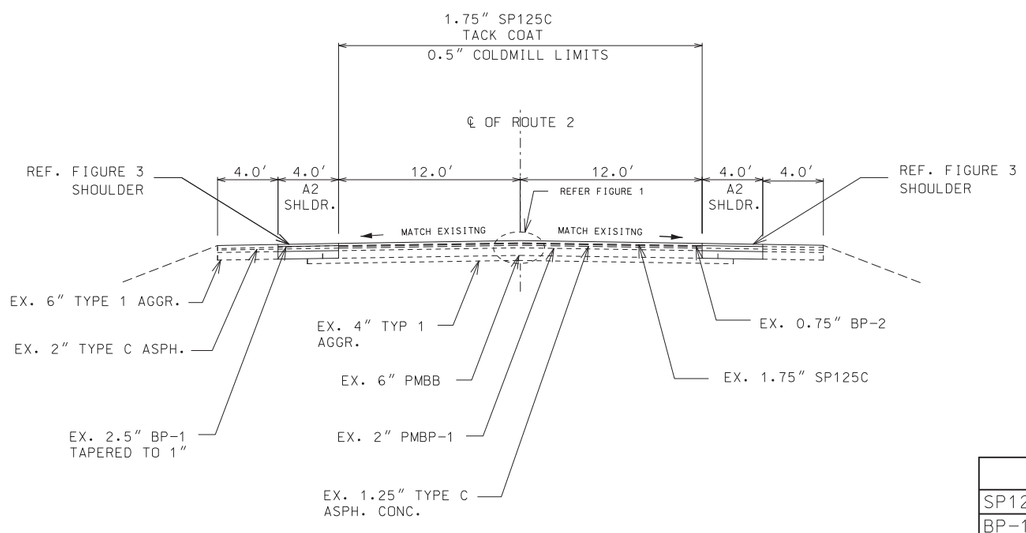






LOG MILE: 0.000 TO 7.534





LOG MILE: 7.534 TO 16.365

ESTIMATE FACTORS	
SP125C w/ PG 64-22	2.002 TONS/ CY
BP-1 w/ PG 64-22	1.993 TONS/ CY
BB w/ PG 64-22	2.006 TONS/ CY
TACK COAT	0.10 GAL/ SY
TYPE 5 AGGREGATE	1.30 TON/ CY

NOT TO SCALE

TYPICAL SECTIONS
SHEET 1 OF 1

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
8/24/2020	
ROUTE 2	STATE MO
DISTRICT KC	SHEET NO. 2
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

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

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

ENTRANCES AND APPROACHES

LOG MILE	AREA SQFT	CRUSHED STONE SQYD	MODIFIED COLDMILLING SQYD	1.75" SP125C PG64-22 TONS	1.75" BP-1 PG64-22 TONS	TACK COAT GAL	COMMENTS
0.039	150	16.67					PVT. ENT. EB
0.239	230	25.56					PVT. ENT. WB
0.319	150	16.67					PVT. ENT. WB
0.399	475	52.78					PVT. ENT. EB & WB
0.759	495	55.00					PVT. ENT. WB
0.978	440	48.89					PVT. ENT. EB
1.018	595	66.11					PVT. ENT. WB
1.178	1050	116.67					PVT. ENT. WB
1.200	4700		522.22	50.82		52	RTE.D - RTE. 2
1.218	600	66.67					PVT. ENT. EB
1.264	750	83.33					PVT. ENT. WB
1.587	2950		327.78		31.76	33	WESTLINE RD.
1.744	550	61.11					QUARRY ENT. WB
2.240	3860		428.89	41.74		43	RTE.D - RTE. 2
2.287	500	55.56					PVT. ENT. WB
2.440	750	83.33					PVT. ENT. EB
2.485	200	22.22					PVT. ENT. WB
2.585	3135	348.33					PVT. ENT. EB & MAIN STREET
2.645	440	48.89					PVT. ENT. EB
2.699	1900	211.11					PVT. ENT. EB & WESTLINE Rd
2.799	250	27.78					PVT. ENT. EB
2.940	150	16.67					PVT. ENT. EB
3.120	565	62.78					PVT. ENT. WB
3.199	670	74.44					PVT. ENT. EB
3.204	500	55.56					PVT. ENT. EB
3.240	275	30.56					PVT. ENT. WB
3.260	300	33.33					PVT. ENT. EB
3.421	500	55.56					PVT. ENT. WB
3.460	850	94.44					PVT. ENT. EB & WB
3.600	375	41.67					PVT. ENT. WB
3.661	325	36.11					PVT. ENT. EB
4.134	675	75.00					PVT. ENT. EB & WB
4.253	250	27.78					PVT. ENT. EB
4.483	280	31.11					PVT. ENT. WB
4.641	400	44.44					PVT. ENT. WB
4.683	150	16.67					PVT. ENT. EB
4.763	250	27.78					PVT. ENT. WB
4.783	400	44.44					PVT. ENT. EB & WB
1.933	6025		669.44		64.86	67	GROH RD INTERSECTION
5.523	575	63.89					PVT. ENT. WB
5.942	1200	133.33					RED BUD RD - WB
5.962	260	28.89					RED BUD RD - EB
6.142	200	22.22					PVT. ENT. WB
6.222	175	19.44					PVT. ENT. WB
6.463	2100		233.33		22.61	23	LAKE ANNETE RD. APPR.
6.545	1400	155.56					PVT. ENT. EB & WB
6.585	175	19.44					PVT. ENT. EB
6.747	1800		200.00		19.38	20	269TH ST. APPR.
6.830	2325		258.33		25.03	26	MORRISTOWN RD APPR.-WB
6.830	1310	145.56					E 271ST ST
6.830	850	94.44					271ST ST. EB
7.006	220	24.44					PVT. ENT. WB
7.009	1450		161.11		15.61	16	273RD ST - WB
7.335	100	11.11					PVT. ENT. WB
7.370	150	16.67					PVT. ENT. EB
SUB-TOTAL 1		2910.01	2801.10	92.56	179.25	280.00	

ENTRANCES AND APPROACHES

LOG MILE	AREA SQFT	CRUSHED STONE SQYD	MODIFIED COLDMILLING SQYD	1.75" SP125C PG64-22 TONS	1.75" BP-1 PG64-22 TONS	TACK COAT GAL	COMMENTS
7.475	280	31.11					PVT. ENT. EB
7.624	3250		361.11		34.99	36	MAIN ST. INTERSECTION.
7.845	2700		300.00		29.06	30	HARRISON ST. INERSECTION
7.903	1750		194.44		18.84	19	ROUTE O
8.023	150	16.67					PVT. ENT. EB
8.123	150	16.67	16.67		1.61	2	PVT. ENT. WB
8.586	1650		183.33		17.76	18	OLD HWY 2
8.960	1900		211.11		20.45	21	BENNETT RD
9.720	350	38.89					PVT. ENT. EB & WB
9.741	150	16.67					PVT. ENT. EB
9.801	200	22.22					PVT. ENT. WB
9.981	5250		583.33		56.51	58	RTE.C & WOLF RD. INTR.
10.140	150	16.67					PVT. ENT. EB
10.200	100	11.11					PVT. ENT. WB
10.240	250	27.78					PVT. ENT. EB
10.380	200	22.22					PVT. ENT. WB
10.822	150	16.67					PVT. ENT. EB
10.862	750	83.33					LEWIS RD
11.120	650	72.22					PVT. ENT. EB & WB
11.300	500	55.56					PVT. ENT. WB
11.479	500	55.56					PVT. ENT. WB
11.499	350	38.89					PVT. ENT. EB
11.719	1600		177.78		17.22	18	S GRANDRIVER RD. INTR.
11.726	475	52.78					S GRANDRIVER RD. INTR.-WB
11.739	500	55.56					PVT. ENT. EB
11.839	350	38.89					PVT. ENT. WB
12.060	2500	277.78					E 271ST ST. INTR. - EB
12.201	350	38.89					PVT. ENT. WB
12.600	125	13.89					PVT. ENT. EB
12.700	150						PVT. ENT. EB
12.800	150						PVT. ENT. EB
12.861	1500		166.67		16.15	17	BILL SCHOOL RD - EB
12.861	1000		111.11		10.76	11	267TH ST WB
13.400	1600		177.78		17.22	18	E 263rd ST. - LT
13.479	550		61.11		5.92	6	PVT. ENT. WB.
13.539	350	38.89					PVT. ENT. EB.
13.818	200	4.69					PVT. ENT. EB.
13.938	325	7.62					PVT. ENT. WB.
14.278	4500		500.00		48.44	50	RTE. DD- RT.
14.439	480	53.33					PVT. ENT. WB.
14.558	700	77.78					PVT. ENT. EB & WB
14.818	385	42.78					PVT. ENT. WB.
15.018	750		83.33		8.07	8	PVT. ENT. WB.
15.358	250	27.78					PVT. ENT. WB.
15.617	2375		263.89		25.57	26	BRUSH COLLEGE RD
15.757	500	55.56					PVT. ENT. EB & WB
16.343	3235		359.44		34.82	36	CLEARWATER DR. INTR.
SUB-TOTAL 2		1328.46	3751.10	0.00	363.39	374.00	
SUB-TOTAL 1		2910.00	2801.11	92.56	179.25	280.11	
ADDITION					10.85		2% RUTTING
TOTAL 3		4238.46	6552.21	92.56	553.49	654.11	

PAVING QUANTITIES

BEG. LOG	END LOG	LENGTH LF	WIDTH LF	EX. SHLDR RT & LT LF	NEW SHLDR RT & LT LF	COLDMILLING 3" OR LESS SQYD	MODIFIED COLDMILLING SQYD	1.75" SP125C PG64-22 TONS	TACK COAT GAL	SHOULDER GRADING 100F	SHLDR. TYPE 5 AGGR.BASE.6" SQYD	TYPE A2 SHOULDER SQYD	4'WIDE SHLDR. CRUSHED STONE SQYD	1.75" BP-1 PG64-22 TONS	BIT. C/L RUMBLE STRIP STA.	BIT. SHOULDER RUMBLE STRIP STA.	PERM. TRANSVERSE RUMBLE STRIP LF	COMMENTS
0.000	0.019	100.32	22	8	8		245.23	23.87	24.52	2.01	89.17	89.17	89.17		1.00	2.01		BEGINNING OF PROJECT
0.019	0.562	2867.04	22	8	8	7008.32		682.05	700.83	57.34	2548.48	2548.48	2548.48		28.67	57.34		
0.562	0.569	36.96	22	8	8			8.79	9.03	0.74	32.85	32.85	32.85		0.37	0.74		AVG. 3.1" TCK. SP125C. BEFORE RR CROSSING
0.569	0.577	42.24	22	8	8		140.80	10.05	10.33	0.84	37.55	37.55	37.55		0.42	0.84		BEFORE RR CROSSING
0.579	0.587	42.24	22	8	8		140.80	10.05	10.33	0.84	37.55	37.55	37.55		0.42	0.84		AFTER RR CROSSING
0.587	0.596	47.52	22	8	8		116.16	11.30	11.62	0.95	42.24	42.24	42.24		0.48	0.95		
0.617	1.200	3078.24	22	8	8	7524.59		732.29	752.46	61.56	2736.21	2736.21	2736.21		30.78	61.56	460.00	TRANS. RUMBLE STRIP ON EB BEFORE RTE.D
1.200	2.061	4546.08	22	8	8	11112.64		1081.48	1111.26	90.92	4040.96	4040.96	4040.96		45.46	90.92		ROUTE D
2.061	2.080	100.32	22	8	8		245.23	23.87	24.52	2.01	89.17	89.17	89.17		1.00	2.01		
2.080	2.102	116.16																BRIDGE A2539 - EXCEPTION
2.102	2.121	100.32	22	8	8		245.23	23.87	24.52	2.01	89.17	89.17	89.17		1.00	2.01		
2.121	2.242	638.88	22	8	8	1561.71		151.98	156.17	12.78	567.89	567.89	567.89		6.39	12.78		ROUTE D
2.242	4.861	13828.32	22	8	8	33802.56		3289.65	3380.26	276.57	12291.84	12291.84	12291.84		138.28	276.57	460.00	TRANS. RUMBLE STRIP ON WB BEFORE RTE.D
4.861	5.061	1056.00	33	8	8	3872.00		376.82	387.20	21.12	938.67	938.67	938.67		10.56	21.12		LEFT AND RIGHT TURNS
5.061	7.534	13057.44	24	8	8	34819.84		3388.65	3481.98	261.15	11606.61	11606.61	11606.61		130.57	261.15		
7.534	9.263	9129.12	24	16	8	24344.32		2369.18	2434.43	182.58	8114.77	8114.77	8114.77		91.29	182.58		
9.263	9.282	100.32	24	16	8		267.52	26.03	26.75	2.01	89.17	89.17	89.17		1.00	2.01		
9.282	9.329	248.16																BRIDGE A1391 - EXCEPTION
9.329	9.348	100.32	24	16	8		267.52	26.03	26.75	2.01	89.17	89.17	89.17		1.00	2.01		
9.348	9.801	2391.84	24	16	8	6378.24		620.73	637.82	47.84	2126.08	2126.08	2126.08		23.92	47.84		
9.801	9.821	105.60	24	16	8		281.60	27.41	28.16	2.11	93.87	93.87	93.87		1.06	2.11		
9.821	9.981	844.80	24	8	4	2252.8		219.24	225.28	16.90	750.93	750.93	750.93		8.45	16.90		1.75" COLDMILL LIMITS (CONCRETE ENTRANCE)
9.981	10.001	105.60	24	16	8		281.60	27.41	28.16	2.11	93.87	93.87	93.87		1.06	2.11		
10.001	14.499	23749.44	24	16	8	63331.84		6163.42	6333.18	474.99	21110.61	21110.61	21110.61		237.49	474.99		
14.499	14.518	100.32	24	16	8		267.52	26.03	26.75	2.01	89.17	89.17	89.17		1.00	2.01		
14.518	14.555	195.36																BRIDGE L0327 - EXCEPTION
14.555	14.574	100.32	24	16	8		267.52	26.03	26.75	2.01	89.17	89.17	89.17		1.00	2.01		
14.574	16.175	8453.28	24	16	8	22542.08		2193.78	2254.21	169.07	7514.03	7514.03	7514.03		84.53	169.07		
16.175	16.195	105.60	24	8	4		281.60	27.41	28.16	2.11	93.87	93.87	93.87		1.06	2.11		
16.195	16.258	332.64	24	16	8	887.04		86.33	88.70	6.65	295.68	295.68	295.68		3.33	6.65		
16.258	16.277	100.32	24	16	8		267.52	26.03	26.75	2.01	89.17	89.17	89.17		1.00	2.01		
16.277	16.346	364.32	24	16	8	971.52		94.55	97.15	7.29	323.84	323.84	323.84		3.64	7.29		
16.346	16.365	100.32	24	16	8		267.52	26.03	26.75	2.01	89.17	89.17	89.17		1.00	2.01		
TOTAL 4						220409.50	3583.37	21800.36	22400.78	1714.55	76200.93	76200.93	76200.93		857.23	1714.55	920.00	
TOTAL 3							6552.21	92.56	654.11				4238.46	553.49				ENTRANCES & SIDE ROADS
ADDITION								436.01										2% RUTTING
FINAL TOTAL						220409.50	10135.58	22328.93	23054.89	1714.55	76200.93	76200.93	80439.39	553.49	857.23	1714.55	920.00	
PAY TOTAL						220410.00	10136.00	22329.00	23055.00	1715.00	76201.00	76201.00	80439.00	553.50	857.20	1714.60	920.00	

QUANTITY SHEET
SHEET 1 OF 4

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 7/9/2020

ROUTE	STATE
2	MO
DISTRICT	SHEET NO.
KC	3

COUNTY CASS

JOB NO. J4P3248

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

PAVEMENT MARKINGS

BEG. LOG	END LOG	LENGTH LF	4" YELLOW WATERBORNE PVM'T. MARKING PAINT TYPE P BEADS LF	4" BROKEN YELLOW WATERBORNE PVM'T. MARKING PAINT TYPE P BEADS LF	4" WHITE WATERBORNE PVM'T. MARKING PAINT TYPE P BEADS LF	PREFORMED THERMOPLASTIC 24" YELLOW PVM'T. MARKING LF	PREFORMED THERMOPLASTIC 24" WHITE-STOP PVM'T. MARKING LF	PREFORMED THERMOPLASTIC RR PVM'T. MARKING EA	PREFORMED THERMOPLASTIC LT/RT ARROW PVM'T. MARKING EA	COMMENTS
0.000	0.561	2962	5924		5924					
0.561	0.583	116					22	2		RR CROSSING & STOP BARS
0.583	0.618	185	370		370					
0.618	0.758	739	739	185	1478					
0.758	1.157	2107		527	4214					
1.157	1.209	275	550		550					
1.209	1.681	2492		623	4984					
1.681	1.801	634	634	159	1268					
1.801	1.920	628	1256		1256					
1.920	2.080	845	845	211	1690		11			EB-STOP BAR BEFORE ROUTE D
2.080	2.319	1262	2524		2524		11			WB-STOP BAR BEFORE ROUTE D
2.319	2.699	2006	2006	502	4012		11			MAIN ST-STOP BAR
2.699	4.821	11204		2801	22408					
4.821	4.842	111	222		222					
4.842	4.921	417	1668		934	60	22		1	GROH RD.- RT. TURN. STOP BARS & HASH BARS
4.960	5.061	533	2132		1166	60	22		1	GROH RD.- LT. TURN. STOP BARS & HASH BARS
5.061	5.082	111	222		222					
5.082	6.102	5386		1347	10772					
6.102	6.302	1056	1056	264	2112					
6.302	7.685	7302	14604		14604					
7.685	7.826	744	744	186	1488					
7.826	7.946	634		159	1268		22			STOP BARS AT ROUTE D
7.946	8.106	845	845	211	1690					
8.106	8.467	1906	3812		3812					
8.467	8.687	1162	1162	291	2324					
8.687	9.046	1896		474	3792					
9.046	9.287	1272	1272	318	2544					
9.287	9.746	2424	4848		4848					
9.746	9.807	322	322	81	644					
9.807	9.886	417	834		834					
9.886	10.007	639	639	160	1278		11			STOP BAR AT ROUTE C
10.007	10.106	523	1046		1046					
10.106	10.205	523	523	131	1046					
10.205	10.285	422	844		844					
10.285	10.426	744	744	186	1488					
10.426	10.548	644	1288		1288					
10.548	10.668	634	634	159	1268					
10.668	10.769	533	1066		1066					
10.769	10.909	739	739	185	1478					
10.909	11.207	1573	3146		3146					
11.207	11.366	840	840	210	1680					
11.366	11.526	845		211	1690					
11.526	11.726	1056	1056	264	2112					
11.726	12.288	2967	5934		5934					
12.288	12.566	1468	1468	367	2936					
12.566	13.465	4747	9494		9494					
13.465	13.645	950	950	238	1900					
13.645	14.044	2107		527	4214					
14.044	14.485	2328	2328	582	4656		11			STOP BAR AT ROUTE DD
14.485	15.464	5169		1292	10338					
15.464	15.664	1056	1056	264	2112					
15.664	15.765	533	1066		1066					
15.765	15.965	1056	1056	264	2112					
15.965	16.365	2112		528	4224					
			84508	13907	172370	120		2	2	
	PAY TOTAL		98415.00		172370.00	120.00	143.00	2.00	2.00	

MGS-GUARDRAIL

BEG. LOG	END LOG	LENGTH LF	MGS GR LF	GR TYPE A LF	MGS-TYPE A CET MASH EA	MGS-BRIDGE APPROACH TRANSITION SECTION EA	TRANSITION SECTION EA	MGS END ANCHOR EA	SHAPING CLASS III 100LF	REMARKS
2.047	2.080	125.00	50.00		1.0	1.0			0.75	BRIDGE A2539 -EB_ADJACENT
2.102	2.117	125.00	37.50		1.0	1.0			0.75	BRIDGE A2539 -EB_OPPOSING
67.505	67.539	125.00	50.00		1.0	1.0			0.75	BRIDGE A2539 -WB_ADJACENT
67.559	67.575	125.00	37.50		1.0	1.0			0.75	BRIDGE A2539 -WB_OPPOSING
62.808	62.874	350.00	250.00		2.0				1.50	BETWEEN 269TH & MORRISTOWN RD.-WB
9.251	9.282	100.00	125.00		1.0	1.0			0.75	BRIDGE A1391-EB_ADJACENT
60.368	60.357	100.00	87.50		1.0	1.0			0.75	BRIDGE A1391-WB_OPPOSING
9.348	9.359	100.00	87.50		1.0	1.0			0.75	BRIDGE A1391-EB_OPPOSING
60.268	60.304	100.00	125.00		1.0	1.0			0.75	BRIDGE A1391-WB_ADJACENT
10.366	10.400		125.00		1.0				0.75	* NEW GR AT EX. CULVERT A2087-EB_ADJACENT
59.239	59.265			62.50				1.0	1.00	* NEW GR AT EX. CULVERT A2087-WB_OPPOSING
10.406	10.432		100.00		1.0				0.75	* NEW GR AT EX. CULVERT A2087-EB_OPPOSING
59.266	59.233		125.00		1.0				0.75	* NEW GR AT EX. CULVERT A2087-WB_ADJACENT
58.617	58.709	287.50	400.00		2.0				1.50	0.10 MILE EAST OF LEWIS RD - WB
14.477	14.518	125.00	112.50		1.0	1.0			0.75	BRIDGE L0327-EB_ADJACENT
55.121	55.145	125.00	75.00		1.0	1.0			0.75	BRIDGE L0327-WB_OPPOSING
14.555	14.526	81.25	0.00		1.0	1.0			0.75	BRIDGE L0327-EB_OPPOSING
55.084	55.069	125.00		112.50			1.0	1.0	1.00	BRIDGE L0327-WB_ADJACENT
TOTAL			1787.50	175.00	18.00	11.00	1.00	2.00	15.50	
FINAL TOTAL			1788.00	175.00	18.00	11.00	1.00	2.00	16.00	

* REFER BRIDGE PLAN SHEETS FOR THRIE BEAM SECTION AT THIS LOCATION

RELOCATE THE EXISTING SIGN ASSEMBLIES

ITEM	QUANTITY	UNIT	COMMENTS
RELOCATE SIGN ASSEMBLIES	1.00	EA	EXISITNG SIGN ASSEMBLY ON THE EAST OF RR CROSSING(REFER SHEET 19)
RELOCATE SIGN ASSEMBLIES	1.00	EA	EXISITNG SIGN ASSEMBLY ON THE WEST OF RR CROSSING (REFER SHEET 19)
TOTAL	2.00	EA	

QUANTITY SHEET
SHEET 2 OF 4

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 7/9/2020

ROUTE	STATE
2	MO
DISTRICT	SHEET NO.
KC	3

COUNTY CASS

JOB NO. J4P3248

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

TEMPORARY EROSION CONTROL

BEG. LOG MILE	END LOG MILE	SILT FENCE LF	ALTERNATE DITCH CHECK LF	COMMENTS
0.047	0.185	728.64		EB ON ROUTE 2
0.245	0.325	844.80		EB & WB ON ROUTE 2 OVER EX. CULVERT
0.307			50	EX. CULVERT
0.685	0.735	528.00		EB & WB ON ROUTE 2 OVER EX. CULVERT
0.719			50	EX. CULVERT
1.055	1.215	1689.60		EB & WB ON ROUTE 2 OVER EX. CULVERT
1.135			50	EX. CULVERT
1.325	1.350	132.00		EB ON ROUTE 2
1.360	1.720	1900.80		WB ON ROUTE 2 & OVER EX. CULVERT
1.595	1.720	660.00		EB ON ROUTE 2 & OVER EX. CULVERT
1.647			50	EX. CULVERT
1.985	2.115	1372.80		EB & WB ON ROUTE 2 OVER EX. BRIDGE
2.061	2.080		100	EX. BRIDGE A 2539- PONEY CREEK
3.275	3.420	1531.20		EB & WB ON ROUTE 2 & OVER EX. CULVERT
3.357			50	EX. CULVERT
3.420	3.655	1240.80		EB ON ROUTE 2
3.735	3.825	950.40		EB & WB ON ROUTE 2 & OVER EX. CULVERT
3.815			50	EX. CULVERT
3.825	4.13	1610.40		EB ON ROUTE 2
4.356	4.505	1573.44		EB & WB ON ROUTE 2 & OVER EX. CULVERT
4.445			50	EX. CULVERT
4.705	4.750	237.60		WB ON ROUTE 2
4.810	4.930	1267.20		EB & WB ON ROUTE 2 & OVER EX. CULVERT
4.847			50	EX. CULVERT
6.670	6.825	818.40		EB ON ROUTE 2 & OVER EX. CULVERT
6.755	6.825	369.60		WB ON ROUTE 2 & OVER EX. CULVERT
6.791			50	EX. CULVERT
8.265	8.425	844.80		EB ON ROUTE 2
9.210	9.700	5174.40		EB & WB ON ROUTE 2 & OVER EX. BRIDGE
9.282	9.329		100	EX. BRIDGE A 1391- SOUTH GRAND RIVER
10.000	10.195	1029.60		WB ON ROUTE 2
10.142	10.195	279.84		EB ON ROUTE 2
10.370	10.410	422.40		EB & WB ON ROUTE 2 & OVER EX. CULVERT
10.366	10.400		100	EX. DOUBLE BOX CULVERT-ADAMS BRANCH
10.970	11.080	1161.60		EB & WB ON ROUTE 2 & OVER EX. CULVERT
10.988			50	EX. CULVERT
11.165	11.225	633.60		EB & WB ON ROUTE 2 & OVER EX. CULVERT
11.207			50	EX. CULVERT
11.225	11.300	396.00		EB ON ROUTE 2
11.500	11.525	264.00		EB & WB ON ROUTE 2 & OVER EX. CULVERT
11.539			50	EX. CULVERT
11.525	11.665	739.20		WB ON ROUTE 2
12.115	12.200	897.60		EB & WB ON ROUTE 2 & OVER EX. CULVERT
12.168			50	EX. CULVERT
12.905	13.475	6019.20		EB & WB ON ROUTE 2 & OVER EX. CULVERTS
13.014			50	EX. CULVERT
13.406			50	EX. CULVERT
13.488			50	EX. CULVERT
13.825	13.88	290.40		EB ON ROUTE 2
14.185	14.225	422.40		EB & WB ON ROUTE 2 & OVER EX. CULVERT
14.215			50	EX. CULVERT
14.315	14.535	2323.20		EB & WB ON ROUTE 2 & OVER EX. CULVERT & BRIDGE
14.346			50	E. BOX CULVERT
14.518	14.555		100	EX. BRIDGE L0327- EAST BRANCH SOUTH GRAND RIVER
14.89	15.000	1161.60		EB & WB ON ROUTE 2 & OVER EX. CULVERT
14.948			50	EX. CULVERT
15.545	15.575	316.80		EB & WB ON ROUTE 2 & OVER EX. CULVERT
15.556			50	EX. DOUBLE BOX CULVERT
TOTAL		39832.32	1400.00	
FINAL TOTAL		39840.00	1400.00	

CLASS C PARTIAL DEPTH REPAIR

BEG. LOG	END LOG	NUMBER OF REPAIRS	LENGTH LF	WIDTH LF	REMOVAL SY	FURNISHING & PLACING (BP-1) BIT. MATL. CL.-C TONS	COMMENTS
				EBL			
0.000	1.215	3.0	6.0	12.0	24.00	3.99	STATE LINE TO D HWY
1.125		1.0	6.0	12.0	8.00	1.33	D HWY.
	2.253	1.0	6.0	48.0	32.00	5.31	D HWY.
2.253		1.0	6.0	20.0	13.33	2.21	D HWY. TO TOUTE O
		6.0	6.0	12.0	48.00	7.97	D HWY. TO TOUTE O
		1.0	6.0	70.0	46.67	7.75	D HWY. TO TOUTE O
		1.0	6.0	40.0	26.67	4.43	D HWY. TO TOUTE O
		1.0	12.0	45.0	60.00	9.97	D HWY. TO TOUTE O
		2.0	8.0	12.0	21.33	3.54	D HWY. TO TOUTE O
		1.0	12.0	150.0	200.00	33.22	D HWY. TO TOUTE O
	7.905	1.0	6.0	42.0	28.00	4.65	D HWY. TO TOUTE O
7.905		1.0	6.0	160.0	106.67	17.72	ROUTE O TO END OF PROJECT
		1.0	6.0	100.0	66.67	11.07	ROUTE O TO END OF PROJECT
		6.0	6.0	12.0	48.00	7.97	ROUTE O TO END OF PROJECT
		1.0	10.0	12.0	13.33	2.21	ROUTE O TO END OF PROJECT
				WBL			
68.424	69.639	3.0	6.0	12.0	24.00	3.99	STATE LINE TO D HWY
69.639		1.0	6.0	22.0	14.67	2.44	D HWY. TO TOUTE O
		9.0	6.0	12.0	72.00	11.96	D HWY. TO TOUTE O
	61.734	2.0	8.0	12.0	21.33	3.54	D HWY. TO TOUTE O
61.734		1.0	6.0	130.0	86.67	14.39	ROUTE O TO END OF PROJECT
		1.0	8.0	275.0	244.44	40.60	ROUTE O TO END OF PROJECT
		1.0	6.0	135.0	90.00	14.95	ROUTE O TO END OF PROJECT
		1.0	6.0	150.0	100.00	16.61	ROUTE O TO END OF PROJECT
		1.0	6.0	50.0	33.33	5.54	ROUTE O TO END OF PROJECT
		1.0	6.0	56.0	37.33	6.20	ROUTE O TO END OF PROJECT
		1.0	8.0	12.0	10.67	1.77	ROUTE O TO END OF PROJECT
	43.274	2.0	6.0	12.0	16.00	2.66	ROUTE O TO END OF PROJECT
TOTAL					1493.11	247.99	
PAY TOTAL					1493.10	248.00	

REMOVAL OF IMPROVEMENTS

ITEM	QUANTITY	UNIT	REMARKS
GUARDRAIL	1993.75	LF	EX. GUARDRAIL
SAW CUT	60.00	LF	RR CROSSINGS
TOTAL	1	LS	

MOBILIZATION

1 LUMPSUM

QUANTITY SHEET
SHEET 3 OF 4

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 7/9/2020

ROUTE	STATE
2	MO
DISTRICT	SHEET NO.
KC	3

COUNTY CASS

JOB NO. J4P3248

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

EFFECTIVE: 01-23-2018

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
WARNING SIGNS								
W01-1L	48X48	16.00						TURN (SYMBOL LEFT ARROW)
W01-1R	48X48	16.00						TURN (SYMBOL RIGHT ARROW)
W01-2L	48X48	16.00						CURVE (SYMBOL LEFT ARROW)
W01-2R	48X48	16.00						CURVE (SYMBOL RIGHT ARROW)
W01-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT ARROW)
W01-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT ARROW)
W01-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT ARROW)
W01-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT ARROW)
W01-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
W01-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
W01-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
W01-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
W01-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
W01-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
W01-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
W01-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
W01-8	18X24	3.00						CHEVRON (SYMBOL)
W01-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
W03-1	48X48	16.00	7	112.00				STOP AHEAD (SYMBOL)
W03-2	48X48	16.00	7	112.00				YIELD AHEAD (SYMBOL)
W03-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
W03-4	48X48	16.00	7	112.00				BE PREPARED TO STOP
W03-5	48X48	16.00						SPEED LIMIT AHEAD
W04-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
W04-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
W04-1aL	48X48	16.00						MERGE (ARROW SYMBOL)
W04-1aR	48X48	16.00						MERGE (ARROW SYMBOL)
W05-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
W05-3	48X48	16.00						ONE LANE BRIDGE
W05-5	48X48	16.00	7	112.00				NARROW LANES
W06-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
W06-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
W06-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
W07-3a	30X24	5.00	7	35.00				NEXT XX MILES (PLAQUE)
W08-1	48X48	16.00	7	112.00				BUMP
W08-2	48X48	16.00	7	112.00				DIP
W08-3	48X48	16.00						PAVEMENT ENDS
W08-4	48X48	16.00						SOFT SHOULDER
W08-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
W08-6	48X48	16.00						TRUCK CROSSING
W08-6c	48X48	16.00						TRUCK ENTRANCE
W08-7	36X36	9.00						LOOSE GRAVEL
W08-7a	36X36	9.00						FRESH OIL/LOOSE GRAVEL
W08-9	48X48	16.00						LOW SHOULDER
W08-11	48X48	16.00	2	32.00				UNEVEN LANES
W08-12	48X48	16.00	2	32.00				NO CENTER LINE
W08-15	48X48	16.00						GROOVED PAVEMENT
W08-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
W08-17	48X48	16.00	2	32.00				SHOULDER DROP-OFF (SYMBOL)
W08-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62	2	19.24				RAILROAD CROSSING
W012-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
W012-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
W012-2X	24X18	3.00						LOW CLEARANCE (PLAQUE)
W012-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
W012-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
W012-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
W013-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
W016-2	30X24	5.00						XXX FEET (PLAQUE)
W016-3	30X24	5.00	4	20.00				X MILE (PLAQUE)
W020-1	48X48	16.00	4	64.00				ROAD/BRIDGE/RAMP WORK AHEAD
W020-2	48X48	16.00						DETOUR AHEAD
W020-3	48X48	16.00						ROAD CLOSED AHEAD
W020-4	48X48	16.00	4	64.00				ONE LANE ROAD AHEAD
W020-5	48X48	16.00	4	64.00				RIGHT/CENTER/LEFT LANE CLOSED AHEAD
W020-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
W020-6a	48X48	16.00	4	64.00				RIGHT/CENTER/LEFT LANE CLOSED
W020-7a	48X48	16.00	4	64.00				FLAGGER (SYMBOL) WITH FLAGS
W021-2	36X36	9.00						FRESH OIL
W021-5a	48X48	16.00						RIGHT/ LEFT SHOULDER CLOSED
W022-5b	48X48	16.00						SHOULDER WORK AHEAD
W022-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
W022-3	42X36	10.50						END BLASTING ZONE
G022-1	21X15	2.19	2	4.38				WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
G020-1	60X24	10.00	7	70.00				ROAD WORK NEXT XX MILES
G020-2	48X24	8.00	7	56.00				END ROAD WORK
G020-4	36X18	4.50	2	9.00				PILOT CAR FOLLOW ME
G020-4a	42X30	8.75	7	61.25				PLEASE WAIT FOR PILOT CAR
G020-5aP	36X24	6.00	7	42.00				WORK ZONE (PLAQUE)
M04-8a	24X18	3.00						END DETOUR
M04-9L	48X36	12.00						DETOUR (LEFT ARROW)
M04-9R	48X36	12.00						DETOUR (RIGHT ARROW)
M04-9P	48X12	4.00						STREET NAME (PLAQUE)
M04-10L	48X18	6.00						DETOUR (ARROW LEFT)
M04-10R	48X18	6.00						DETOUR (ARROW RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TRI.	6.93						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R1-3P	30X12	2.50						ALL WAY (PLAQUE)
R2-1	36X48	12.00	7	84.00				SPEED LIMIT XX
R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-7aL	36X48	12.00	2	24.00				KEEP LEFT (HORIZONTAL ARROW)
R4-7a	36X48	12.00	2	24.00				KEEP RIGHT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-10	24X18	3.00						SIDEWALK CLOSED AHEAD, USE OTHER SIDE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45° ARROW)
R11-2	48X30	10.00						ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50						ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00						FINE SIGN
CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)
MISCELLANEOUS SIGNS								
CONST-5	48X36	12.00						POINT OF PRESENCE
CONST-4	96X48	32.00	2	64.00				POINT OF PRESENCE
CONST-7	48X24	8.00						RATE OUR WORK ZONE
CONST-7	72X36	18.00	2	36.00				RATE OUR WORK ZONE
CONST-8	48X36	12.00	2	24.00				WORK ZONE NO PHONE ZONE

616-10.05 CONSTRUCTION SIGNS	TOTAL	1661
616-10.10 RELOCATED SIGNS	TOTAL	

ITEM NUMBER	TOTAL EA/LF	DESCRIPTION
6122008		IMPACT ATTENUATOR (8 SAND BARRELS)
6122009		IMPACT ATTENUATOR (9 SAND BARRELS)
6122010		IMPACT ATTENUATOR (10 SAND BARRELS)
6122012		IMPACT ATTENUATOR (12 SAND BARRELS)
6122014		IMPACT ATTENUATOR (14 SAND BARRELS)
6122017		IMPACT ATTENUATOR (17 SAND BARRELS)
6122019		IMPACT ATTENUATOR (19 SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6123000A	2	TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)
6161007		SPEED LIMIT AND STROBE LIGHT ASSEMBLY
6161008	2	ADVANCED WARNING RAIL SYSTEM
6161009	8	FLAG ASSEMBLY
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161024		CHANNELIZER (TRIM LINE) WITH LIGHT
6161025	150	CHANNELIZER (TRIM LINE)
6161030		TYPE III MOVEABLE BARRICADE
6161031		TYPE III MOVEABLE BARRICADE WITH LIGHT
6161033		DIRECTION INDICATOR BARRICADE
6161034		DIRECTION INDICATOR BARRICADE, WITH LIGHT
6161040	2	FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161052		WARNING LIGHT, TYPE B
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	4	CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162003		LONG-TERM RUMBLE STRIPS
6162004		SHORT-TERM RUMBLE STRIPS
6169902		ADA COMPLIANT MOVEABLE BARRICADE
6173600D		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

QUANTITY SHEET
4 OF 4

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 8/28/2020

ROUTE	STATE
2	MO
DISTRICT	SHEET NO.
KC	3

COUNTY: CASS

JOB NO. J4P3248

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

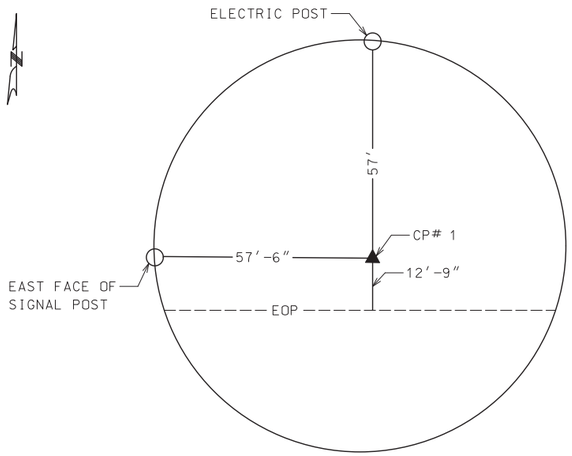
DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REFERENCE TIES



CP# 1
5/8" IRON BAR FLUSH WITH GROUND

NORTH:894575.332
EAST: 2759934.694
ELEV: 985.62

ROUTE 2
STATION: 31+87.28, 23.60 LT

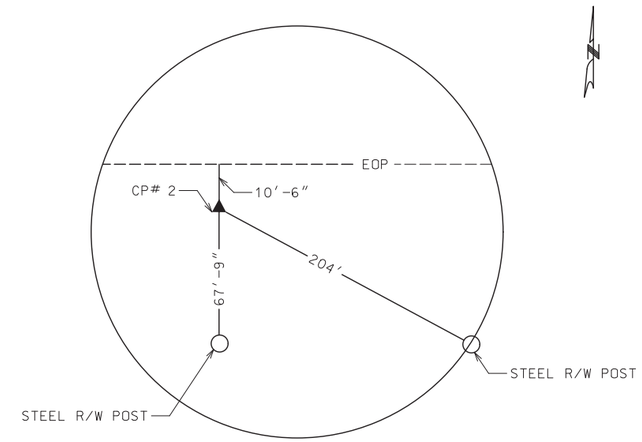
PROJECTION FACTOR: 1.00009921
GRID FACTOR: 0.9999008

CP# 2
5/8" IRON BAR FLUSH WITH GROUND

NORTH:894550.644
EAST: 2759520.310
ELEV: 981.71

STATION: 27+74.76, 22.70 RT

PROJECTION FACTOR: 1.00009921
GRID FACTOR: 0.9999008



COORDINATE POINT LISTING - MISSOURI COORDINATE SYSTEM OF 1983

SHEET NO	STATION	LOCATION	✳ OFFSET (FEET)	MODIFIED STATE PLANE (GROUND) NORTHING (FEET)	EASTING (FEET)	ELEVATION	STATE PLANE ZONE	DESCRIPTION	GPK POINT ID	VERTICAL	GEOID MODEL
REFERENCE TIES											
6	31+87.28	ROUTE 2, C/L	23.60 LT	894,575.332	2,759,934.694	985.62	WESTERN	5/8" IRON BAR FLUSH WITH GROUND	CP 1	NAD88	2012
6	27+74.76	ROUTE 2, C/L	22.70 RT	894,550.644	2,759,520.310	981.71	WESTERN	5/8" IRON BAR FLUSH WITH GROUND	CP 2	NAD88	2012
COORDINATE POINTS											
6	24+00.00	ROUTE 2, C/L	0.74 RT	894592.861	2759133.792	978.86	WESTERN	POT/ BEGIN CHAIN ROUTE 2 (RR X-ING)	105/ 501	NAD88	2012
6	24+00.00	ROUTE 2, C/L	75.00 LT	894667.792	2759151.170	984.46	WESTERN		104/ 503	NAD88	2012
6	24+00.00	ROUTE 2, C/L	90.00 RT	894503.018	2759142.549	990.45	WESTERN		106/ 507	NAD88	2012
6	26+00.36	ROUTE 2, C/L	90.00 LT	894672.323	2759351.680	990.20	WESTERN	EQUATION STA. BK, POT1	103/ 505	NAD88	2012
6	26+00.00	ROUTE 2, C/L	90.00 LT	894672.323	2759351.680	990.20	WESTERN	EQUATION STA. AH, POT1	103/ 505	NAD88	2012
6	27+74.37	ROUTE 2, C/L	90.00 RT	894483.459	2759516.408	999.32	WESTERN		107	NAD88	2012
6	29+00.17	ROUTE 2, C/L	80.00 LT	894646.663	2759650.748	995.44	WESTERN	EQUATION STA. BK, POT1	102/ 504	NAD88	2012
6	29+00.00	ROUTE 2, C/L	80.00 LT	894646.663	2759650.748	995.44	WESTERN	EQUATION STA. AH, POT1	102/ 504	NAD88	2012
6	29+67.41	ROUTE 2, C/L	91.23 RT	894472.146	2759709.121	992.77	WESTERN		108	NAD88	2012
6	30+08.81	ROUTE 2, C/L	118.82 RT	894442.430	2759749.023	986.34	WESTERN		109	NAD88	2012
6	30+71.64	ROUTE 2, C/L	80.39 LT	894638.089	2759822.172	990.17	WESTERN		101	NAD88	2012
6	30+87.04	ROUTE 2, C/L	90.00 RT	894467.124	2759828.056	989.38	WESTERN		110	NAD88	2012
6	31+54.99	ROUTE 2, C/L	105.03 LT	894658.329	2759906.695	985.37	WESTERN		115	NAD88	2012
6	31+98.70	ROUTE 2, C/L	80.00 LT	894631.058	2759949.047	985.09	WESTERN		114	NAD88	2012
6	36+00.00	ROUTE 2, C/L	80.01 LT	894610.093	2760349.792	974.57	WESTERN	POT	113/ 506	NAD88	2012
6	36+98.96	ROUTE 2, C/L	0.27 LT	894525.289	2760444.455	991.25	WESTERN		112	NAD88	2012
6	37+00.00	ROUTE 2, C/L	89.98 RT	894435.100	2760440.774	979.22	WESTERN		111	NAD88	2012
6	39+99.97	ROUTE 2, C/L	0.00	894509.284	2760745.046		WESTERN	POT / END CHAIN ROUTE 2 (RR X-ING)	502	NAD88	2012

✳ GROUND DISTANCE

ROUTE 2 (RR CROSSING)
REFERENCE TIES AND
COORDINATE POINT
SHEET 1 OF 1

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER
PE-2002003198
PROFESSIONAL ENGINEER

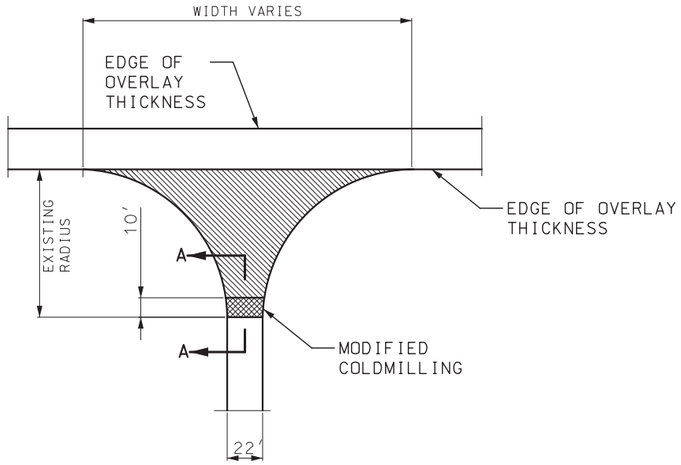
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

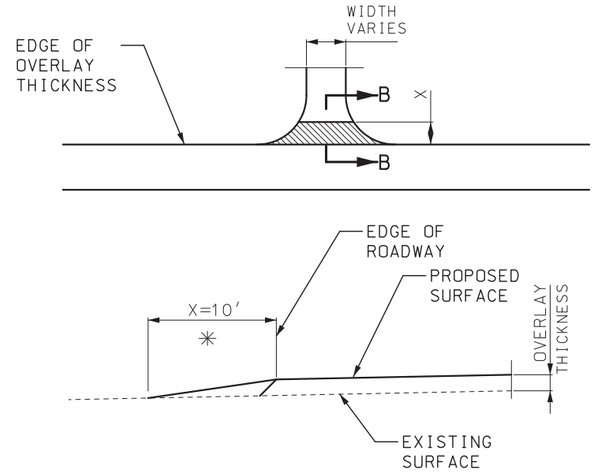
DATE PREPARED	
7/9/2020	
ROUTE 2	STATE MO
DISTRICT KC	SHEET NO. 4
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

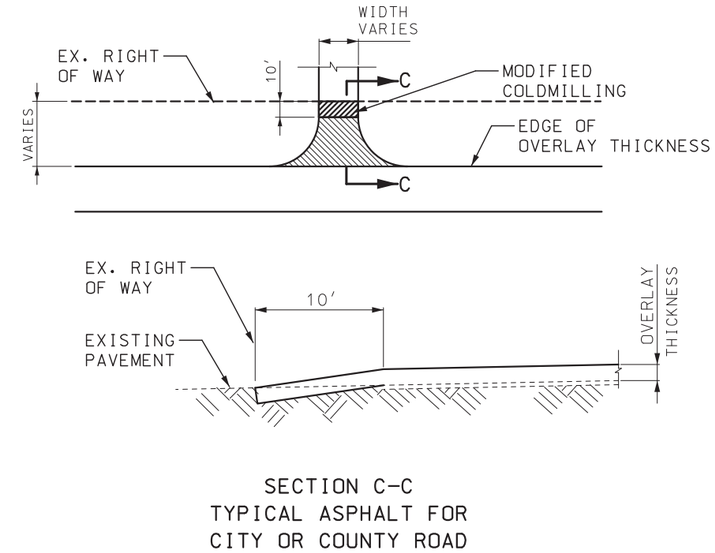
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

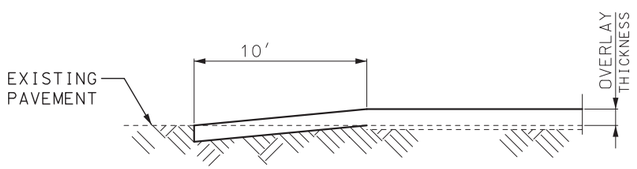




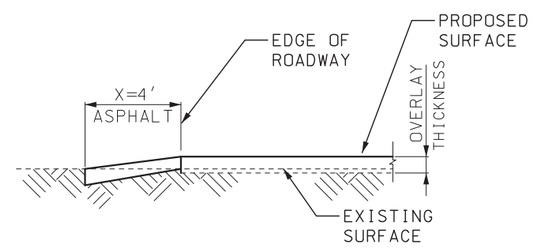
SECTION B-B
TYPICAL GRAVEL ENTRANCE
(FIELD, PRIVATE OR COUNTY ROAD)
✳ TAPER AT 1:1 FOR FIELD ENTRANCE



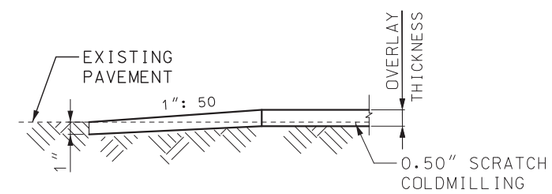
SECTION C-C
TYPICAL ASPHALT FOR
CITY OR COUNTY ROAD



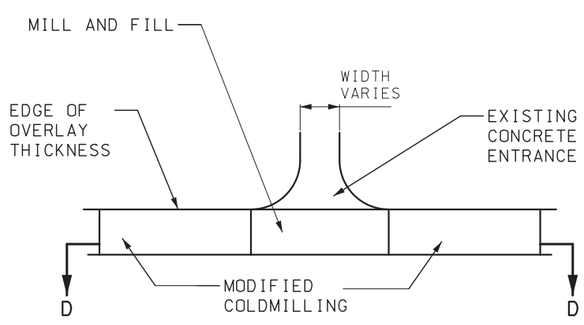
SECTION A-A
TYPICAL STATE ROUTE JUNCTION
(COLDMILLED TRANSITION)

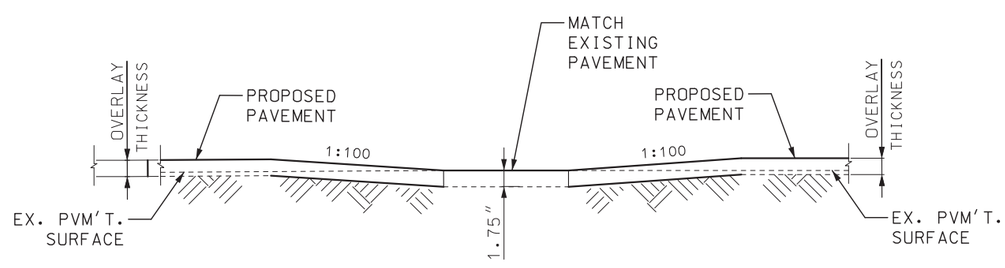


SECTION B-B
TYPICAL ASPHALT ENTRANCE



TRAVELWAY DEPTH TRANSITIONS
BEGINNING AND END OF PROJECT
AND EXCEPTIONS





SECTION D-D
TYPICAL CONCRETE ENTRANCE

NOT TO SCALE

SPECIAL SHEET
1 OF 5

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

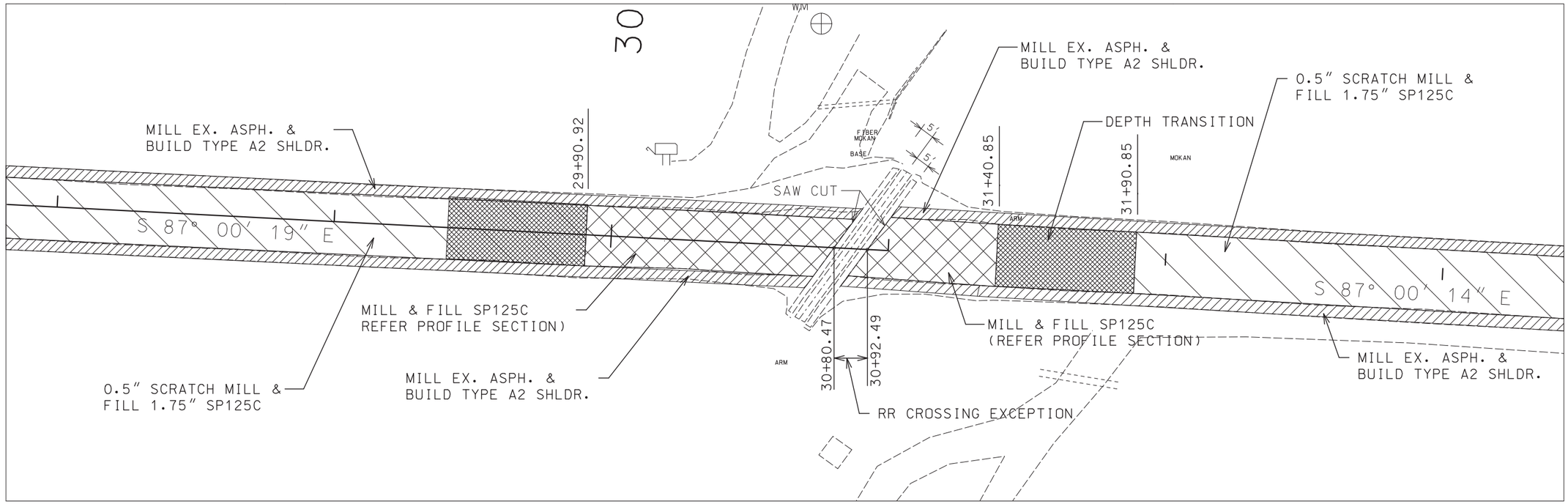
DATE PREPARED	
7/9/2020	
ROUTE 2	STATE MO
DISTRICT KC	SHEET NO. 5
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

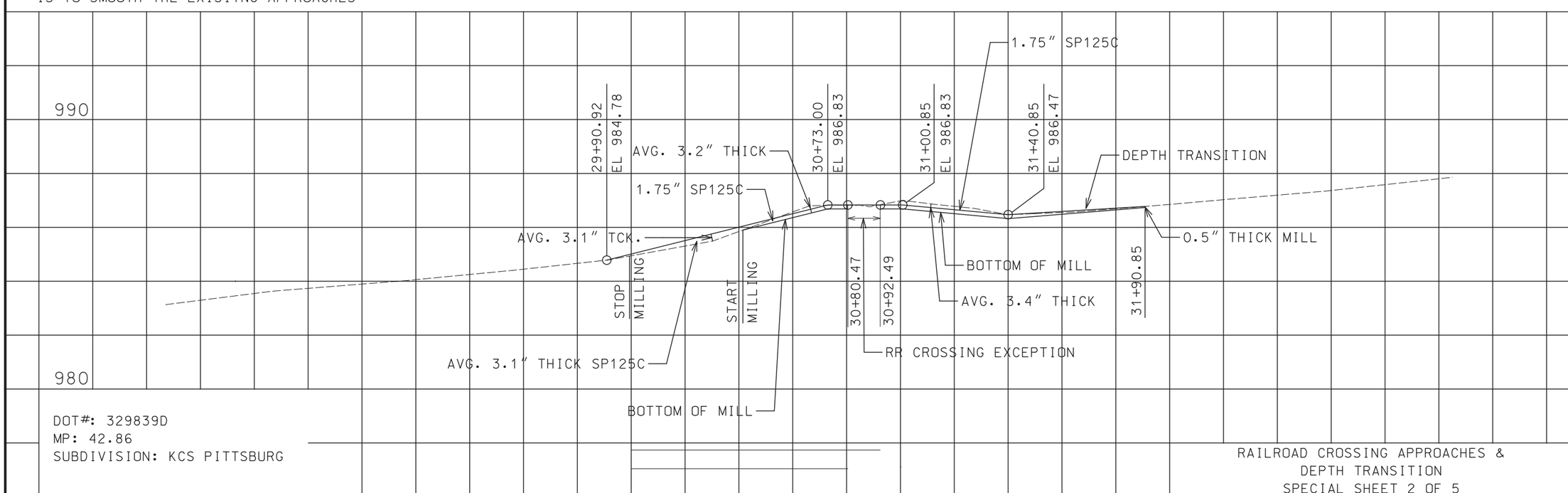
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.



NOTE:
THE INTENT AT THE RAILROAD CROSSING
IS TO SMOOTH THE EXISITNG APPROACHES



DOT#: 329839D
MP: 42.86
SUBDIVISION: KCS PITTSBURG

RAILROAD CROSSING APPROACHES &
DEPTH TRANSITION
SPECIAL SHEET 2 OF 5

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

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DATE PREPARED	
7/9/2020	
ROUTE 2	STATE MO
DISTRICT KC	SHEET NO. 6
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

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

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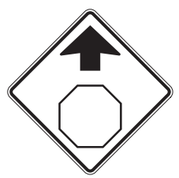
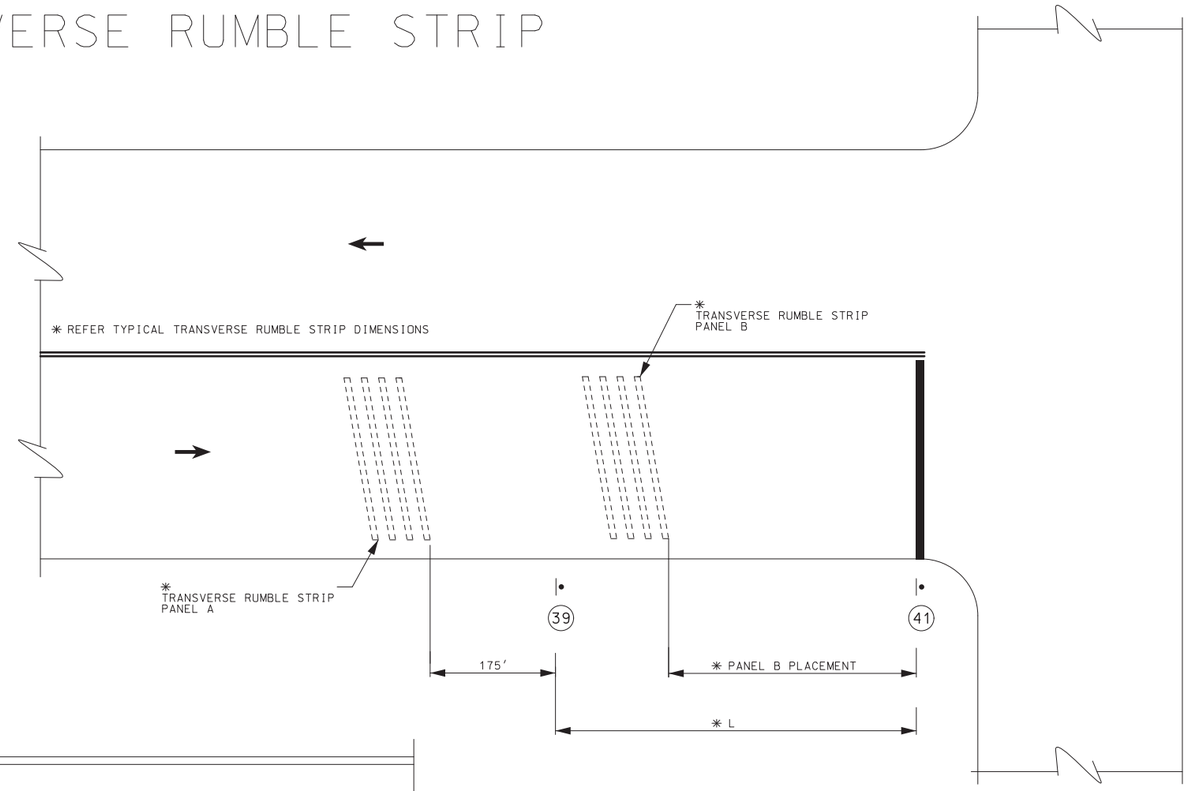
TRANSVERSE RUMBLE STRIP

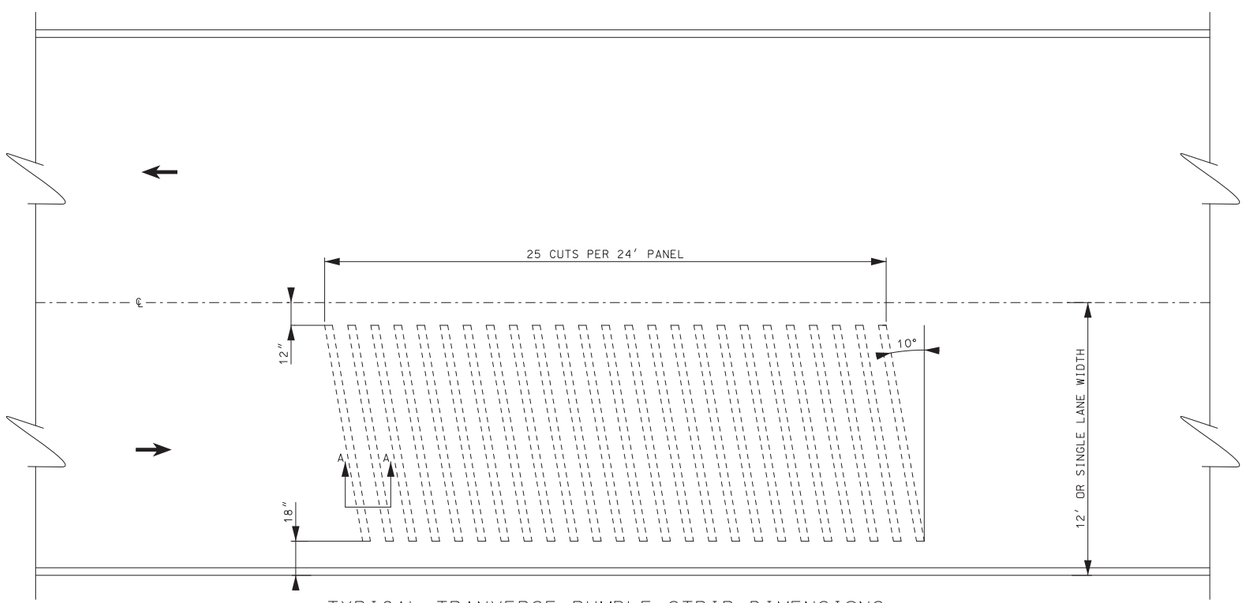
TABLE		
POSTED OR 85TH PERCENTILE SPEED MPH	L FT	TRANSVERSE RUMBLE STRIP PANEL B FT
0-45	175	NA
50	250	250
55	325	300
* 60	* 400	* 350
65	475	425

R1-1
41

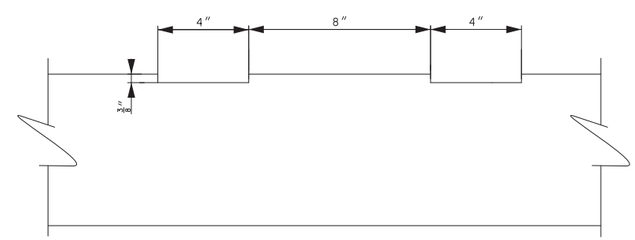


W03-1
39





TYPICAL TRANVERSE RUMBLE STRIP DIMENSIONS



SECTION A-A
TRANSVERSE RUMBLE STRIP
CUT IN NEW
PCCP OR HMA PAVEMENT

NOT TO SCALE

SPECIAL SHEET
SHEET 3 OF 5

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

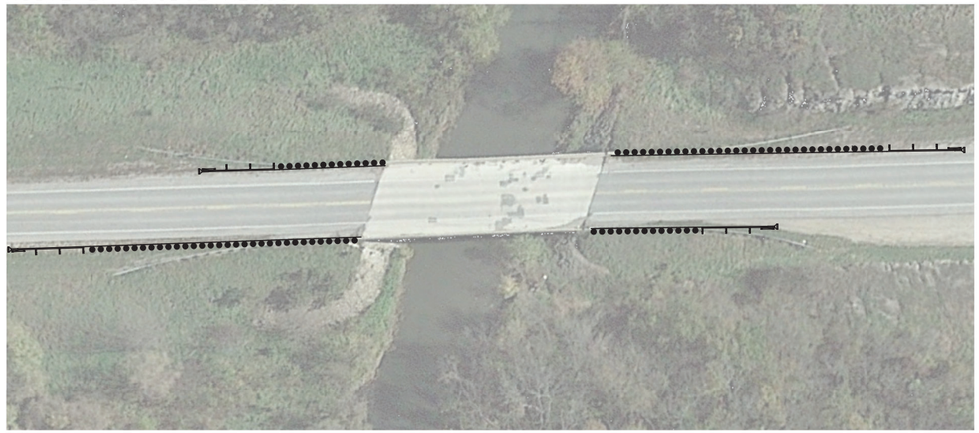
DATE PREPARED 7/9/2020	
ROUTE 2	STATE MO
DISTRICT KC	SHEET NO. 7
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

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

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

ROUTE 2/ BRIDGE A2539

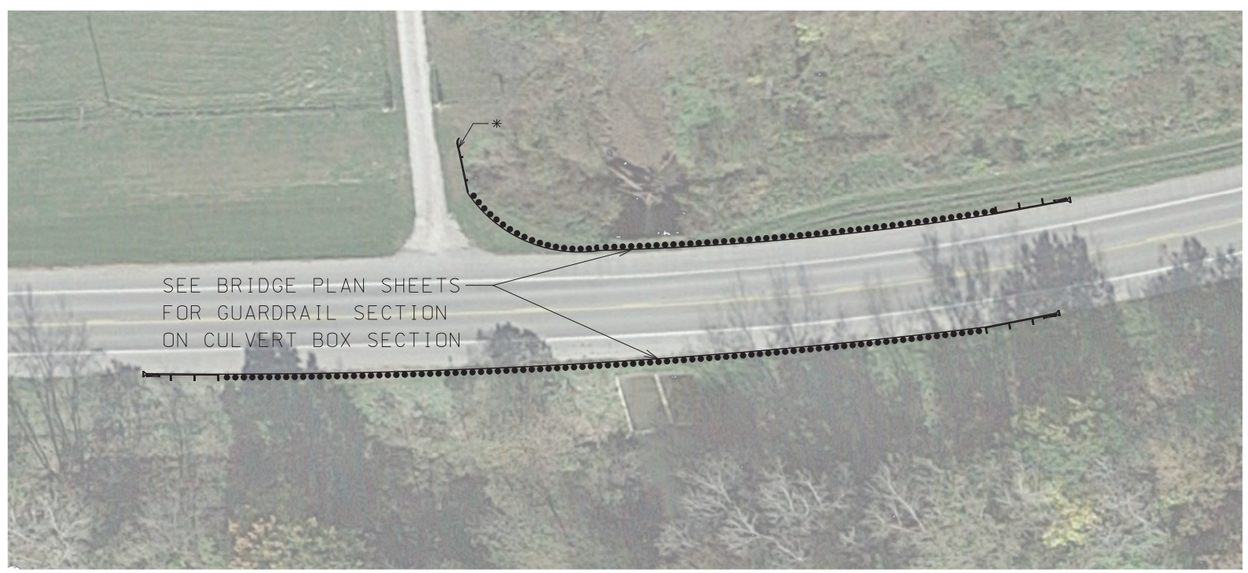


REMOVE AND BUILD
4 BRIDGE APPROACH TRANSITION SECTIONS (REGULAR/ NO CURB),
WITH 50'(ADJACENT LANES) & 37.5' (OPPOSING LANES)MGS GUARDRAIL, AND
4 TYPE A CRASHWORTHY END TERMINALS (MASH)

ROUTE 2/ BRIDGE A1391

REMOVE AND BUILD
4 MGS BRIDGE APPROACH TRANSITION SECTIONS (REGULAR/ NO CURB)
WITH 125'(ADJACENT LANES)& 87.5' (OPPOSING LANES)MGS GUARDRAIL, AND
4 TYPE A CRASHWORTHY END TERMINALS (MASH)

ROUTE 2/ CULVERT A2807



BUILD 2 THRIE BEAMS WITH 125' (ADJACENT LANES), 100' (OPPOSING LANE ON EB)
AND 62.5'GUARDRAIL(OPPOSIGN LANE * WB),
1 END ANCHOR (* NW QUADRANT-WB)
AND 3 TYPE A CRASHWORTHY END TERMINALS (MASH)

NOT TO SCALE

SPECIAL SHEET
GUARDRAIL
SHEET 4 OF 5

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	7/9/2020
ROUTE	2
STATE	MO
DISTRICT	KC
SHEET NO.	8
COUNTY	CASS
JOB NO.	J4P3248
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

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

ROUTE 2/ GUARDRAIL BETWEEN 269TH AND MORRISTOWN RD (WB)

✳✳✳
REMOVE AND BUILD
WITH 250′ MGS GUARDRAIL AND
2 TYPE A CRASHWORTHY END TERMINAL (MASH)

ROUTE 2/ GUARDRAIL 0.10 MILE EAST OF LEWIS RD (WB)

(✳) REMOVE AND BUILD
WITH 250′ MGS GUARDRAIL AND
1 TYPE A CRASHWORTHY END TERMINALS (MASH),
(✳✳)AND BUILD WITH 150′ MGS GUARDRAIL AND
1 TYPE A CRASHWORTHY END TERMINAL (MASH)

ROUTE 2/ BRIDGE L0327

REMOVE AND BUILD
3 MGS BRIDGE APPROACH TRANSITION SECTIONS (REGULAR/ NO CURB) AND 1 TRANSITON SECTION (WB-ADJACENT LANE),
WITH 112.5′(ADJACENT LANE-EB)MGS GUARDRAIL, 112.5′(ADJACENT LANE-✳ WB) GUARDRAIL,
AND 75′ (OPPOSING LANE-WB) MGS GUARDRAIL
1 END ANCHOR (✳ NE QUADRANT-WB)
AND 3 TYPE A CRASHWORTHY END TERMINALS (MASH)

NOT TO SCALE

SPECIAL SHEET
GUARDRAIL
SHEET 5 OF 5

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER
PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 7/9/2020	
ROUTE 2	STATE MO
DISTRICT KC	SHEET NO. 9
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

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

Traffic Control Legend, Sign Spacing, Device Spacing, Channelizing Taper Lengths And Recommended Maximum Speed Reductions

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

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

TAPER LENGTHS AND SPACING FOR CHANNELIZERS							
PERMANENT POSTED SPEED MPH	MINIMUM LANE TAPER LENGTH (L) (3)			MINIMUM SHOULDER TAPER LENGTH (T1) BASED ON 10′ SHOULDER	BUFFER LENGTH FT	MAXIMUM CHANNELIZER SPACING	
	10′	11′	12′			THROUGH TAPER	THROUGH WORK AREA
0-35	205′	225′	245′	70′	280′	35′	40′
40-45	450′	495′	540′	150′	400′	40′	80′
50-55	550′	605′	660′	185′	560′	50′	80′
60-70	700′	770′	840′	235′	840′	60′	120′

** THE SA DIMENSION IS THE DISTANCE FROM THE TRANSITION OR POINT OF RESTRICTION TO THE FIRST SIGN.

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

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

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

DETAILS NOTES:

(1) SPACING BETWEEN SIGNS AND SPACING BETWEEN LAST SIGN AND FLAGGER, BEGINNING OF TAPER, OF SIGNED CONDITION.

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

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

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

TAPER LENGTH (L)

L = W X P FOR 40 MPH OR MORE

$L = \frac{WP^2}{60}$ FOR 35 MPH OR LESS

L = TAPER LENGTH IN FEET

W = LATERAL SHIFT IN FEET

P = POSTED SPEED PRIOR TO ROAD WORK IN MPH

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- FLAGGER
- CHANNELIZER
- PROTECTIVE VEHICLE WITH WORK SIGN, FLASHING ARROW PANEL AND REAR-MOUNTED IMPACT ATTENUATOR UNIT.
- FLASHING ARROW PANEL
- CHANGEABLE MESSAGE BOARD
- BARRICADE

LEGEND NOTE:

THE PROTECTIVE VEHICLE SIGN SHALL BE MOUNTED AT A RECOMMENDED HEIGHT OF 48 IN. ABOVE THE ROAD SURFACE.

GENERAL NOTES:

1. SEE STANDARD PLAN 616.10 FOR DETAILS AND ITEMS NOT SHOWN.
2. EXISTING SIGNS SHALL BE COVERED DURING WORKING HOURS ONLY IF IN CONFLICT WITH TRAFFIC CONTROL PLANS.
3. NO DIRECT PAYMENT WILL BE MADE FOR RELOCATING, COVERING, UNCOVERING OR REMOVING SIGNS.
4. CONES ALLOWABLE FOR DAYTIME OPERATIONS ON MINOR ROUTES ONLY.
5. LOCATE FLASHING ARROW PANEL AT BEGINNING OF TAPER WHEN FEASIBLE, ARROW PANELS ARE ALWAYS LOCATED BEHIND CHANNELIZERS OR CONES.

EPG TABLE 616.12 RECOMMENDED MAXIMUM SPEED REDUCTIONS	
ACTIVITY (I.E. WORKERS, EQUIPMENT OR MATERIAL) LOCATION	RECOMMENDED WORK ZONE SPEED REDUCTION (WHEN APPLICABLE)
10 FT. BEYOND EDGE OF TRAVELWAY TO EDGE OF RIGHT OF WAY	NO SPEED REDUCTION
IN TRAFFIC LANE OR WITHIN 10FT. OF THE TRAFFIC LANE	10 MPH
HEAD-TO-HEAD ON MULTILANE	10 MPH
SPECIAL CIRCUMSTANCES WITHIN A TEMPORARY TRAFFIC CONTROL WORK ZONE MAY WARRANT A LOWER SPEED LIMIT THAN RECOMMENDED ABOVE. ALL SPEED LIMIT REDUCTIONS GREATER THAN 10 MPH SHALL BE DOCUMENTED, SUBMITTED TO AND APPROVED BY THE DISTRICT WORK ZONE COORDINATOR.	

TEMPORARY TRAFFIC CONTROL
SHEET 1 OF 10

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

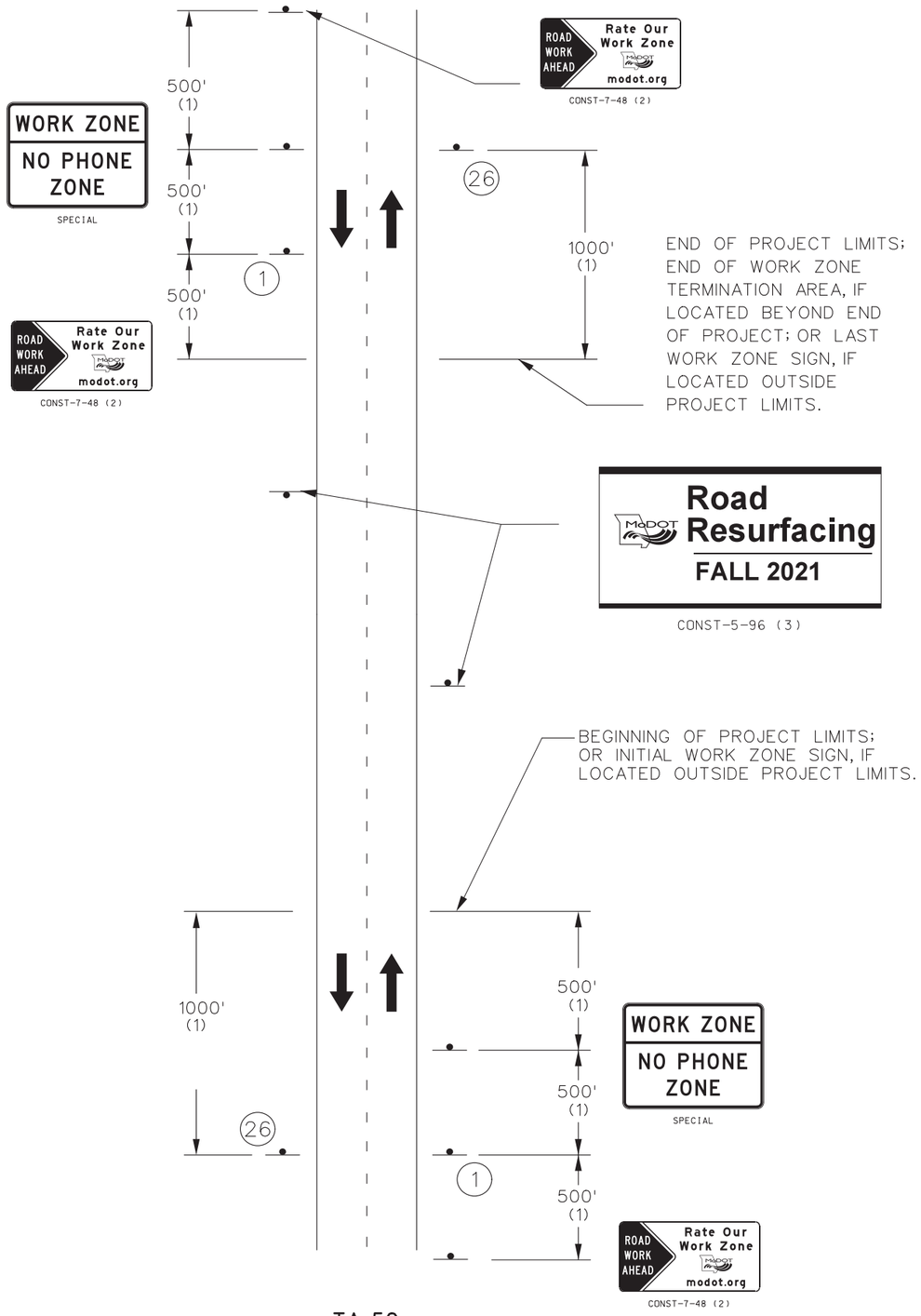
DATE PREPARED	
7/9/2020	
ROUTE 2	STATE MO
DISTRICT KC	SHEET NO. 10
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

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

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.



TA-50
TWO-LANE UNDIVIDED

NOTES:

SIGN G020-1 IS REQUIRED PER EPG 616.6.56.

SIGN G020-2 IS USED ON ALL PROJECTS WHERE SIGN G020-1 IS USED.

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

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

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

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

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

(4) THE "RATE OUR WORK ZONE" SIGN IS AVAILABLE IN TWO SIZES DEPENDING ON ROADWAY CONDITIONS. THE 48 IN. X 24 IN. SIGN IS USED ON LOW VOLUME ROUTES THAT CARRY 400 AADT OR LESS,ON PROJECTS THAT HAVE A DURATION OF 4 WEEKS OR LESS OR IN URBAN AREAS WHERE THERE IS INSUFFICIENT RIGHT OF WAY FOR A SIX FOOT WIDE SIGN. THE 72 IN. X 36 IN. VERSION OF THE SIGN IS USED IN ALL OTHER APPLICATIONS. BUT CAN ALSO BE USED IN PLACE OF THE 48 IN. X 24 IN. SIGN IF ADDED EMPHASIS IS DEEMED NECESSARY.

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

WORK ZONE
NO PHONE ZONE
SPECIAL

WHEN THE "ROAD WORK NEXT XX MILES" IS NOT USED THE "NO PHONE ZONE" SIGN IS TO BE PLACED A MINIMUM OF 500'BEFORE THE "ROAD WORK AHEAD" SIGN. REFER TO EPG 616.6.51.3 WORK ZONE NO PHONE ZONE SIGN

ROAD WORK
NEXT XX MILES
G020-1
1

END
ROAD WORK
G020-2
26

BEGIN/END
TEMPORARY
TRAFFIC CONTROL
SHEET 2 OF 10

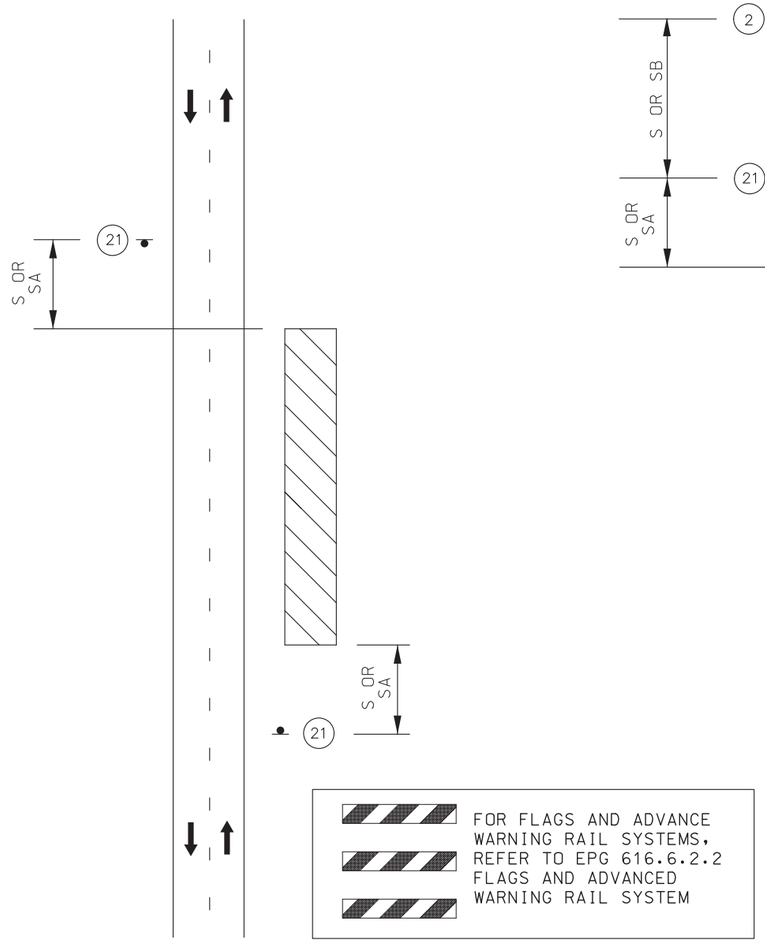
STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
7/9/2020	
ROUTE 2	STATE MO
DISTRICT KC	SHEET NO. 11
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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



WORK BEYOND SHOULDER

NOTES:

ONLY APPLICABLE WHEN WORK IS WITHIN THE CLEAR ZONE.

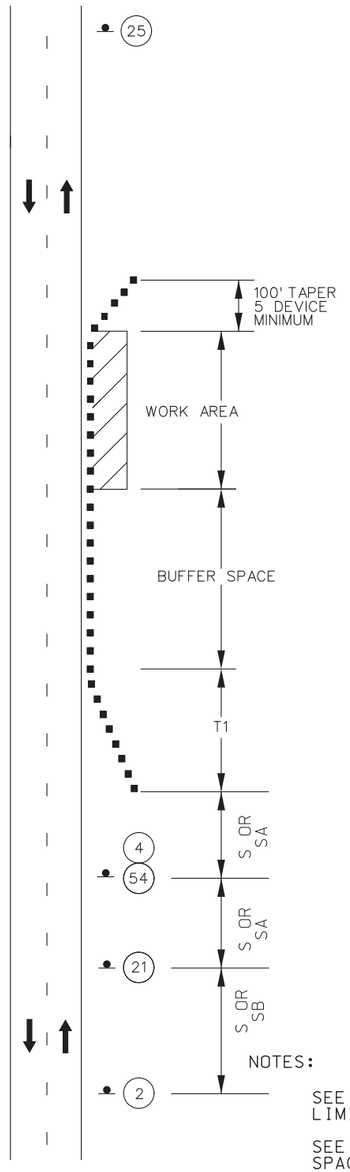
SEE TRAFFIC CONTROL SHEET 1 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

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

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

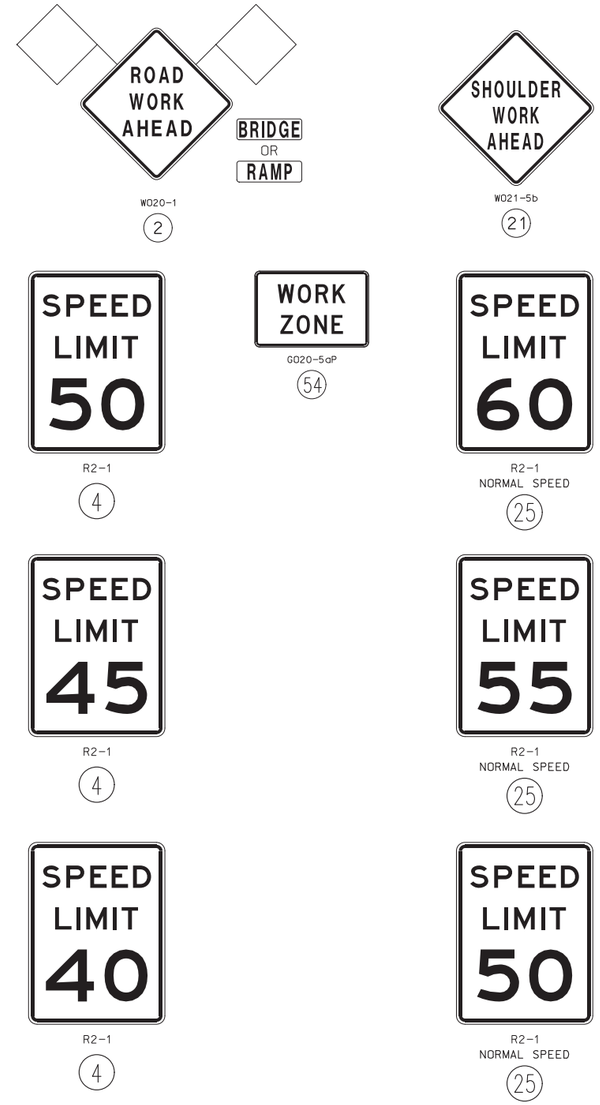
VEHICLE HAZARD WARNING SIGNALS SHALL NOT BE USED INSTEAD OF THE VEHICLE'S HIGH -INTENSITY ROTATING FLASHING, FLASHING, OSCILLATING, OR STROBE LIGHTS.

TA-01



SHOULDER WORK WITH NO TRAVELWAY ENCROACHMENT

TA-03



NOTES:

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

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

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

PROVIDE SIGNS ON LEFT AND RIGHT SIDE OF DIVIDED HIGHWAYS.

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

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

SHOULDER WORK
TEMPORARY
TRAFFIC CONTROL
SHEET 3 OF 10

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	7/9/2020
ROUTE	2
STATE	MO
DISTRICT	KC
SHEET NO.	12
COUNTY	CASS
JOB NO.	J4P3248
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

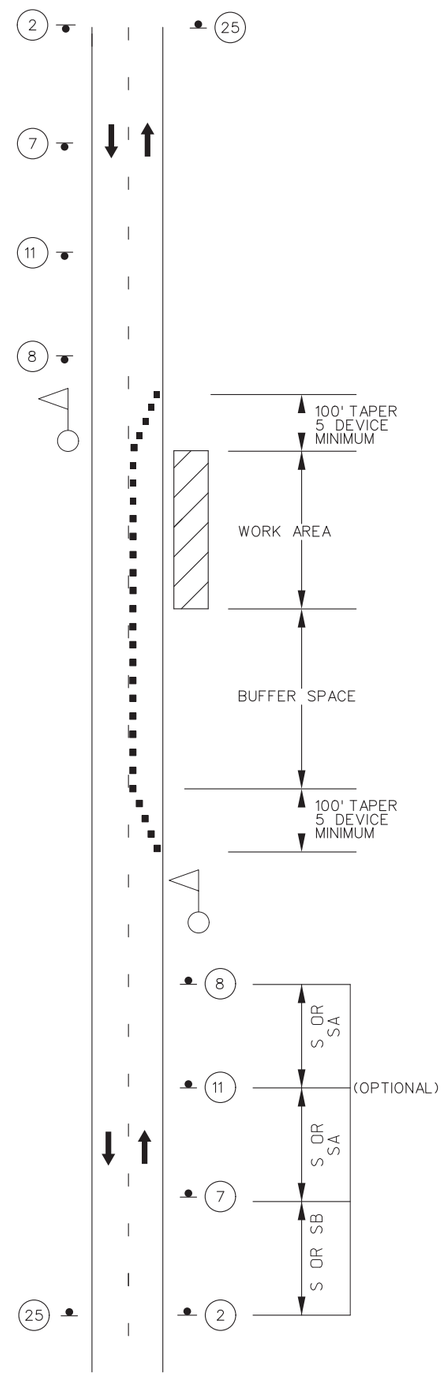
DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

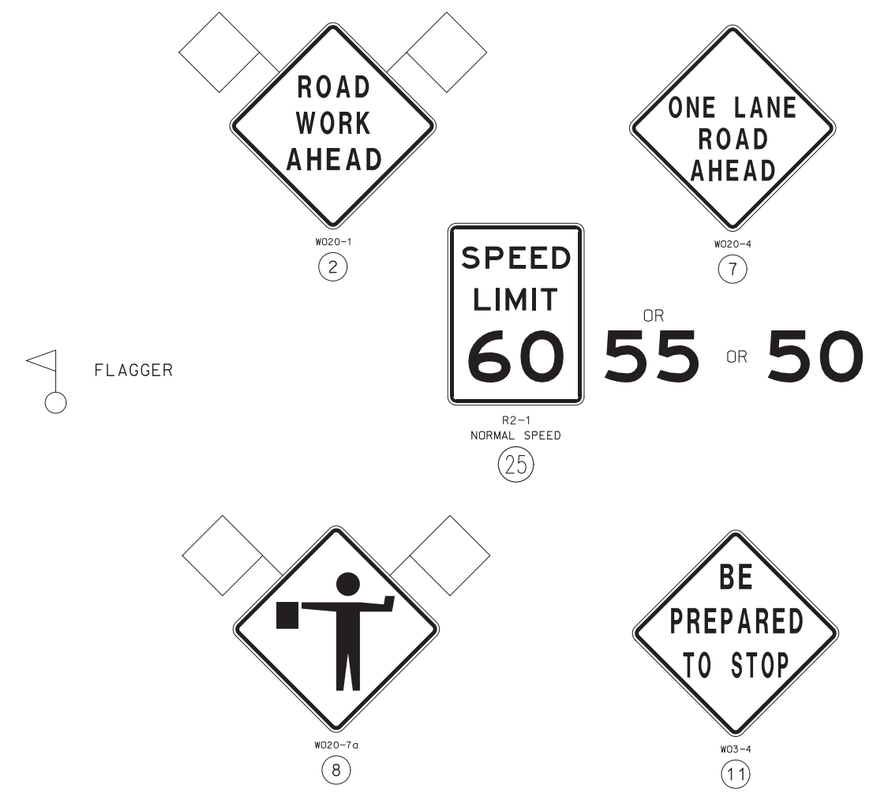
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.



SHOULDER WORK OR LANE WIDENING
WHEN LANE CLOSURE IS REQUIRED



FOR FLAGS AND ADVANCE WARNING RAIL SYSTEMS, REFER TO EPG 616.6.2.2 FLAGS AND ADVANCED WARNING RAIL SYSTEM

NOTES:

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

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

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

(4). SIGN W03-5 (REDUCE SPEED AHEAD) CAN BE USED WHEN TRAFFIC DYNAMICS WARRANTS.

NOTE: PAVEMENT EDGE TREATMENT (WHEN NEEDED) SHALL BE IN PLACE BEFORE LANE IS OPENED TO TRAFFIC

SHOULDER WORK OR
LANE WIDENING
TEMPORARY
TRAFFIC CONTROL
SHEET 4 OF 10

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	7/9/2020
ROUTE	2
STATE	MO
DISTRICT	KC
SHEET NO.	13
COUNTY	CASS
JOB NO.	J4P3248
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

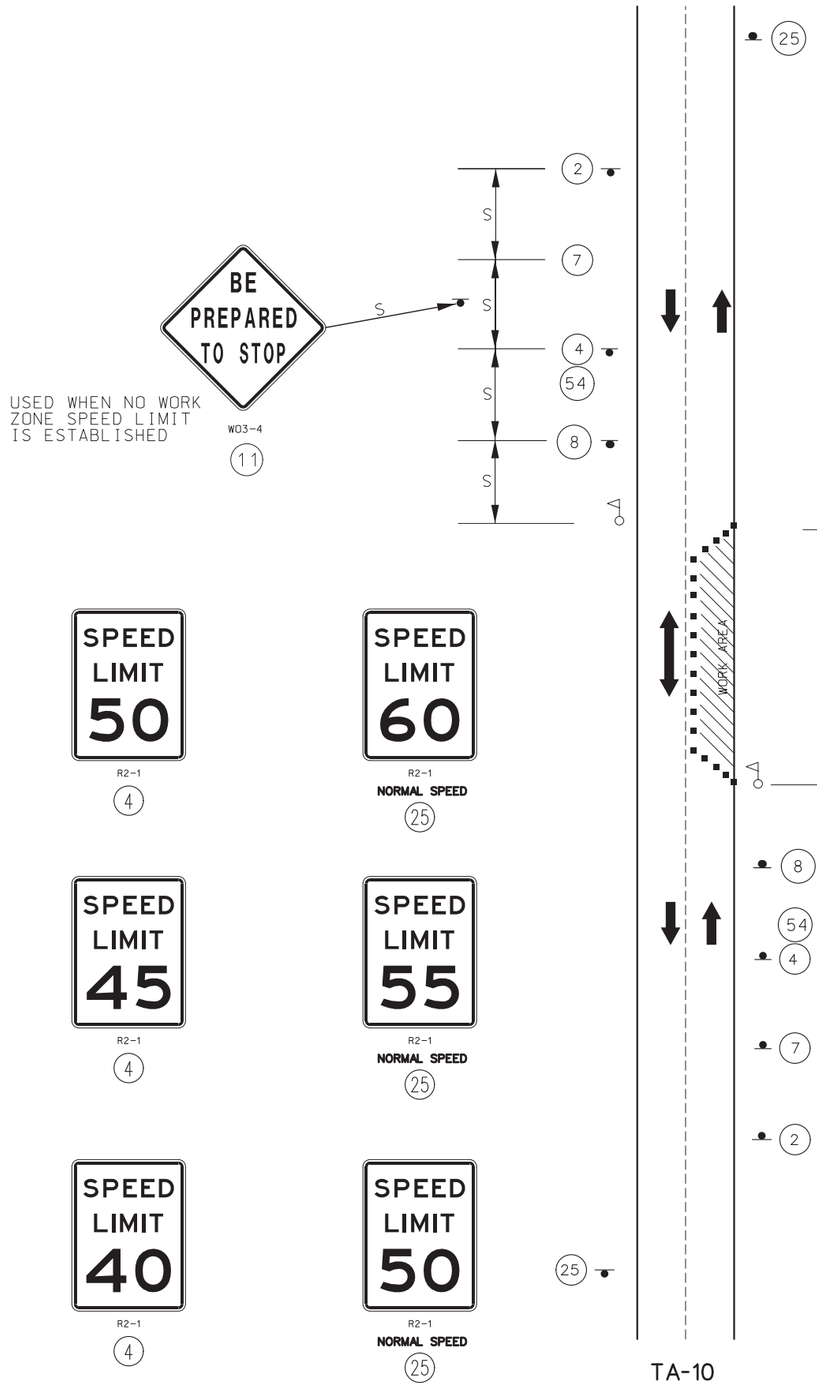
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

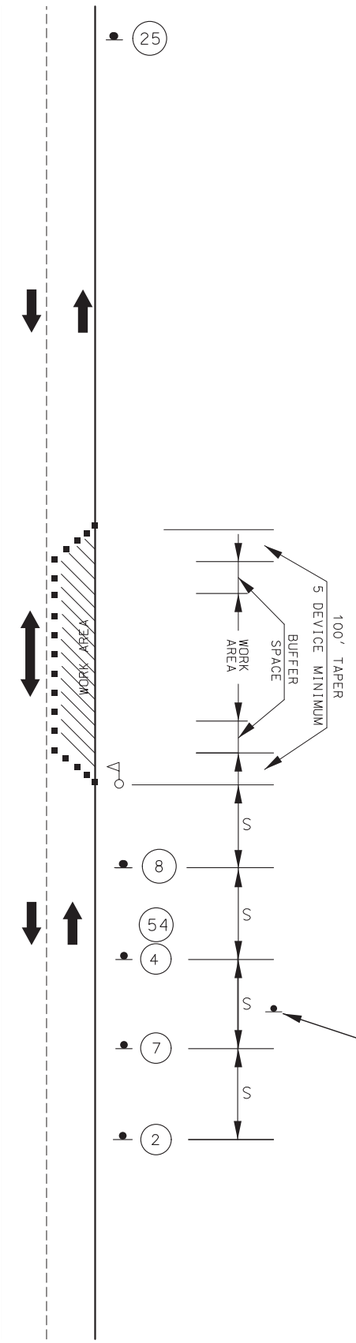
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

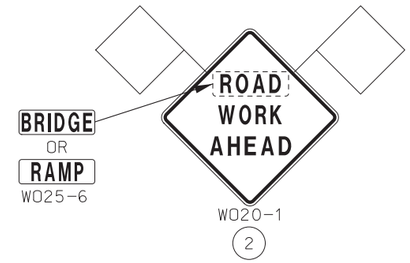
REV.

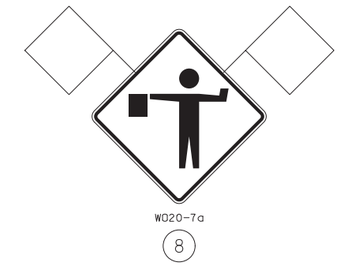
EFFECTIVE: 02-01-2009

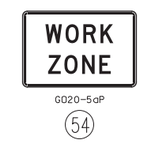


TA-10
LANE CLOSURE
ON TWO-LANE
ROAD USING FLAGGERS









- FLAGGER

CHANNELIZERS

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

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

AUTOMATED FLAGGER ASSISTANCE DEVICES (AFAD) AND PORTABLE SIGNAL FLAGGING DEVICES (PSFD) MAY BE USED AS AND ALTERNATIVE FLAGGING OPERATION.

AFAD AND PSFD TYPICAL APPLICATIONS AND CRITERIA ARE LOCATED AT THE FOLLOWING: EPG 616.8.10A (TA-10A) LANE CLOSURE ON TWO-LANE HIGHWAYS USING AUTOMATED FLAGGER ASSISTANCE DEVICE WITH RED AND AMBER SIGNAL SYSTEM & EPG 616.8.10 (TA-10C) LANE CLOSURE ON TWO-LANE HIGHWAYS USING PORTABLE SIGNAL FLAGGING DEVICE.

IF RUMBLE STRIPS ARE USED, REVIEW 616.6.87 RUMBLE STRIPS.

IF USED AT NIGHT, THE FLAGGER STATIONS SHALL BE ILLUMINATED WITH AN AVERAGE MAINTAINED INTENSITY OF 0.6 FOOT CANDLES (6.5 LUX).

FOR FLAGS AND ADVANCE WARNING RAIL SYSTEMS, REFER TO EPG 616.6.2.2 FLAGS AND ADVANCED WARNING RAIL SYSTEM

ONE LANE CLOSURE TWO WAY
FLAGGER CONTROL
TEMPORARY
TRAFFIC CONTROL
SHEET 5 OF 10

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

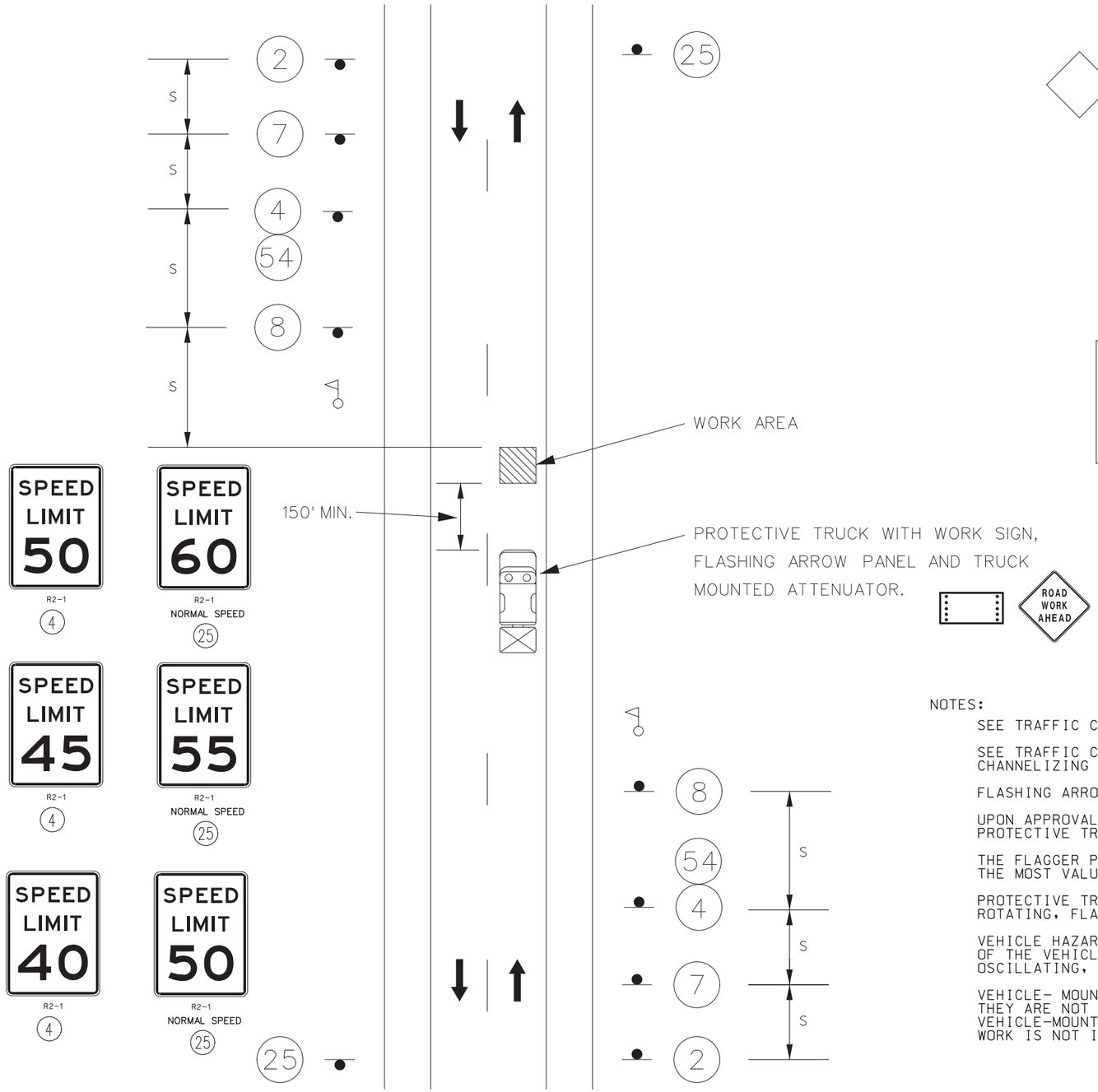
DATE PREPARED	
7/9/2020	
ROUTE 2	STATE MO
DISTRICT KC	SHEET NO. 14
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

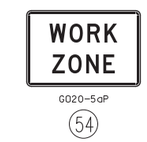
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



FOR FLAGS AND ADVANCE WARNING RAIL SYSTEMS, REFER TO EPG 616.6.2.2 FLAGS AND ADVANCED WARNING RAIL SYSTEM



NOTES:

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

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

FLASHING ARROW PANELS SHALL BE OPERATED IN CAUTION MODE.

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

THE FLAGGER POSITION SHOULD BE LOCATED WHERE THEY WILL PROVIDE THE MOST VALUE TO THE MOTORIST AND THE WORK CREW.

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

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

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

TWO-LANE UNDIVIDED HIGHWAY
MOVING OPERATION ON HIGHWAY OPEN TO TRAFFIC

TA-17

MOVING OPERATION
OPEN TO TRAFFIC
TEMPORARY
TRAFFIC CONTROL
SHEET 6 OF 10

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

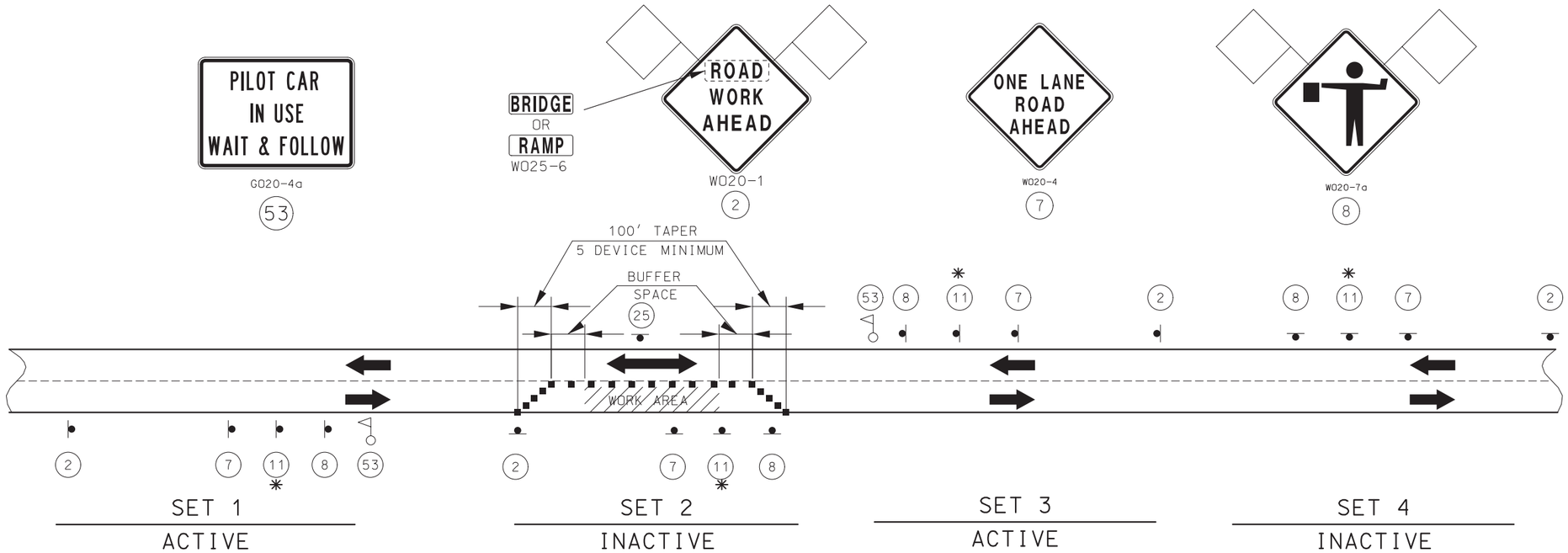
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 7/9/2020	
ROUTE 2	STATE MO
DISTRICT KC	SHEET NO. 15
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

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

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



TAPER LENGTHS AND SPACING OF CHANNELIZING DEVICES						
SPEED (P) MPH	MINIMUM TAPER LENGTHS (L) FOR LANE WIDTHS (W)			MINIMUM TAPER SHOULDER (T1)	MAXIMUM CHANNELIZER SPACING	
	10 FT	11 FT	12 FT		TAPERS	BUFFER/ WORK AREA
0-35	205 FT	225 FT	245 FT	70	35 FT	40 FT
40-45	450 FT	495 FT	540 FT	150	40 FT	80 FT
50-55	550 FT	605 FT	660 FT	185	50 FT	80 FT
60-70	700 FT	770 FT	840 FT	235	60 FT	120 FT

LONGITUDINAL BUFFER SPACE	
SPEED (P) MPH	BUFFER SPACE (FEET)
0-35	280
40-45	400
50-55	560
60-70	840

FOR FLAGS AND ADVANCE WARNING RAIL SYSTEMS, REFER TO EPG 616.6.2.2 FLAGS AND ADVANCED WARNING RAIL SYSTEM

- FLAGGER

CHANNELIZERS

SIGN SETS 1 AND 3 ARE ACTIVE AND (I.E., SIGNS FACE ONCOMING TRAFFIC).

SIGN SETS 2 AND 4 ARE INACTIVE (I.E., SIGNS DO NOT FACE EITHER DIRECTION OF TRAFFIC) WHEN THE RESURFACING OPERATION IS LOCATED BETWEEN SIGN SETS 1 AND 3.

WHEN SIGN SETS 2 AND 4 ARE ACTIVE, SIGN SETS 1 AND 3 BECOME INACTIVE AND ARE ADVANCED TO BECOME SETS 2 AND 4 WITH SIGN LEGENDS TURNED AWAY FROM BOTH DIRECTIONS OF TRAFFIC. WHEN THE RESURFACING OPERATION ADVANCES TO BETWEEN SIGN SET 2 AND 4, SIGN SET 2 AND 4 BECOME ACTIVE (I.E. NEW SIGN SET 1 AND 3) AND SIGN SET 1 AND 3 ADVANCED IN THE DIRECTION OF THE OPERATION (I.E. NEW SIGN SET 2 AND 4).

SIGN SPACING FOR ADVANCE SIGN SERIES (1) (2)		
SPEED (P) MPH	NON-DIVIDED HIGHWAYS (S)	DIVIDED HIGHWAYS (S)
0-35	200 FT	200 FT
40-45	350 FT	500 FT
50-55	500 FT	1000 FT
60-70	SA-1000 FT, SB-1500 FT, SC-2640 FT **	

** THE SA DIMENSION IS THE DISTANCE FROM THE TRANSITION OR POINT OF RESTRICTION TO THE FIRST SIGN.

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

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

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

NOTES:

DIMENSIONS IN FEET UNLESS OTHERWISE NOTED.

(1) SPACING BETWEEN SIGNS AND SPACING BETWEEN LAST SIGN AND FLAGGER, BEGINNING OF TAPER, OR SIGNED CONDITION

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

TAPER LENGTH (L)

$L = W \times P$ FOR 40 MPH OR MORE

$L = \frac{WP^2}{60}$ FOR 35 MPH OR LESS

L = TAPER LENGTH IN FEET

W = LATERAL SHIFT IN FEET

P = POSTED SPEED PRIOR TO ROAD WORK IN MPH

GENERAL NOTES:

1. SEE STANDARD PLAN 616.10 FOR DETAILS AND ITEMS NOT SHOWN
2. EXISTING SIGNS SHALL BE COVERED DURING WORKING HOURS ONLY IF IN CONFLICT WITH TRAFFIC CONTROL PLANS.
3. NO DIRECT PAYMENT WILL BE MADE FOR RELOCATING, COVERING, UNCOVERING OR REMOVING SIGNS.
4. CONES ALLOWABLE FOR DAYTIME OPERATIONS ONLY.
5. LOCATE FLASHING ARROW PANEL AT BEGINNING OF TAPER WHEN FEASIBLE, ARROW PANELS ARE ALWAYS LOCATED BEHIND CHANNELIZERS OR CONES.

NOTES:

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

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

DAYLIGHT FLAGGING OPERATIONS ONLY.

CHANNELIZING DEVICES LOCATED DOWNSTREAM OF THE ONE-LANE, TWO-WAY TAPER ARE OPTIONAL. THESE DEVICES SHOULD BE ELIMINATED WHEN THEIR USE WILL REDUCE THE USABLE LANE WIDTH, INCLUDING ANY ACCEPTABLE SHOULDERS, TO LESS THAN 10' OR WILL SIGNIFICANTLY AFFECT THE RESURFACING OPERATION.

IF RUMBLE STRIPS ARE USED, REVIEW 616.6.87 "RUMBLE STRIPS".

* NOTE: THIS SIGN IS INSERTED BETWEEN SIGNS 7 & 8 WITH THE SPACING OF 1/2 THE STANDARD SPACING WHEN NO WORK ZONE SPEED LIMIT IS ESTABLISHED.

TA-10D

FLAGGING CONTROL
RESURFACING
OR MOVING OPERATION
TEMPORARY
TRAFFIC CONTROL
SHEET 7 OF 10

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 7/9/2020	
ROUTE 2	STATE MO
DISTRICT KC	SHEET NO. 16
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

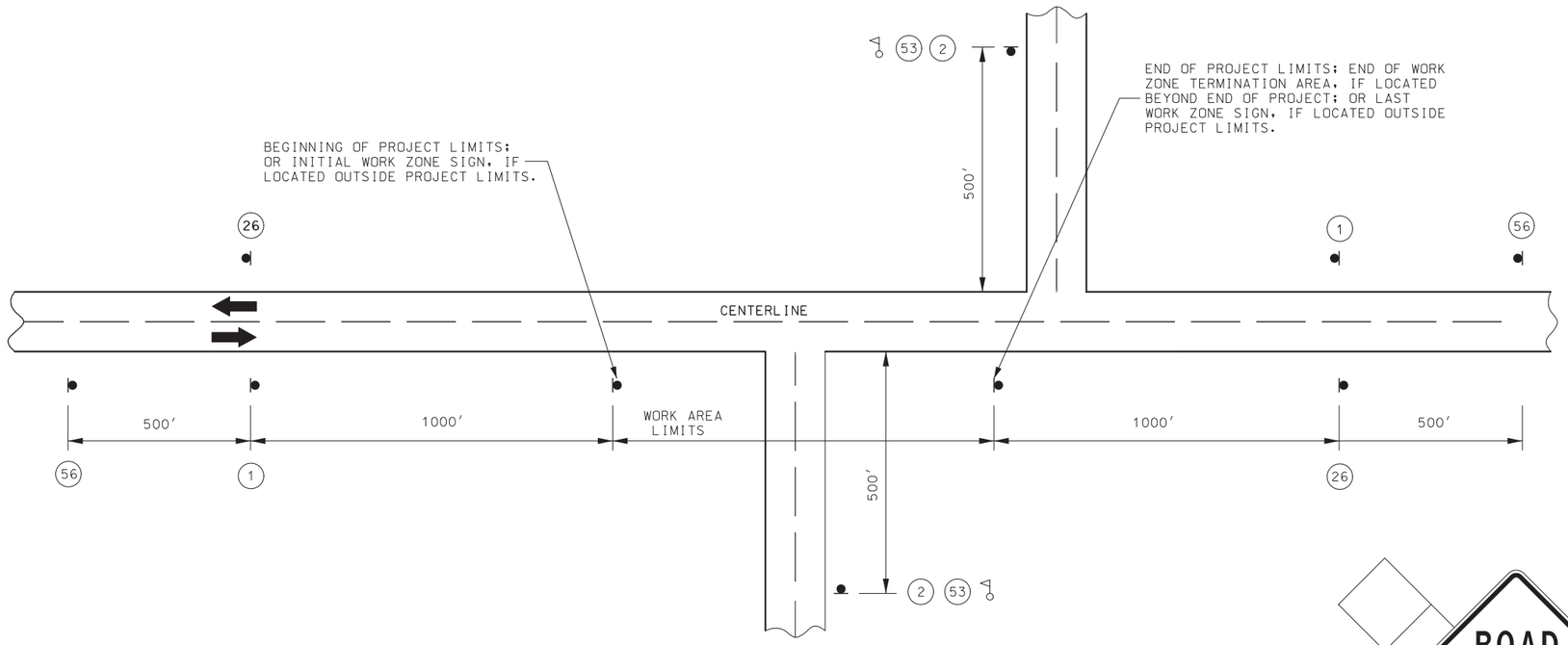
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.

$FILE$

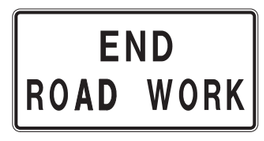


G020-4a

53

CONST-7-48

56

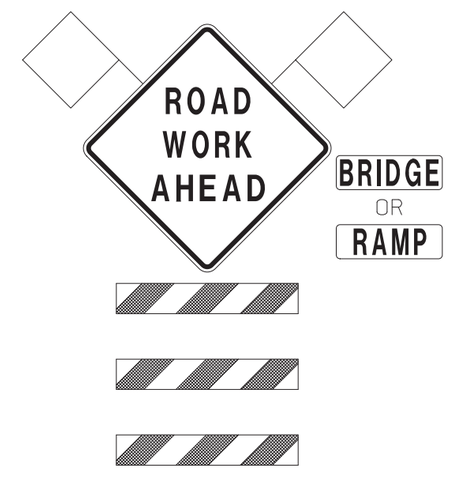


G020-2

26

G020-1

1



W020-1

2

NOTES:

SIGN (1) IS ONLY USED ON PROJECT LENGTHS 2 MILES OR GREATER.

SIGN (26) MAY BE USED ON PROJECTS LESS THAN 2 MILES.

PROVIDE SIGNS IN EACH DIRECTION ON TWO-WAY HIGHWAY.

DISTANCE MAY BE ADJUSTED ACCORDING TO FIELD CONDITIONS.

FLAGGER

SIDE ROAD
TEMPORARY
TRAFFIC CONTROL
SHEET 8 OF 10

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

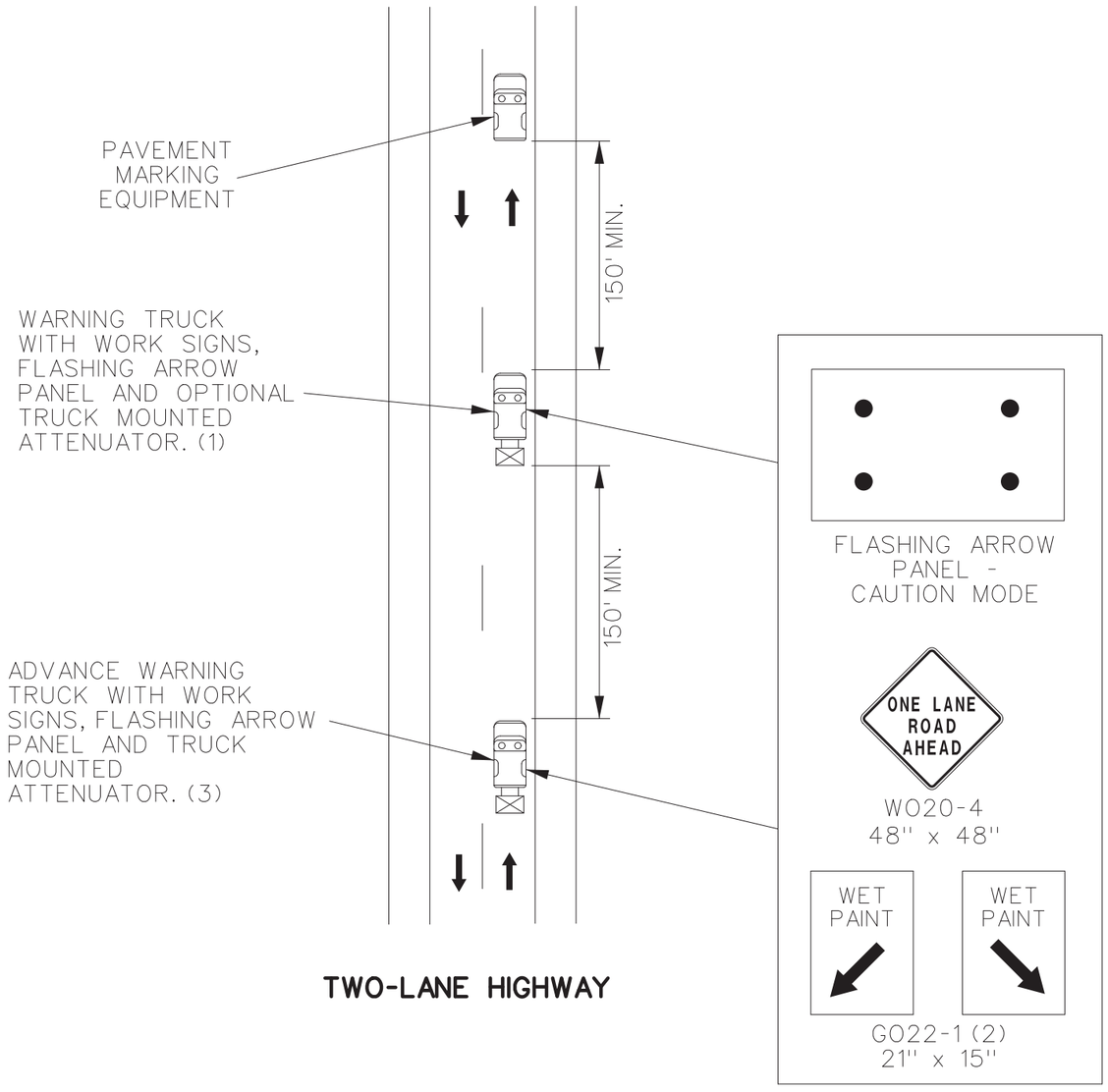
DATE PREPARED 7/9/2020	
ROUTE 2	STATE MO
DISTRICT KC	SHEET NO. 17
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



TWO-LANE HIGHWAY

NOTES:

ALL SIGNS HAVE TYPE 3 FLUORESCENT ORANGE RETROFLECTIVE SHEETING.

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

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

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

(1). TRUCK IS OPTIONAL ON TWO-LANE UNDIVIDED HIGHWAYS IF SIGNING AND ARROW BOARD IS MOUNTED ON THE PAVEMENT MARKING EQUIPMENT.

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

(3). ADVANCE WARNING TRUCK IS POSITIONED AT THE NO TRACK POINT OF THE PAVEMENT MARKING MATERIAL OR SPACING SHOWN, WHICHEVER IS GREATER.

MOVING OPERATION ON HIGHWAY OPEN TO TRAFFIC

TA-17A

MOVING OPERATION
OPEN TO TRAFFIC
TEMPORARY
TRAFFIC CONTROL
SHEET 9 OF 10

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	7/9/2020
ROUTE	2
STATE	MO
DISTRICT	KC
SHEET NO.	18
COUNTY	CASS
JOB NO.	J4P3248
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

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

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

W020-1

2

W020-4

7

W020-7a

8

R2-1

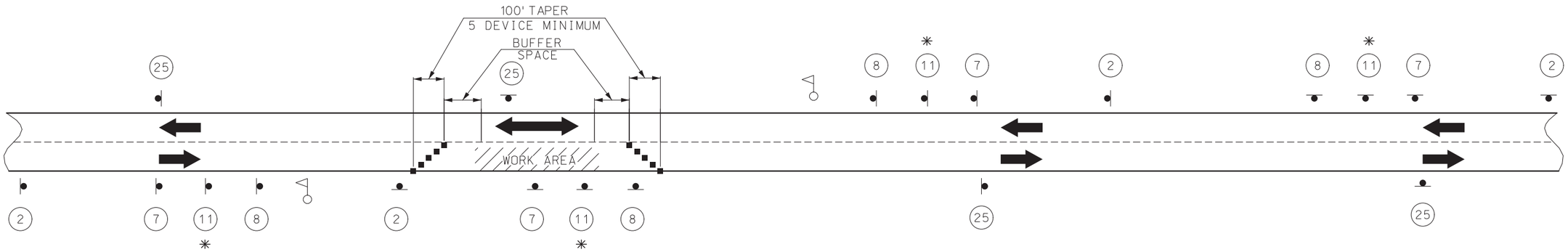
NORMAL SPEED

25

W03-4

11

✳ NOTE: THIS SIGN IS INSERTED BETWEEN SIGNS 7 & 8 WITH THE SPACING OF 1/2 THE STANDARD SPACING WHEN NO WORK ZONE SPEED LIMIT IS ESTABLISHED.



SET 1	SET 2	SET 3	SET 4
ACTIVE	INACTIVE	ACTIVE	INACTIVE

SIGN SETS 1 AND 3 ARE ACTIVE AND (I.E., SIGNS FACE ONCOMING TRAFFIC).

SIGN SETS 2 AND 4 ARE INACTIVE (I.E., SIGNS DO NOT FACE EITHER DIRECTION OF TRAFFIC) WHEN THE RESURFACING OPERATION IS LOCATED BETWEEN SIGN SETS 1 AND 3.

WHEN SIGN SETS 2 AND 4 ARE ACTIVE, SIGN SETS 1 AND 3 BECOME INACTIVE AND ARE ADVANCED TO BECOME SETS 2 AND 4 WITH SIGN LEGENDS TURNED AWAY FROM BOTH DIRECTIONS OF TRAFFIC. WHEN THE RESURFACING OPERATION ADVANCES TO BETWEEN SIGN SETS 2 AND 4, SIGN SETS 2 AND 4 BECOME ACTIVE (I.E., NEW SIGN SETS 1 AND 3) AND SIGN SETS 1 AND 3 ADVANCED IN THE DIRECTION OF THE OPERATION (I.E., NEW SIGN SETS 2 AND 4).

■ - CHANNELIZERS

- FLAGGER

NOTES:

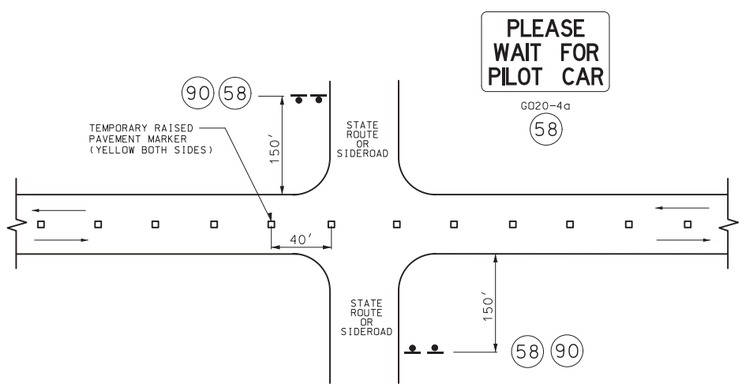
DAYLIGHT FLAGGING OPERATIONS ONLY.

CHANNELIZING DEVICES LOCATED DOWNSTREAM OF THE ONE-LANE, TWO-WAY TAPER ARE OPTIONAL. THESE DEVICES SHOULD BE ELIMINATED WHEN THEIR USE WILL REDUCE THE USABLE LANE WIDTH, INCLUDING ANY ACCEPTABLE SHOULDERS, TO LESS THAN 10′ OR WILL SIGNIFICANTLY AFFECT THE RESURFACING OPERATION.

FLAG ASSEMBLIES FOR SIGNS WILL BE PAID FOR AS EACH PER SIGN, EXCEPT FOR SIGN W020-7A WHICH IS SUBSIDIARY TO THE SIGN.

(1) SIGN 53, "PILOT CAR FOLLOW ME" SHALL BE THE CONTRACTOR'S RESPONSIBILITY WHEN IN USE DURING OPERATION.

(2) SIGN 90, "BUMP" IS OPTIONAL AND AT THE DISCRETION OF THE ENGINEER.



STATE ROUTE INTERSECTIONS

G020-4

53

(1)

W08-1

90

(2)

PILOT CAR
TRAFFIC CONTROL
SHEET 10 OF 10

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
7/9/2020	
ROUTE 2	STATE MO
DISTRICT KC	SHEET NO. 19
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

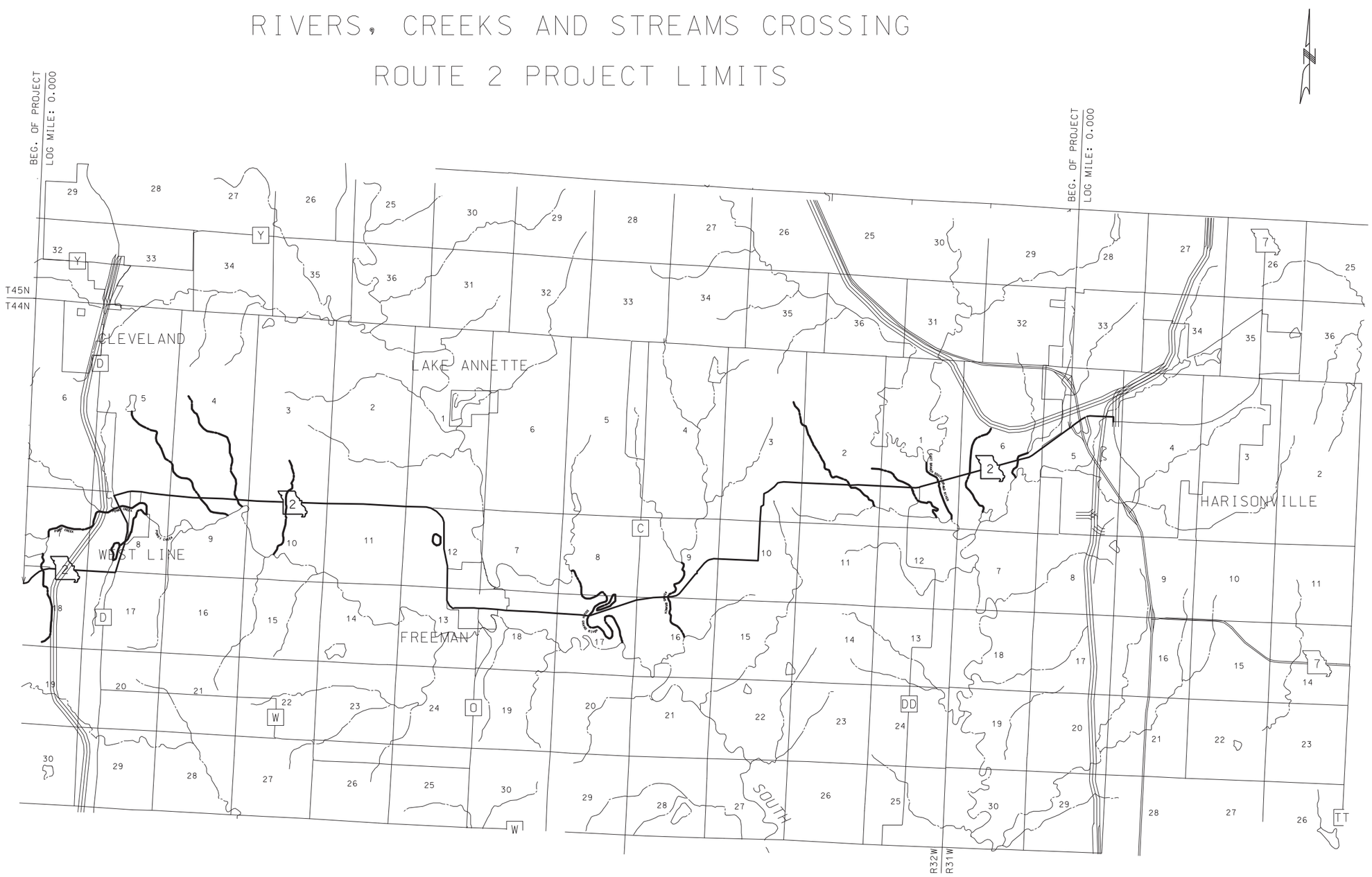
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.

RIVERS, CREEKS AND STREAMS CROSSING
ROUTE 2 PROJECT LIMITS



NOT TO SCALE

EROSION CONTROL SHEET
SHEET 1 OF 3

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

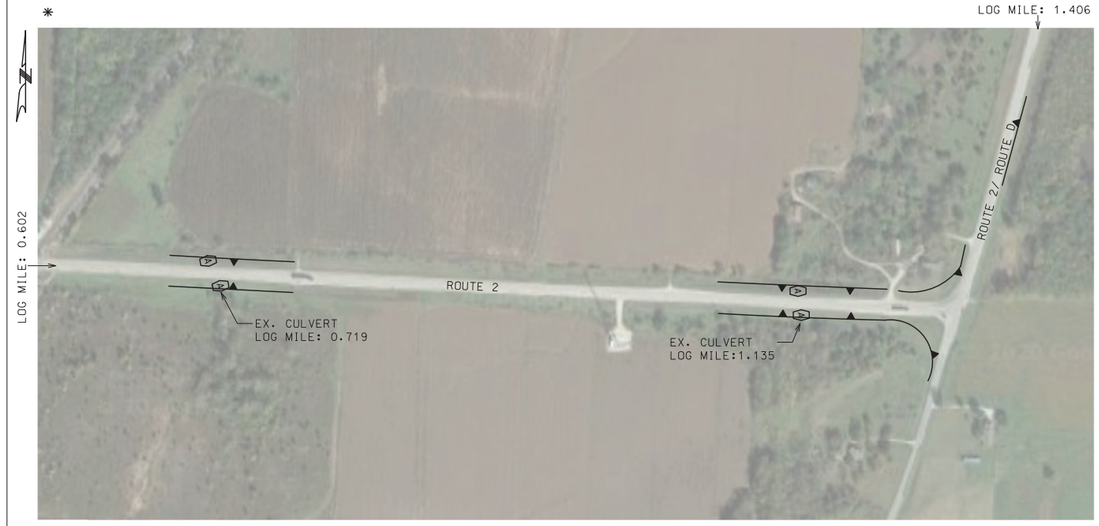
DATE PREPARED	7/9/2020
ROUTE	2
STATE	MO
DISTRICT	KC
SHEET NO.	20
COUNTY	CASS
JOB NO.	J4P3248
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



A ALTERNATE DITCH CHECK

SILT FENCE

NOTE:
✳ THE EXISITNG GRASS ON THE SIDE OF THE ROADWAY SHOULD NOT BE DISTURBED OR HAVE MINIMUM DISTURBANCE IN ORDER TO PROVIDE SUFFICIENT FILTRATION FOR THE MINIMUM DISTURBANCE GRADING AREA NEXT TO THE SHOULDER

NOT TO SCALE

EROSION CONTROL SHEET
SHEET 2 OF 3

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
7/9/2020	
ROUTE 2	STATE MO
DISTRICT KC	SHEET NO. 21
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

A ALTERNATE DITCH CHECK

SILT FENCE

NOTE:
✳ THE EXISITNG GRASS ON THE SIDE OF THE ROADWAY SHOULD NOT BE DISTURBED OR HAVE A MINIMUM DISTURBANCE IN ORDER TO PROVIDE SUFFICIENT FILTRATION FOR THE MINIMUM DISTURBANCE GRADING AREA NEXT TO THE SHOULDER

NOT TO SCALE

EROSION CONTROL SHEET
SHEET 3 OF 3

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

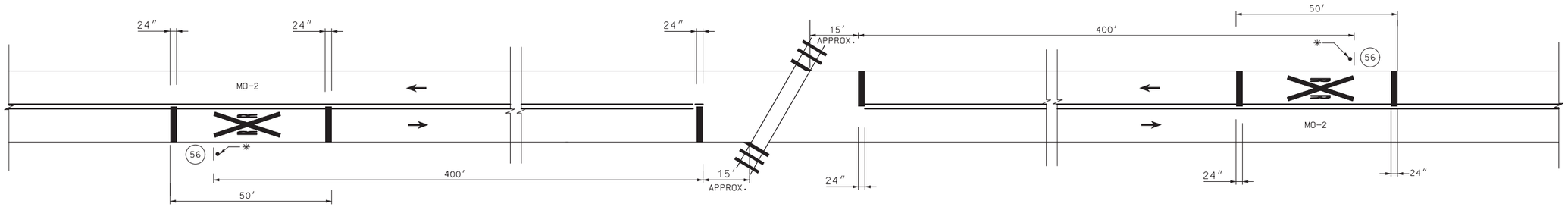
DATE PREPARED	
7/9/2020	
ROUTE 2	STATE MO
DISTRICT KC	SHEET NO. 22
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

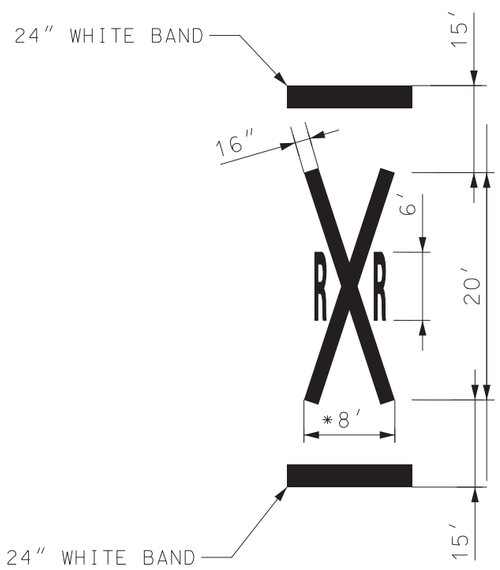
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



R.R.CROSSING ON ROUTE 2
LOG MILE: 0.583 TO 0.853



* WIDTH MAY VARY ACCORDING TO LANE WIDTH

W10-1

56

NOTE:
* RELOCATE THE EXISITNG SIGN ASSEMBLIES AFTER THE WORK IS COMPLETED IN THE AREA THAT RELOCATION IS REQUIRED (AS MENTIONED IN PM PLAN SHEET, SHEET 19)
REFER JSP SEC.N-RELOCATION OF EXISITNG SIGN ASSEMBLIES

NOT TO SCALE

RR CROSSING
PAVEMENT MARKING DETAILS
SHEET 1 OF 1

STATE OF MISSOURI
ALLAN JEFFREY LUDIKER
NUMBER PE-2002003198
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
7/9/2020	
ROUTE 2	STATE MO
DISTRICT KC	SHEET NO. 23
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

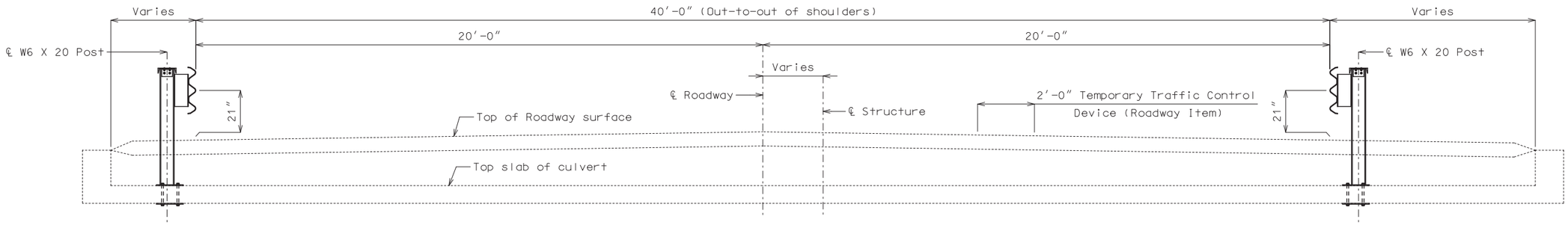
DATE	DESCRIPTION

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

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

SEC/SUR 9 TWP 44N RGE 32W

U.I.P. AND REHAB EXISTING 2(14′ X 13′) CONCRETE BOX CULVERT



SECTION THRU SLAB SHOWING RAIL POST

GENERAL NOTES:

Design Specifications: 2002 AASHTO LFD (17th Ed.) Standard Specifications

Guardrail delineators shall be attached to the top of the guardrail and shall similarly use the delineator details of Missouri Standard Plan 617.10, except that the delineator body shall be attached to the top of the cap rail using galvanized anchorage as shown on Missouri Standard Plan 606.50. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Guardrail delineators will be considered completely covered by the contract unit price for Bridge Guardrail (Thrie Beam).

Panel lengths of channel members shall be attached continuously to a minimum of four posts and a maximum of six posts (except at end bents).

All bolts, nuts, washers and plates will be considered completely covered by the contract unit price for Bridge Guardrail (Thrie Beam).

All steel connecting bolts and fasteners for posts and railing, and all anchor bolts, nuts, washers and plates shall be galvanized after fabrication. Protective coating and material requirement of steel railing shall be in accordance with Sec 1040.

Rail posts shall be set perpendicular to roadway profile grade, vertically in cross section and aligned in accordance with Sec 713 except that the rail posts shall be aligned by the use of 3 x 1 3/4-inch shims such that the post deviates not more than 1/2 inch from true horizontal alignment after final adjustment. The shims shall be placed between the blockout and the thrie beam rail. The thickness of the shims shall be determined by the contractor and verified by the engineer before ordering material for this work.

At the expansion slots in the thrie beam rails and channels, the bolts shall be tightened and backed off one-half turn and the threads shall be burred.

Minimum length of thrie beam sections is equal to one post space.

A 5/8-inch diameter button-head, oval shoulder bolt with a minimum 3/8-inch thick hex nut shall be used at all slots.

Thrie beam guardrail on the bridge shall be 12-guage steel.

Posts, cap rail angles, post plates, channels and channel splice plates shall be fabricated from ASTM A709 Grade 36 steel and galvanized.

Flat washers 3 x 1 3/4 x 3/16-inch minimum shall be used at all post bolts between the bolt head and beam. The washers shall be rectangular in shape with an 11/16 x 1-inch slot, or when necessary of such design as to fit the contour of the beam. Rectangular washers 3 x 1 3/4 x 5/8-inch shall be used between the blockout and the thrie beam rail.

Special drilling of the thrie beam may be required at the splices. All drilling details shall be shown on the shop drawings.

Fabrication of structural steel shall be in accordance with Sec 1080.

Expansion splices in the thrie beam rail shall be made at either the first or second post on either side of the joint and on structure at bridge ends. When the splice is made at the second post, an expansion slot shall be provided in the thrie beam rail for connection to the first post to allow for movement.

In addition to the expansion provisions at the expansion joints, expansion splices in the thrie beam rail and the channel shall be provided at other locations so that the maximum length without expansion provisions does not exceed 200 feet.

Shim plates 6 x 6 x 1/16-inch may be used between the top of the post and the channel member as required for vertical alignment.

Shim plates shall be galvanized after fabrication.

Contractor shall verify all dimensions in field before ordering materials.

See Missouri Standard Plan 606.50 for details not shown.

For rail post spacing, see Sheet No. 2.

Required excavation, backfilling & roadway surface restoration necessary for rail post installation on culvert shall be considered completely covered by the contract unit price for Bridge Guardrail (Thrie Beam).

Estimated Quantities

Item		Total
Bridge Guardrail (Thrie Beam)	linear foot	55

REPAIRS TO BRIDGE: ROUTE 2
OVER ADAMS BRANCH

ROUTE 2 FROM ROUTE 71 TO ROUTE C
ABOUT 0.4 MILE EAST OF ROUTE C
TIE STA. 417+34.31± (MATCH EXISTING)

STD. 606.50
STD. 606.70
STD. 617.10

Detailed Apr. 2020
Checked May 2020

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

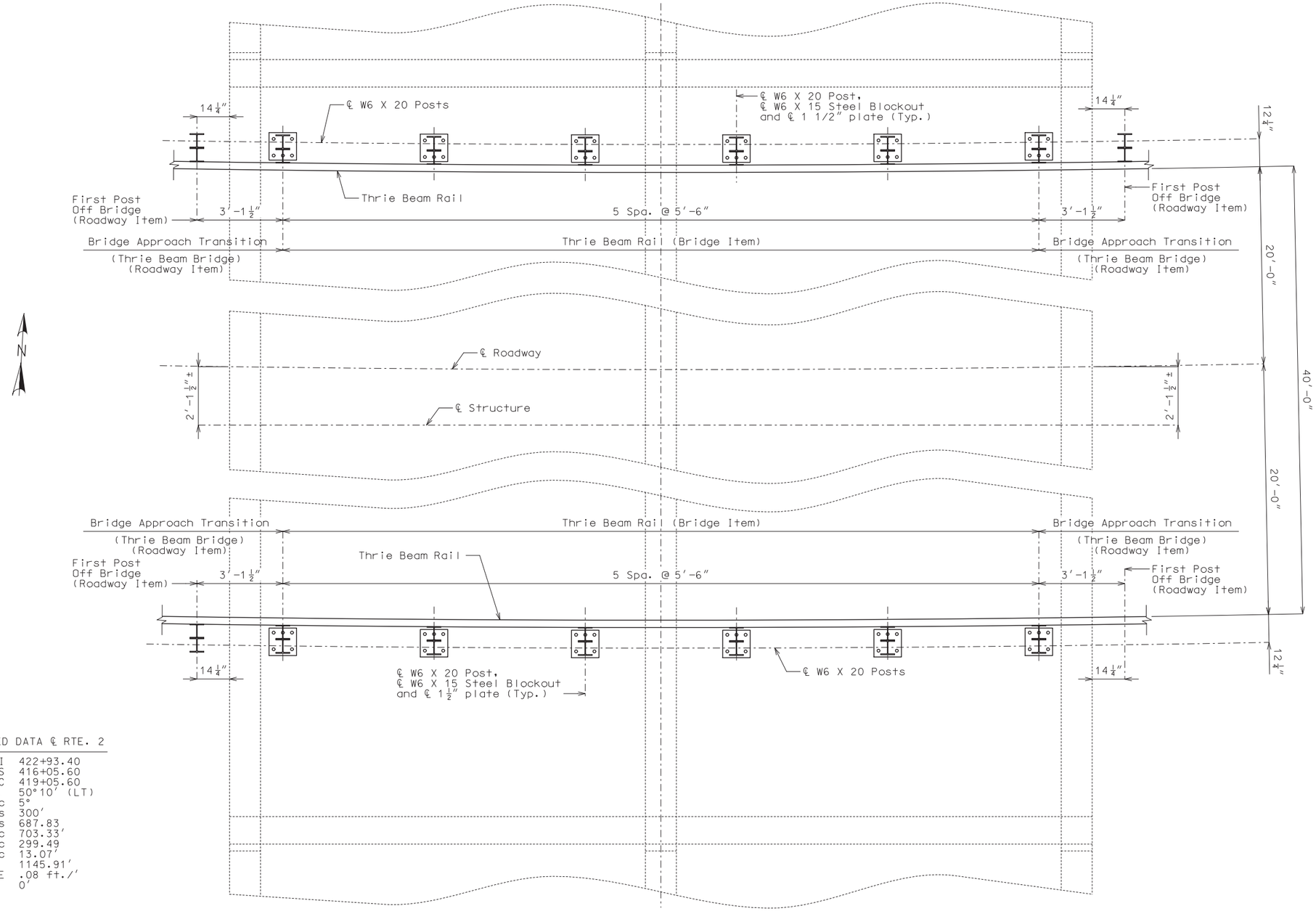
STATE OF MISSOURI
DAVID JAMES HAGEMEYER
NUMBER PE-2007002788
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 5/22/2020
ROUTE 2 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY CASS
JOB NO. J4P3248
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A20871

DATE	DESCRIPTION

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

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



CURVED DATA ℄ RTE. 2

PI	422+93.40
TS	416+05.60
SC	419+05.60
Δ	50°10' (LT)
Dc	5°
Ls	300'
Ts	687.83
Lc	703.33'
Xc	299.49
Yc	13.07'
R	1145.91'
SE	.08 ft./'
W	0'

PART PLAN OF CULVERT SHOWING RAIL POST SPACING

Cap rail channel not shown for clarity.

Notes:

Measurement of Bridge Guardrail (Thrie Beam) is to the nearest linear foot, measured along the roadway face of rail from center of first post to center of last post on culvert.

For Details of Rail Post, see Sheets No. 3 & 4.

PART PLAN SHOWING RAIL POST SPACING

Detailed Apr. 2020
Checked May 2020

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

STATE OF MISSOURI
DAVID JAMES HAGEMEYER
NUMBER PE-2007002788
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	5/22/2020
ROUTE	2
STATE	MO
DISTRICT	BR
SHEET NO.	2
COUNTY	CASS
JOB NO.	J4P3248
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A20871

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

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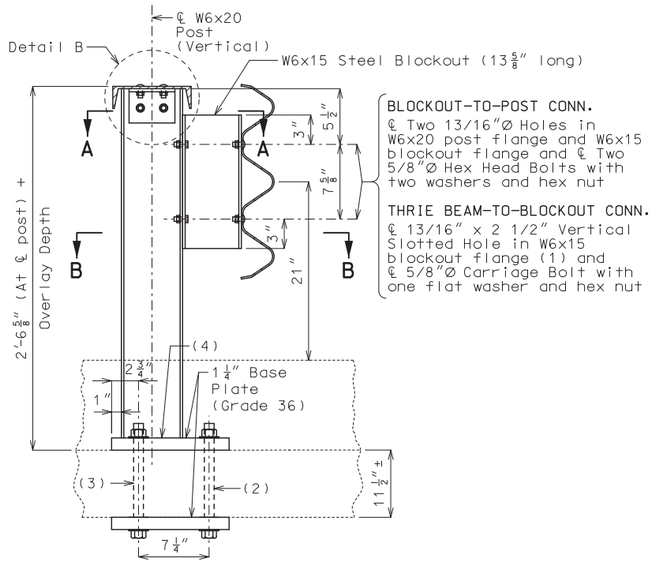
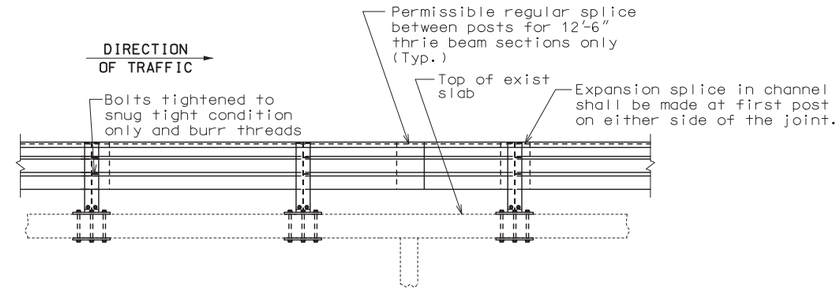


PART SECTION AT RAIL POST



PART ELEVATION SHOWING THRIE BEAM THRU RAIL

Note:

For Plan of Slab Showing Post Spacing see Sheet No. 2.

For additional details see Sheet No. 4.

(1) Required on one side of web only, but may be provided on both sides of web at the contractor's option.

(2) ℄ Three 1 1/8"Ø Drilled Holes in slab

℄ Three 1"Ø A307 Bolts with plate washer, hardened locking washers and hex nuts

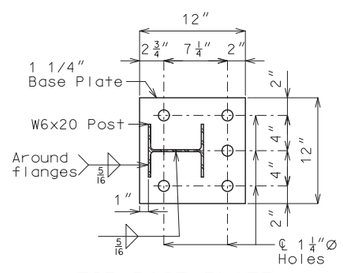
℄ Three 1 1/4"Ø Holes in both plates

(3) ℄ Two 1 1/8"Ø Drilled Holes in slab

℄ Two 1"Ø A307 Bolts with plate washer, hardened locking washers and hex nuts

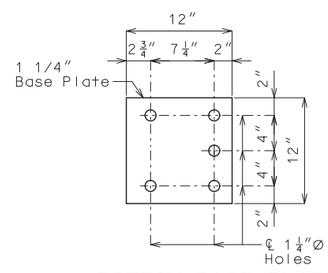
℄ Two 1 1/4"Ø Holes in both plates

(4) Bevel bottom of post (slope 2% or slab elevation).



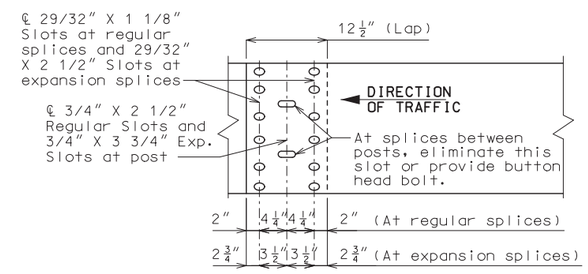
TOP BASE PLATE

(12 Total)

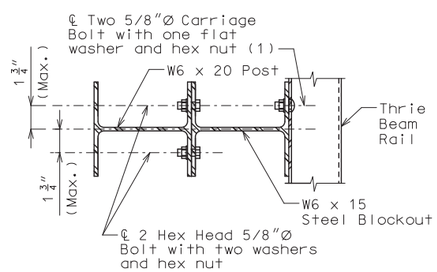


BOTTOM BASE PLATE

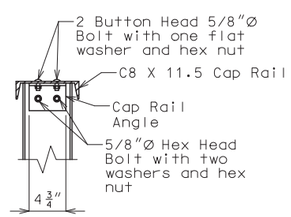
(12 Total)



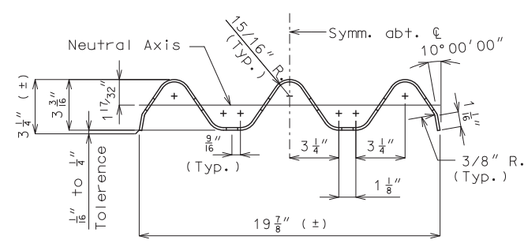
THRIE BEAM RAIL SPLICE DETAILS



SECTION A-A



DETAIL B



SECTION THRU THRIE BEAM RAIL

Detailed Apr. 2020
Checked May 2020

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

STATE OF MISSOURI
DAVID JAMES HAGEMEYER
NUMBER PE-2007002788
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

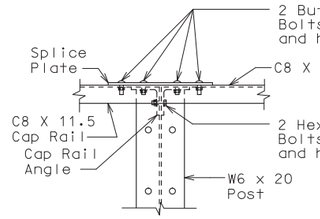
DATE PREPARED 5/22/2020	
ROUTE 2	STATE MO
DISTRICT BR	SHEET NO. 3
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A20871	

DESCRIPTION

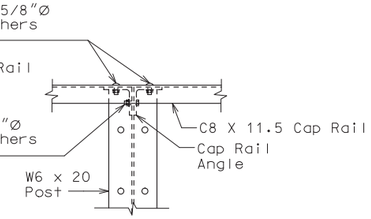
DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

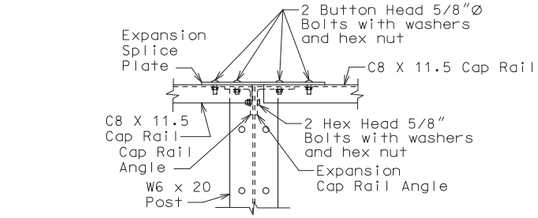
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



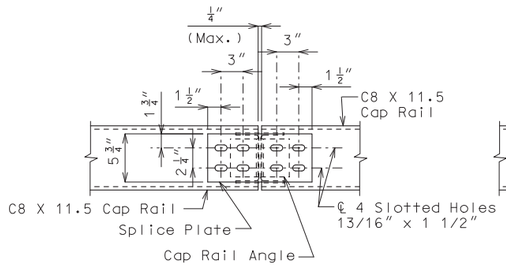
TYPICAL SPLICE ELEVATION



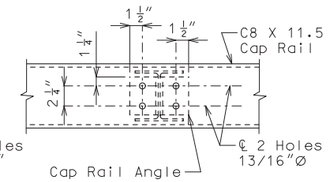
CONNECTION TO
RAIL POST ELEVATION



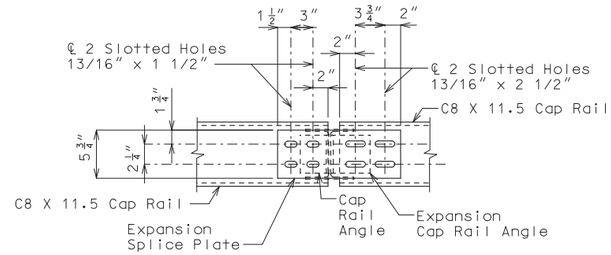
EXPANSION SPLICE ELEVATION



TYPICAL SPLICE PLAN

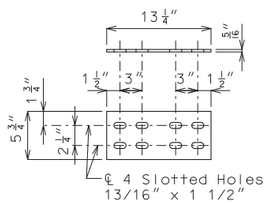


CONNECTION TO
RAIL POST PLAN

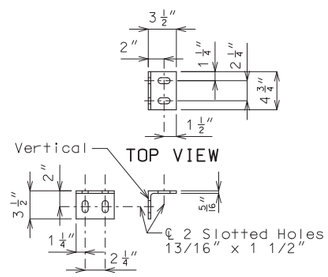


EXPANSION SPLICE PLAN

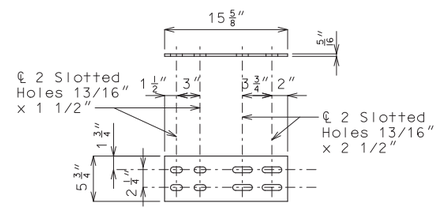
Expansion slots same side of
post as exp. joint



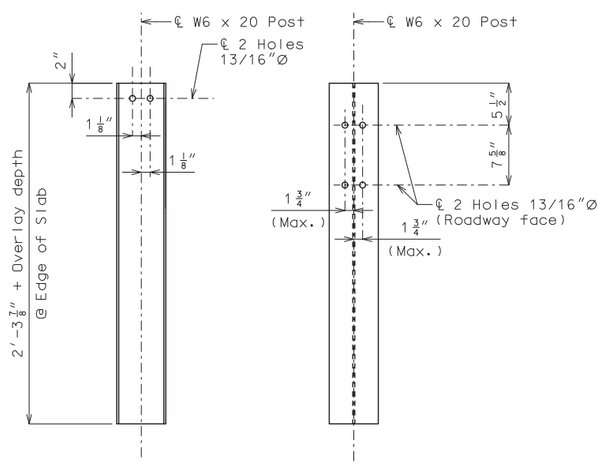
SPLICE PLATE



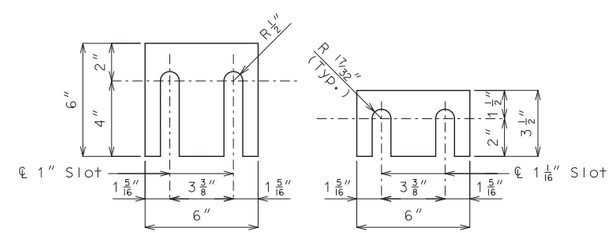
CAP RAIL ANGLE
∠3 1/2 x 3 1/2 x 5/16



EXPANSION SPLICE PLATE



DETAILS OF POST



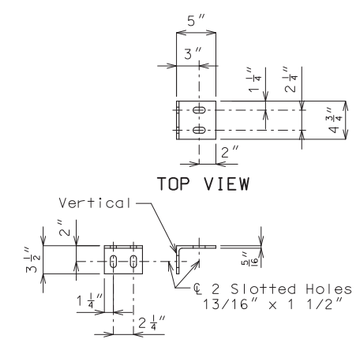
DETAIL OF SHIM PLATES

Notes:

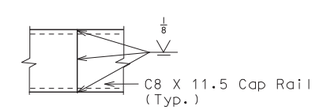
Shim plates 6"x 6" x 1/16" may be used between post W6 x 20 and 6" x 6" x 3/8" plate and shim plates 6" x 3 1/2" x 1/16" may be used between post W6 x 20 and 1/2" bent plate connection as required for horizontal alignment.

Shim plates may vary in thickness from 1/16" to the thickness required, and may be used in multiples.

Shim plates shall be galvanized after fabrication.



EXPANSION CAP RAIL ANGLE
∠5 x 3 1/2 x 5/16



OPTIONAL SPLICE

Shop or field splice
at any location
(Max. one per panel)

Detailed Apr. 2020
Checked May 2020

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

Sheet No. 4 of 4

STATE OF MISSOURI
DAVID JAMES HAGEMEYER
NUMBER PE-2007002788
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
5/22/2020	
ROUTE 2	STATE MO
DISTRICT BR	SHEET NO. 4
COUNTY CASS	
JOB NO. J4P3248	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A20871	

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

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