

**DESIGN DESIGNATION**

A.A.D.T. - 2016 = 75,150  
 A.A.D.T. - 2036 = 101,450  
 T = 11%  
 V = 65 M.P.H.  
 FUNCTIONAL CLASSIFICATION - INTERSTATE

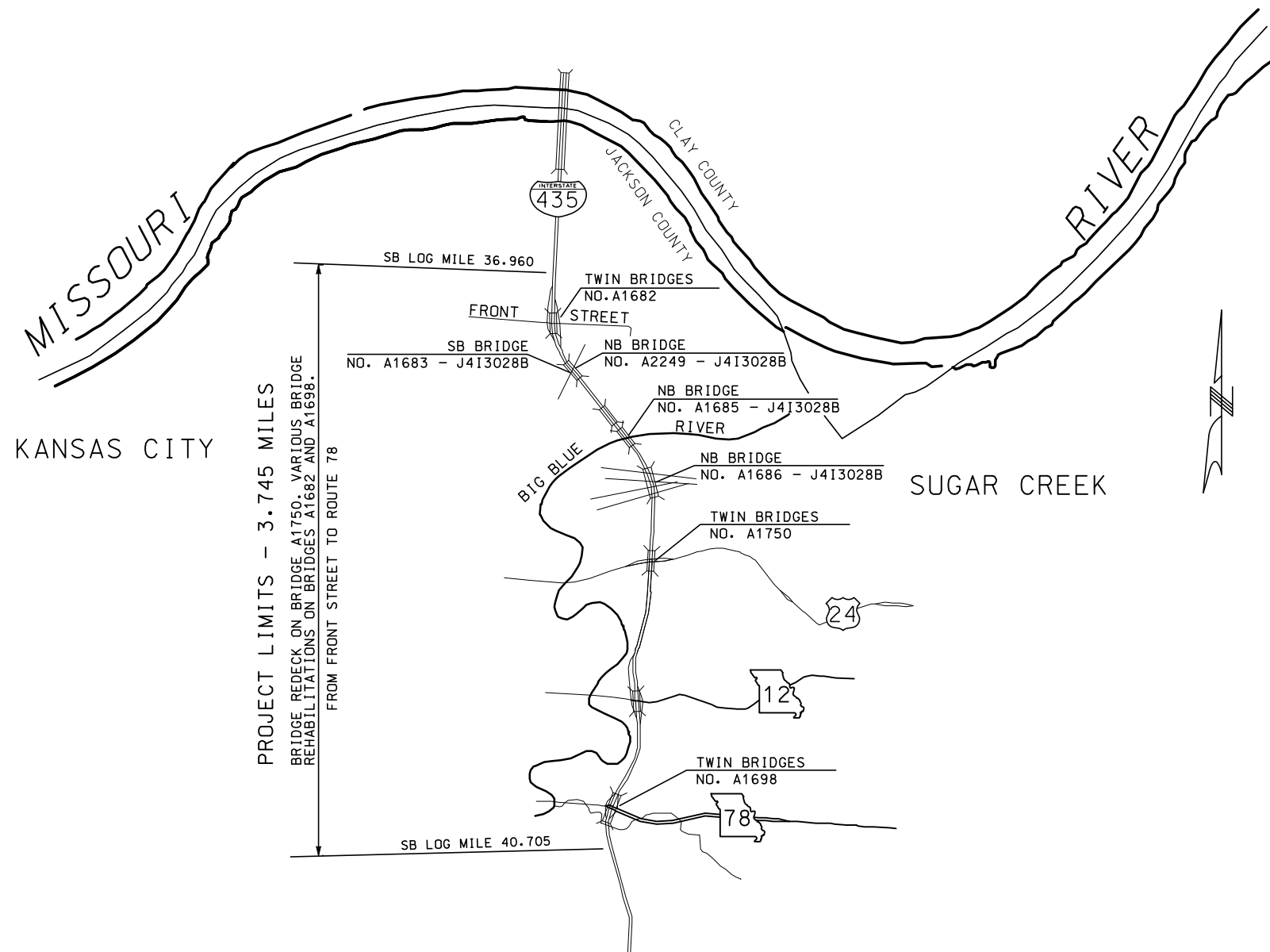
**NO RIGHT OF WAY  
 WILL BE ACQUIRED**

**CONVENTIONAL SYMBOLS  
 (USED IN PLANS)**

	EXISTING	NEW
BUILDINGS AND STRUCTURES		
GUARD RAIL		
CONCRETE RIGHT-OF-WAY MARKER		
STEEL RIGHT-OF-WAY MARKER		
LOCATION SURVEY MARKER		
UTILITIES		
FIBER OPTICS	-FO-	-FO-
OVERHEAD TELEPHONE	-O-	-O-
UNDERGROUND TELEPHONE	-T-	-T-
OVERHEAD POWER	-P-	-P-
UNDERGROUND POWER	-G-	-G-
GAS	-W-	-W-
WATER	-W-	-W-
MANHOLE		
FIRE HYDRANT		
WATER VALVE		
WATER METER		
DROP INLET		
DITCH BLOCK		
GROUND MOUNTED SIGN		
LIGHT POLE		
H-FRAME POWER POLE		
TELEPHONE PEDESTAL		
FENCE		
CHAIN LINK		
WOVEN WIRE		
GATE POST		
BENCHMARK		

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

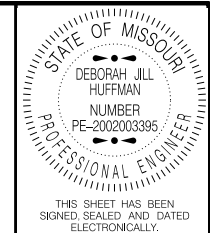
**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
 PLANS FOR PROPOSED  
 STATE HIGHWAY  
 JACKSON COUNTY**



NOT TO SCALE

**INDEX OF SHEETS**

DESCRIPTION	SHEET NUMBER
TITLE SHEET -----	1
TYPICAL SECTIONS (TS) (2 SHEETS)---	2
QUANTITIES (QU) (4 SHEETS)-----	3
TRAFFIC CONTROL SHEETS (TC)-----	4-37
BRIDGE DRAWINGS (B)	
A16824-----	1-2
A16825-----	1-2
A16984-----	1-2
A16985-----	1-2
A17504-----	1-14
A17505-----	1-14



DATE PREPARED: 6/11/2015

ROUTE	STATE
I-435	MO
DISTRICT	SHEET NO.
KC	1
COUNTY	JACKSON
JOB NO.	J413022B
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

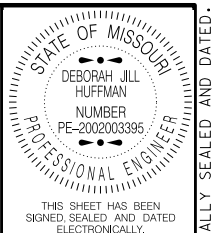
**LENGTH OF PROJECT**

BEGINNING OF PROJECT	SB LOG MILE 36.960
END OF PROJECT	SB LOG MILE 40.705
APPARENT LENGTH	3.745 MILES
EQUATIONS AND EXCEPTIONS:	0 FT
TOTAL CORRECTIONS	0 FT
NET LENGTH OF PROJECT	3.745 MILES
STATE LENGTH OF PROJECT	3.745 MILES

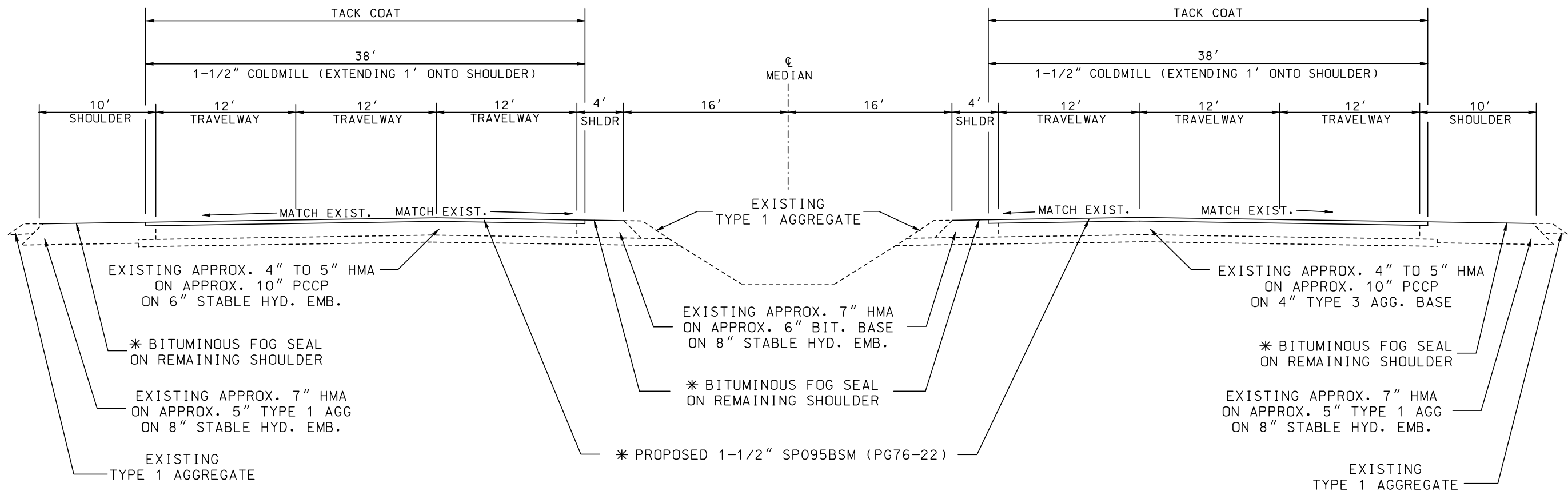
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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.



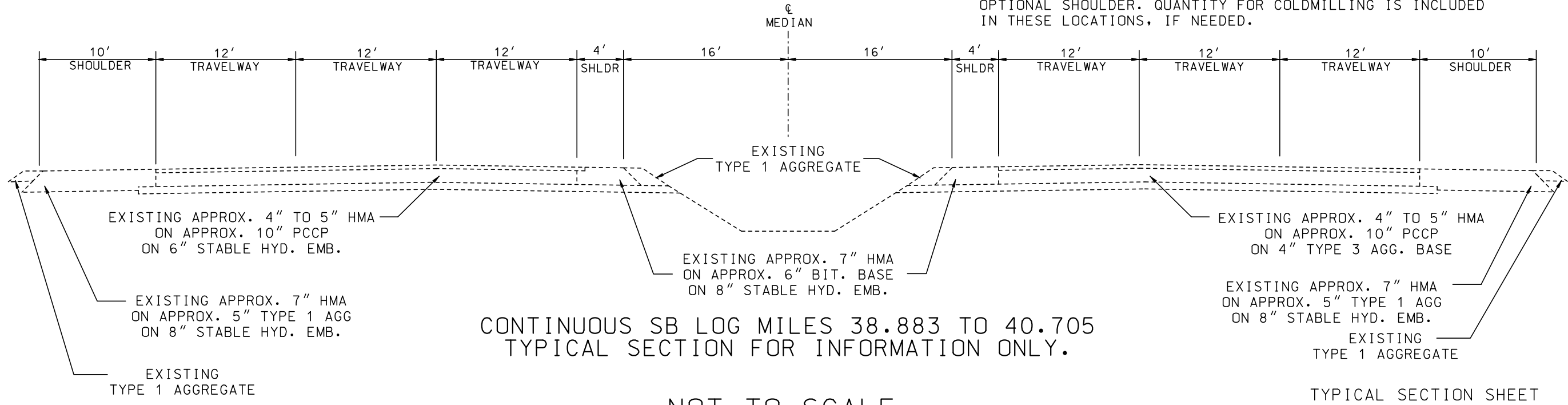
DATE PREPARED 6/17/2015	
ROUTE I-435	STATE MO
DISTRICT KC	SHEET NO. 2
COUNTY JACKSON	
JOB NO. J413022B	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	



CONTINUOUS SB LOG MILES 36.038 TO 38.883  
TYPICAL SECTION FOR INFORMATION ONLY.

\* RESURFACING AND FOG SEALING TO BE COMPLETED BY PROJECT J4I3038C

NOTE: MAY EXCEPT OUT COLDMILLING EXTENDING 1' ONTO SHOULDER IN AREAS OF NEW OPTIONAL SHOULDER BUILT FOR TRAFFIC CONTROL PURPOSES. SEE TYPICAL SECTION SHEET 2 OF 2 FOR LIMITS OF OPTIONAL SHOULDER. QUANTITY FOR COLDMILLING IS INCLUDED IN THESE LOCATIONS, IF NEEDED.



CONTINUOUS SB LOG MILES 38.883 TO 40.705  
TYPICAL SECTION FOR INFORMATION ONLY.

NOT TO SCALE

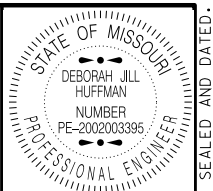
TYPICAL SECTION SHEET  
SHEET 1 OF 2

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.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 8/11/2015

ROUTE I-435 STATE MO

DISTRICT KC SHEET NO. 2

COUNTY JACKSON

JOB NO. J413022B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

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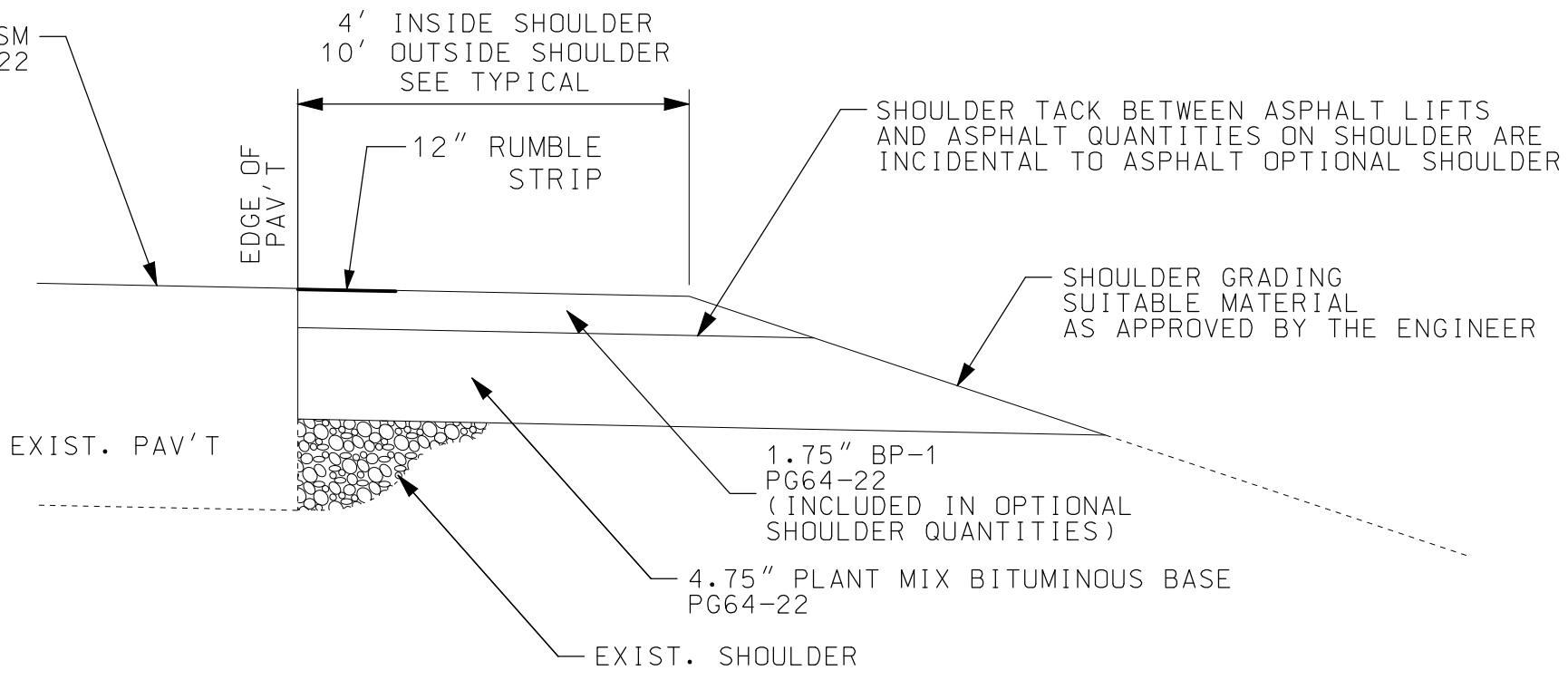
DATE

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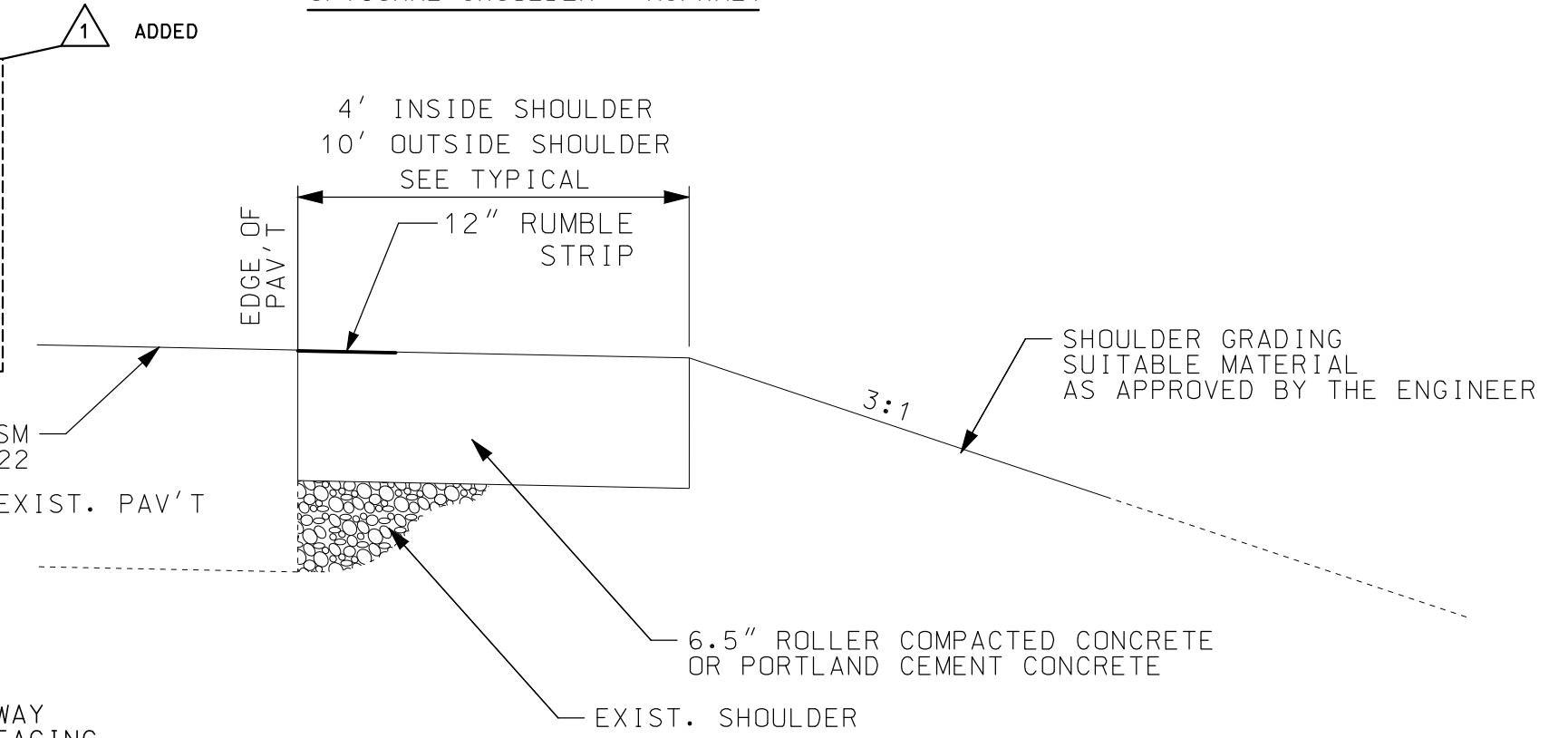
DATE

DATE

SHOULDER LOCATIONS				
LOG MILE	LOG MILE	DIRECTION	LOCATION	REMARKS
16.211	16.310	NB	RTE. 24	REBUILD INSIDE SHOULDER
16.344	16.475	NB	RTE. 24	REBUILD INSIDE SHOULDER
16.250	16.310	NB	RTE. 24	REBUILD OUTSIDE SHOULDER
16.344	16.448	NB	RTE. 24	REBUILD OUTSIDE SHOULDER
18.045	18.140	NB	FRONT ST.	REBUILD INSIDE SHOULDER
18.170	18.220	NB	FRONT ST.	REBUILD INSIDE SHOULDER
18.041	18.140	NB	FRONT ST.	REBUILD OUTSIDE SHOULDER
18.170	18.216	NB	FRONT ST.	REBUILD OUTSIDE SHOULDER
14.471	14.575	NB	RTE. 78	REBUILD INSIDE SHOULDER
14.609	14.656	NB	RTE. 78	REBUILD INSIDE SHOULDER
14.450	14.575	NB	RTE. 78	REBUILD OUTSIDE SHOULDER
14.609	14.675	NB	RTE. 78	REBUILD OUTSIDE SHOULDER
38.769	38.883	SB	RTE. 24	REBUILD INSIDE SHOULDER
38.917	38.974	SB	RTE. 24	REBUILD INSIDE SHOULDER
38.760	38.883	SB	RTE. 24	REBUILD OUTSIDE SHOULDER
38.917	38.972	SB	RTE. 24	REBUILD OUTSIDE SHOULDER
36.960	37.055	SB	FRONT ST.	REBUILD INSIDE SHOULDER
37.085	37.142	SB	FRONT ST.	REBUILD INSIDE SHOULDER
36.968	37.055	SB	FRONT ST.	REBUILD OUTSIDE SHOULDER
37.085	37.170	SB	FRONT ST.	REBUILD OUTSIDE SHOULDER
40.455	40.611	SB	RTE. 78	REBUILD INSIDE SHOULDER
40.645	40.683	SB	RTE. 78	REBUILD INSIDE SHOULDER
40.497	40.611	SB	RTE. 78	REBUILD OUTSIDE SHOULDER
40.645	40.705	SB	RTE. 78	REBUILD OUTSIDE SHOULDER
17.891	17.948	NB	BR. A1683	REBUILD INSIDE SHOULDER
17.722	17.802	NB	BR. A1683	REBUILD INSIDE SHOULDER
17.891	17.948	NB	BR. A1683	REBUILD OUTSIDE SHOULDER
17.664	17.802	NB	BR. A1683	REBUILD OUTSIDE SHOULDER
17.297	17.392	NB	BR. A1685	REBUILD INSIDE SHOULDER
16.981	17.130	NB	BR. A1685	REBUILD INSIDE SHOULDER
16.727	16.771	NB	BR. A1686	REBUILD INSIDE SHOULDER
37.311	37.349	SB	BR. A1683	REBUILD INSIDE SHOULDER
37.450	37.531	SB	BR. A1683	REBUILD INSIDE SHOULDER
37.220	37.347	SB	BR. A1683	REBUILD OUTSIDE SHOULDER
37.450	37.495	SB	BR. A1683	REBUILD OUTSIDE SHOULDER
17.297	17.392	NB	BR. A1685	REBUILD OUTSIDE SHOULDER
16.978	17.130	NB	BR. A1685	REBUILD OUTSIDE SHOULDER
16.707	16.771	NB	BR. A1686	REBUILD OUTSIDE SHOULDER



OPTIONAL SHOULDER - ASPHALT

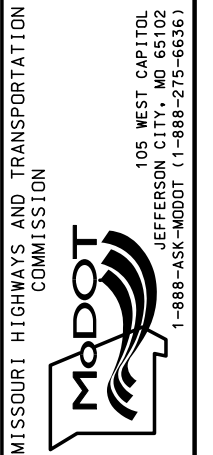


OPTIONAL SHOULDER - CONCRETE

NOTE: RUMBLE STRIP SHALL BE PLACED ON THE SHOULDER AT THE EDGE OF THE TRAVELWAY AFTER COMPLETION OF BRIDGE WORK AND RESURFACING. TO BE CONSTRUCTED WITH PROJECT J413038C.

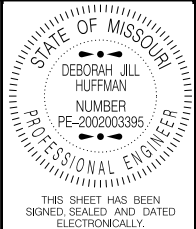
OPTIONAL SHOULDER TYPICAL SECTION SHEET 2 OF 2

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



# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## SUMMARY OF QUANTITIES



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
8/11/2015

ROUTE I-435 STATE MO

DISTRICT KC SHEET NO. 3

COUNTY JACKSON

JOB NO. J413022B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

REMOVAL OF IMPROVEMENTS						
LOG MILE	LOG MILE	LOCATION	OFFSET	DESCRIPTION	QUANTITY EACH	REMARKS
16.304	16.307	I-435 NB	SOUTH END	CONCRETE APPROACH PAVT (BR. A1750)	1	97 S.Y.
16.349	16.352	I-435 NB	NORTH END	CONCRETE APPROACH PAVT (BR. A1750)	1	97 S.Y.
38.875	38.878	I-435 SB	NORTH END	CONCRETE APPROACH PAVT (BR. A1750)	1	97 S.Y.
38.922	38.925	I-435 SB	SOUTH END	CONCRETE APPROACH PAVT (BR. A1750)	1	97 S.Y.
16.307	16.310	I-435 NB	SOUTH END	BRIDGE APPROACH SLAB (BR. A1750)	1	160 S.Y.
16.344	16.349	I-435 NB	NORTH END	BRIDGE APPROACH SLAB (BR. A1750)	1	160 S.Y.
38.878	38.883	I-435 SB	NORTH END	BRIDGE APPROACH SLAB (BR. A1750)	1	160 S.Y.
38.917	38.922	I-435 SB	SOUTH END	BRIDGE APPROACH SLAB (BR. A1750)	1	160 S.Y.
16.211	16.475	I-435 NB	LT.	EXIST. SHLDR. AT BR. A1750	1	1215 L.F. FULL DEPTH SAW CUT
16.250	16.448	I-435 NB	RT.	EXIST. SHLDR. AT BR. A1750	1	865 L.F. FULL DEPTH SAW CUT
38.769	38.974	I-435 SB	LT.	EXIST. SHLDR. AT BR. A1750	1	900 L.F. FULL DEPTH SAW CUT
38.760	38.972	I-435 SB	RT.	EXIST. SHLDR. AT BR. A1750	1	940 L.F. FULL DEPTH SAW CUT
18.045	18.220	I-435 NB	LT.	EXIST. SHLDR. AT BR. A1682	1	765 L.F. FULL DEPTH SAW CUT
18.041	18.216	I-435 NB	RT.	EXIST. SHLDR. AT BR. A1682	1	770 L.F. FULL DEPTH SAW CUT
36.960	37.142	I-435 SB	LT.	EXIST. SHLDR. AT BR. A1682	1	800 L.F. FULL DEPTH SAW CUT
36.968	37.170	I-435 SB	RT.	EXIST. SHLDR. AT BR. A1682	1	910 L.F. FULL DEPTH SAW CUT
14.471	14.656	I-435 NB	LT.	EXIST. SHLDR. AT BR. A1698	1	800 L.F. FULL DEPTH SAW CUT
14.450	14.675	I-435 NB	RT.	EXIST. SHLDR. AT BR. A1698	1	1010 L.F. FULL DEPTH SAW CUT
40.455	40.683	I-435 SB	LT.	EXIST. SHLDR. AT BR. A1698	1	1025 L.F. FULL DEPTH SAW CUT
40.497	40.705	I-435 SB	RT.	EXIST. SHLDR. AT BR. A1698	1	915 L.F. FULL DEPTH SAW CUT
17.891	17.948	I-435 NB	LT.	EXIST. SHLDR. AT BR. A1683	1	300 L.F. FULL DEPTH SAW CUT
17.722	17.802	I-435 NB	LT.	EXIST. SHLDR. AT BR. A1683	1	425 L.F. FULL DEPTH SAW CUT
17.891	17.948	I-435 NB	RT.	EXIST. SHLDR. AT BR. A1683	1	300 L.F. FULL DEPTH SAW CUT
17.664	17.802	I-435 NB	RT.	EXIST. SHLDR. AT BR. A1683	1	730 L.F. FULL DEPTH SAW CUT
17.297	17.392	I-435 NB	LT.	EXIST. SHLDR. AT BR. A1685	1	500 L.F. FULL DEPTH SAW CUT
16.981	17.130	I-435 NB	LT.	EXIST. SHLDR. AT BR. A1685	1	785 L.F. FULL DEPTH SAW CUT
16.727	16.771	I-435 NB	LT.	EXIST. SHLDR. AT BR. A1686	1	230 L.F. FULL DEPTH SAW CUT
37.311	37.349	I-435 SB	LT.	EXIST. SHLDR. AT BR. A1683	1	200 L.F. FULL DEPTH SAW CUT
37.450	37.531	I-435 SB	LT.	EXIST. SHLDR. AT BR. A1683	1	430 L.F. FULL DEPTH SAW CUT
37.220	37.347	I-435 SB	RT.	EXIST. SHLDR. AT BR. A1683	1	670 L.F. FULL DEPTH SAW CUT
37.450	37.495	I-435 SB	RT.	EXIST. SHLDR. AT BR. A1683	1	240 L.F. FULL DEPTH SAW CUT
17.297	17.392	I-435 NB	RT.	EXIST. SHLDR. AT BR. A1685	1	500 L.F. FULL DEPTH SAW CUT
16.978	17.130	I-435 NB	RT.	EXIST. SHLDR. AT BR. A1685	1	800 L.F. FULL DEPTH SAW CUT
16.707	16.771	I-435 NB	RT.	EXIST. SHLDR. AT BR. A1686	1	340 L.F. FULL DEPTH SAW CUT
37.055	40.645	I-435 SB/NB	RT./LT.	EXIST. SHLDR. AT BRIDGES	1	8458 S.Y. ASPHALT PAVEMENT
14.464	14.575	I-435 NB	RT.	587.5' OF GUARDRAIL	1	REPLACE GUARDRAIL
14.539	14.575	I-435 NB	LT.	187.5' OF GUARDRAIL	1	REPLACE GUARDRAIL
14.609	14.633	I-435 NB	LT.	125' OF GUARDRAIL	1	REPLACE GUARDRAIL
16.305	16.310	I-435 NB	RT.	25' OF GUARDRAIL	1	REPLACE GUARDRAIL
38.847	38.883	I-435 SB	LT.	187.5' OF GUARDRAIL	1	REPLACE GUARDRAIL
38.917	38.964	I-435 SB	RT.	250' OF GUARDRAIL	1	REPLACE GUARDRAIL
40.578	40.611	I-435 SB	LT.	175' OF GUARDRAIL	1	REPLACE GUARDRAIL
40.645	40.730	I-435 SB	RT.	450' OF GUARDRAIL	1	REPLACE GUARDRAIL
40.645	40.671	I-435 SB	LT.	137.5' OF GUARDRAIL	1	REPLACE GUARDRAIL
		RTE. 78	WB	83 S.Y. SLOPE PROTECTION	1	CONCRETE SLOPE PROTECTION REPAIR
		RTE. 78	WB	30' CURB	1	CURB REPAIR
<b>PAY TOTAL</b>					<b>1 LUMP SUM</b>	

MOBILIZATION  
1 LUMP SUM

NOTE: PERMANENT PAVEMENT MARKING AND RUMBLE STRIP TO COMPLETED AFTER PAVEMENT RESURFACING. QUANTITIES PROVIDED IN RESURFACING PROJECT J413038C.

1 ADDED

1 REVISED  
13711

CONCRETE APPROACH PAVEMENT				
BEG. LOG	END LOG	LOCATION	CONCRETE APPROACH PAVEMENT, S.Y.	REMARKS
16.304	16.307	I-435 NB	96.7	BR. A17504
16.349	16.352	I-435 NB	96.7	BR. A17504
38.875	38.878	I-435 SB	96.7	BR. A17505
38.922	38.925	I-435 SB	96.7	BR. A17505
<b>PAY TOTAL</b>			<b>386.7</b>	

RELOCATION OF EXISTING SIGN ASSEMBLIES				
LOG MILE	LOCATION	OFFSET	RELOCATION OF EXISTING SIGN ASSEMBLIES EACH	SIGN DESCRIPTION
16.23	I-435 NB BR. A1750	RT.	1	VERTICAL CLEARANCE SIGNS
38.78	I-435 SB BR. A1750	RT.	1	VERTICAL CLEARANCE SIGNS
<b>PAY TOTAL</b>			<b>2</b>	

CONCRETE SLOPE PROTECTION AND CURB REPAIR			
LOCATION	CONCRETE SLOPE PROTECTION S.Y.	CONCRETE CURB, TYPE S FT.	REMARKS
RTE. 78 WB	83	30	REPAIR BROKEN SECTION UNDER BR. A1698 NORTH SIDE
<b>PAY TOTAL</b>		<b>83</b>	<b>30</b>

SUMMARY SHEET  
SHEET 1 OF 4

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

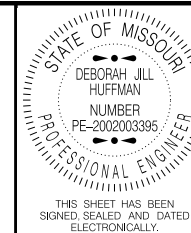


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# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## SUMMARY OF QUANTITIES



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

DATE PREPARED  
8/11/2015

ROUTE I-435 STATE MO  
DISTRICT KC SHEET NO. 3

COUNTY JACKSON  
JOB NO. J413022B  
CONTRACT ID.

OPTIONAL SHOULDER									
LOG MILE	LOG MILE	DIRECTION	LOCATION	TRAFFIC CONTROL STAGE	LENGTH FT.	WIDTH FOR SHOULDER FT.	AREA S.F.	OPTIONAL PAVEMENT 6.5" S.Y.	REMARKS
16.211	16.310	NB	RTE. 24	STAGE 1	525.0	4	2100.0	233.3	REBUILD INSIDE SHOULDER
16.344	16.475	NB	RTE. 24	STAGE 1	690.0	4	2760.0	306.7	REBUILD INSIDE SHOULDER
16.250	16.310	NB	RTE. 24	STAGE 2	315.0	10	3150.0	350.0	REBUILD OUTSIDE SHOULDER
16.344	16.448	NB	RTE. 24	STAGE 2	550.0	10	5500.0	611.1	REBUILD OUTSIDE SHOULDER
18.045	18.140	NB	FRONT ST.	STAGE 1	500.0	4	2000.0	222.2	REBUILD INSIDE SHOULDER
18.170	18.220	NB	FRONT ST.	STAGE 1	265.0	4	1060.0	117.8	REBUILD INSIDE SHOULDER
18.041	18.140	NB	FRONT ST.	STAGE 2	525.0	10	5250.0	583.3	REBUILD OUTSIDE SHOULDER
18.170	18.216	NB	FRONT ST.	STAGE 2	245.0	10	2450.0	272.2	REBUILD OUTSIDE SHOULDER
14.471	14.575	NB	RTE. 78	STAGE 1	550.0	4	2200.0	244.4	REBUILD INSIDE SHOULDER
14.609	14.656	NB	RTE. 78	STAGE 1	250.0	4	1000.0	111.1	REBUILD INSIDE SHOULDER
14.450	14.575	NB	RTE. 78	STAGE 2	660.0	10	6600.0	733.3	REBUILD OUTSIDE SHOULDER
14.609	14.675	NB	RTE. 78	STAGE 2	350.0	10	3500.0	388.9	REBUILD OUTSIDE SHOULDER
38.769	38.883	SB	RTE. 24	STAGE 1	600.0	4	2400.0	266.7	REBUILD INSIDE SHOULDER
38.917	38.974	SB	RTE. 24	STAGE 1	300.0	4	1200.0	133.3	REBUILD INSIDE SHOULDER
38.760	38.883	SB	RTE. 24	STAGE 2	650.0	10	6500.0	722.2	REBUILD OUTSIDE SHOULDER
38.917	38.972	SB	RTE. 24	STAGE 2	290.0	10	2900.0	322.2	REBUILD OUTSIDE SHOULDER
36.960	37.055	SB	FRONT ST.	STAGE 1	500.0	4	2000.0	222.2	REBUILD INSIDE SHOULDER
37.085	37.142	SB	FRONT ST.	STAGE 1	300.0	4	1200.0	133.3	REBUILD INSIDE SHOULDER
36.968	37.055	SB	FRONT ST.	STAGE 2	460.0	10	4600.0	511.1	REBUILD OUTSIDE SHOULDER
37.085	37.170	SB	FRONT ST.	STAGE 2	450.0	10	4500.0	500.0	REBUILD OUTSIDE SHOULDER
40.455	40.611	SB	RTE. 78	STAGE 1	825.0	4	3300.0	366.7	REBUILD INSIDE SHOULDER
40.645	40.683	SB	RTE. 78	STAGE 1	200.0	4	800.0	88.9	REBUILD INSIDE SHOULDER
40.497	40.611	SB	RTE. 78	STAGE 2	600.0	10	6000.0	666.7	REBUILD OUTSIDE SHOULDER
40.645	40.705	SB	RTE. 78	STAGE 2	315.0	10	3150.0	350.0	REBUILD OUTSIDE SHOULDER
17.891	17.948	NB	BR. A1683	STAGE 1	300.0	4	1200.0	133.3	REBUILD INSIDE SHOULDER
17.722	17.802	NB	BR. A1683	STAGE 1	425.0	4	1700.0	188.9	REBUILD INSIDE SHOULDER
17.891	17.948	NB	BR. A1683	STAGE 2	300.0	10	3000.0	333.3	REBUILD OUTSIDE SHOULDER
17.664	17.802	NB	BR. A1683	STAGE 2	730.0	10	7300.0	811.1	REBUILD OUTSIDE SHOULDER
17.297	17.392	NB	BR. A1685	STAGE 1	500.0	4	2000.0	222.2	REBUILD INSIDE SHOULDER
16.981	17.130	NB	BR. A1685	STAGE 1	785.0	4	3140.0	348.9	REBUILD INSIDE SHOULDER
16.727	16.771	NB	BR. A1686	STAGE 1	230.0	4	920.0	102.2	REBUILD INSIDE SHOULDER
37.311	37.349	SB	BR. A1683	STAGE 1	200.0	4	800.0	88.9	REBUILD INSIDE SHOULDER
37.450	37.531	SB	BR. A1683	STAGE 1	430.0	4	1720.0	191.1	REBUILD INSIDE SHOULDER
37.220	37.347	SB	BR. A1683	STAGE 2	670.0	10	6700.0	744.4	REBUILD OUTSIDE SHOULDER
37.450	37.495	SB	BR. A1683	STAGE 2	240.0	10	2400.0	266.7	REBUILD OUTSIDE SHOULDER
17.297	17.392	NB	BR. A1685	STAGE 2	500.0	10	5000.0	555.6	REBUILD OUTSIDE SHOULDER
16.978	17.130	NB	BR. A1685	STAGE 2	800.0	10	8000.0	888.9	REBUILD OUTSIDE SHOULDER
16.707	16.771	NB	BR. A1686	STAGE 2	340.0	10	3400.0	377.8	REBUILD OUTSIDE SHOULDER
<b>PAY TOTAL</b>								<b>13711.1</b>	

1 ADDED

PERMANENT GUARDRAIL											
BEG. LOG MILE	END LOG MILE	DIRECTION	LT./RT.	LOCATION	TYPE A GUARDRAIL L.F.	TYPE A GUARDRAIL (7 FT. POSTS) L.F.	ASYMETRICAL TRANSITION SECTION (6.5 FT. POSTS) EACH	ASYMETRICAL TRANSITION SECTION (7.5 FT. POSTS) EACH	BRIDGE ANCHOR SECTION EACH	TYPE A CRASHWORTHY END TERMINAL EACH	REMARKS
14.464	14.575	I-435 NB	RT.	RTE. 78		587.5		1	1	1	BR. A16984 SOUTH END
14.539	14.575	I-435 NB	LT.	RTE. 78	187.5		1		1	1	BR. A16984 SOUTH END
14.609	14.633	I-435 NB	LT.	RTE. 78	125.0		1		1	1	BR. A16984 NORTH END
16.305	16.310	I-435 NB	RT.	RTE. 24	25.0		1				BR. A17505 SOUTH END - DAMAGED GUARDRAIL
38.847	38.883	I-435 SB	LT.	RTE. 24	187.5		1		1	1	BR. A17505 NORTH END
38.917	38.964	I-435 SB	RT.	RTE. 24	250.0		1		1		BR. A17505 SOUTH END TO THRIE BEAM SECTION
40.578	40.611	I-435 SB	LT.	RTE. 78	175.0		1		1	1	BR. A16984 NORTH END
40.645	40.730	I-435 SB	RT.	RTE. 78	450.0		1		1	1	BR. A16984 SOUTH END
40.645	40.671	I-435 SB	LT.	RTE. 78	137.5		1		1	1	BR. A16984 SOUTH END
<b>TOTAL</b>					<b>1537.5</b>	<b>587.5</b>	<b>8</b>	<b>1</b>	<b>8</b>	<b>7</b>	
<b>PAY TOTAL</b>					<b>1538</b>	<b>588</b>	<b>8</b>	<b>1</b>	<b>8</b>	<b>7</b>	

SUMMARY SHEET  
SHEET 2 OF 4

DESCRIPTION

DATE

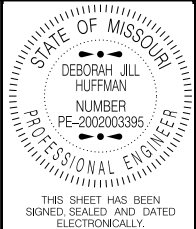
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION



REV.

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## SUMMARY OF QUANTITIES



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
6/17/2015

ROUTE	STATE
I-435	MO
DISTRICT	SHEET NO.
KC	3

COUNTY  
JACKSON

JOB NO.  
J413022B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

TEMPORARY PAVEMENT MARKING						
SHEET	LOG MILE	LOG MILE	LOCATION	4" YELLOW ACRYLIC WATERBORNE LIN. FT.	4" WHITE ACRYLIC WATERBORNE LIN. FT.	REMARKS
10	36.801	36.99	I-435 SB	1000	1700	PHASE 1
11	36.99	37.255	I-435 SB	1475	2950	PHASE 1
11	18.015	18.214	I-435 NB	1050	2100	PHASE 1
12	37.261	37.526	I-435 SB	1400	2800	PHASE 1
12	17.712	17.977	I-435 NB	1400	2800	PHASE 1
13	37.526	37.535	I-435 SB	50	100	PHASE 1
13	17.939	17.977	I-435 NB	200	400	PHASE 1
14	17.146	17.411	I-435 NB	1400	2800	PHASE 1
15	16.881	17.146	I-435 NB	1400	2800	PHASE 1
16	16.616	16.881	I-435 NB	1400	2800	PHASE 1
17	38.637	38.804	I-435 SB	880	1760	PHASE 1
17	16.422	16.498	I-435 NB	400	800	PHASE 1
18	38.804	38.993	I-435 SB	1000	2000	PHASE 1
18	16.157	16.422	I-435 NB	1400	2800	PHASE 1
19	15.996	16.157	I-435 NB	850	1500	PHASE 1
20	36.82	36.99	I-435 SB	900	750	PHASE 2
21	36.99	37.255	I-435 SB	1475	2950	PHASE 2
21	18.015	18.214	I-435 NB	1050	2100	PHASE 2
22	37.261	37.526	I-435 SB	1400	2800	PHASE 2
22	17.712	17.977	I-435 NB	1400	2800	PHASE 2
23	17.57	17.712	I-435 NB	750	1500	PHASE 2
24	17.146	17.411	I-435 NB	1400	2800	PHASE 2
25	16.881	17.146	I-435 NB	1400	2800	PHASE 2
26	16.616	16.881	I-435 NB	1400	2800	PHASE 2
27	38.577	38.804	I-435 SB	1200	2400	PHASE 2
27	16.422	16.687	I-435 NB	1400	2800	PHASE 2
28	38.804	39.031	I-435 SB	1200	2400	PHASE 2
28	16.157	16.422	I-435 NB	1400	2800	PHASE 2
29	15.996	16.157	I-435 NB	850	850	PHASE 2
30	40.326	40.496	I-435 SB	900	1800	PHASE 3
31	40.496	40.685	I-435 SB	1000	2000	PHASE 3
31	14.454	14.643	I-435 NB	1000	2000	PHASE 3
32	14.284	14.454	I-435 NB	900	1800	PHASE 3
33	40.326	40.496	I-435 SB	900	1800	PHASE 4
34	40.496	40.666	I-435 SB	900	1800	PHASE 4
34	14.454	14.624	I-435 NB	900	1800	PHASE 4
35	14.284	14.454	I-435 NB	900	1800	PHASE 4
PAY TOTAL				39930	77460	

PAVEMENT MARKING REMOVAL						
SHEET	LOG MILE	LOG MILE	LOCATION	EXIST. PAVEMENT MARKING LIN. FT.	TEMP. PAVEMENT MARKING LIN. FT.	REMARKS
10	36.801	36.99	I-435 SB	2700	2700	PHASE 1
11	36.99	37.255	I-435 SB	4425	4425	PHASE 1
11	18.015	18.214	I-435 NB	3150	3150	PHASE 1
12	37.261	37.526	I-435 SB	4200	4200	PHASE 1
12	17.712	17.977	I-435 NB	4200	4200	PHASE 1
13	37.526	37.535	I-435 SB	150	150	PHASE 1
13	17.939	17.977	I-435 NB	600	600	PHASE 1
14	17.146	17.411	I-435 NB	4200	4200	PHASE 1
15	16.881	17.146	I-435 NB	4200	4200	PHASE 1
16	16.616	16.881	I-435 NB	4200	4200	PHASE 1
17	38.637	38.804	I-435 SB	2640	2640	PHASE 1
17	16.422	16.498	I-435 NB	1200	1200	PHASE 1
18	38.804	38.993	I-435 SB	3000	3000	PHASE 1
18	16.157	16.422	I-435 NB	4200	4200	PHASE 1
19	15.996	16.157	I-435 NB	2350	2350	PHASE 1
20	36.820	36.99	I-435 SB	1650	1650	PHASE 2
21	36.99	37.255	I-435 SB	4425	4425	PHASE 2
21	18.015	18.214	I-435 NB	3150	3150	PHASE 2
22	37.261	37.526	I-435 SB	4200	4200	PHASE 2
22	17.712	17.977	I-435 NB	4200	4200	PHASE 2
23	17.57	17.712	I-435 NB	2250	2250	PHASE 2
24	17.146	17.411	I-435 NB	4200	4200	PHASE 2
25	16.881	17.146	I-435 NB	4200	4200	PHASE 2
26	16.616	16.881	I-435 NB	4200	4200	PHASE 2
27	38.577	38.804	I-435 SB	3600	3600	PHASE 2
27	16.422	16.687	I-435 NB	4200	4200	PHASE 2
28	38.804	39.031	I-435 SB	3600	3600	PHASE 2
28	16.157	16.422	I-435 NB	4200	4200	PHASE 2
29	15.996	16.157	I-435 NB	1700	1700	PHASE 2
30	40.326	40.496	I-435 SB	2700	2700	PHASE 3
31	40.496	40.685	I-435 SB	3000	3000	PHASE 3
31	14.454	14.643	I-435 NB	3000	3000	PHASE 3
32	14.284	14.454	I-435 NB	2700	2700	PHASE 3
33	40.326	40.496	I-435 SB	2700	2700	PHASE 4
34	40.496	40.666	I-435 SB	2700	2700	PHASE 4
34	14.454	14.624	I-435 NB	2700	2700	PHASE 4
35	14.284	14.454	I-435 NB	2700	2700	PHASE 4
TOTAL				117390	117390	
PAY TOTAL					234780	

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION



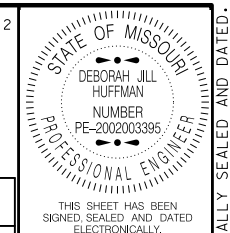
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.

Table with columns: SIZE (IN.), AREA (SQ. FT.), QTY, TOTAL AREA, RELOC, SIGN, DESCRIPTION. Includes sections for WARNING SIGNS, GUIDE SIGNS, REGULATORY SIGNS, and MISCELLANEOUS SIGNS.

Table with columns: SIGN, SIZE (IN.), AREA (SQ. FT.), QTY, TOTAL AREA, RELOC, RELOC AREA, DESCRIPTION. Includes sections for GUIDE SIGNS, REGULATORY SIGNS, and MISCELLANEOUS SIGNS.

Table with columns: ITEM NUMBER, TOTAL QTY, DESCRIPTION. Lists various items like IMPACT ATTENUATOR, CHANNELIZER, and BARRICADE with their respective quantities.

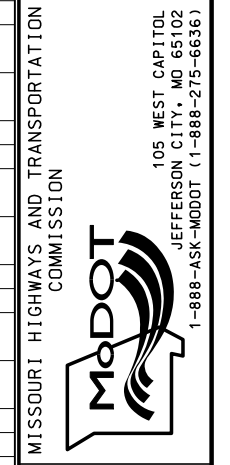


DATE PREPARED: 6/17/2015. ROUTE: I-435, STATE: MO, DISTRICT: KC, SHEET NO.: 3.

COUNTY: JACKSON. JOB NO.: J413022B. CONTRACT ID.

PROJECT NO. BRIDGE NO.

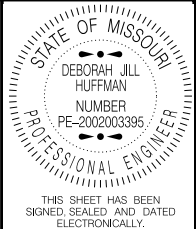
Table with columns: DESCRIPTION, DATE. Lists various items and their dates.



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.

# Sign Spacing, Device Spacing, Channelizing Taper Lengths And Recommended Maximum Speed Reductions



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

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		THROUGH TAPER	THROUGH WORK AREA
0-35	205 FT	225 FT	245 FT	70	35 FT	50 FT
40-45	450 FT	495 FT	540 FT	150	40 FT	100 FT
50-55	550 FT	605 FT	660 FT	185	50 FT	100 FT
60-70	700 FT	770 FT	840 FT	235	60 FT	100 FT

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

LONGITUDINAL BUFFER SPACE	
SPEED (P) MPH	BUFFER SPACE (FEET)
0-35	250
40-45	360
50-55	495
60-70	730

DATE PREPARED 6/11/2015	
ROUTE I-435	STATE MO
DISTRICT KC	SHEET NO. 4
COUNTY JACKSON	
JOB NO. J413022B	
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.

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)

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.	

TAPER LENGTHS AND END TREATMENTS FOR CONCRETE BARRIER				
SPEED (P) MPH	MINIMUM TAPER LENGTHS FOR LANE WIDTHS (3)			END TREATMENT (4)
	10 FT	11 FT	12 FT	
<40	160 FT	168 FT	176 FT	BARRIER HEIGHT TRANSITION
≥40	160 FT	168 FT	176 FT	APPROVED CRASH CUSHION

- NOTES:
- DIMENSIONS IN FEET UNLESS OTHERWISE NOTED.
- SPACING BETWEEN SIGNS AND SPACING BETWEEN LAST SIGN AND FLAGGER, BEGINNING OF TAPER, OR SIGNED CONDITION
  - SPACINGS MAY BE ADJUSTED AS NECESSARY TO MEET FIELD CONDITIONS
  - TAPER LENGTHS SHOWN INCLUDE LENGTH REQUIRED FOR LANE AND 10' SHOULDER.
  - CONCRETE BARRIER MAY BE INSTALLED AT AN 8:1 FLARE RATE FROM THE SHOULDER POINT TO THE LIMITS OF THE CLEAR ZONE WHERE THEY SIDE SLOPE IS 6:1 OR FLATTER.

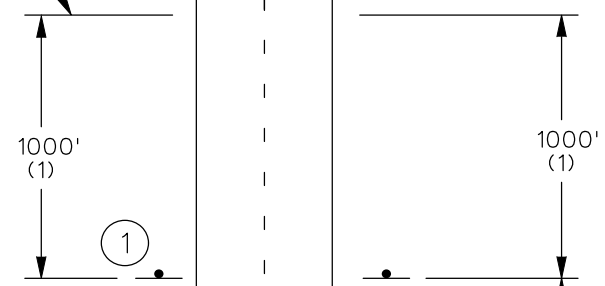
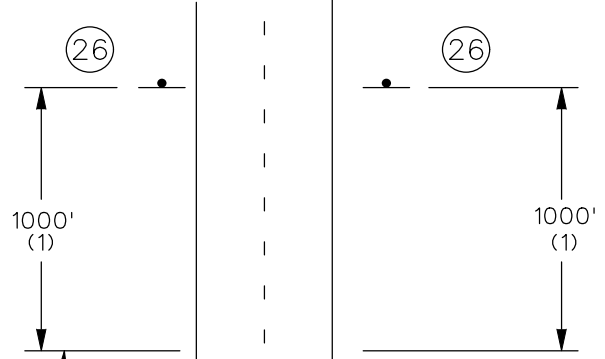
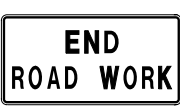
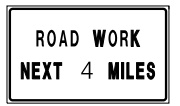
- GENERAL NOTES:
- SEE STANDARD PLAN 616.10 FOR DETAILS AND ITEMS NOT SHOWN
  - EXISTING SIGNS SHALL BE COVERED DURING WORKING HOURS ONLY IF IN CONFLICT WITH TRAFFIC CONTROL PLANS.
  - NO DIRECT PAYMENT WILL BE MADE FOR RELOCATING, COVERING, UNCOVERING OR REMOVING SIGNS.
  - CONES ALLOWABLE FOR DAYTIME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

\* TRAFFIC CONTROL PLAN DESIGNED FOR PROJECTS J413022B AND J413028B, TO BE LET IN COMBINATION.

DEVICE SPACING  
TEMPORARY TRAFFIC CONTROL  
SHEET 1 OF 34

END OF PROJECT LIMITS; END OF WORK ZONE TERMINATION AREA, IF LOCATED BEYOND END OF PROJECT; OR LAST WORK ZONE SIGN, IF LOCATED OUTSIDE PROJECT LIMITS.

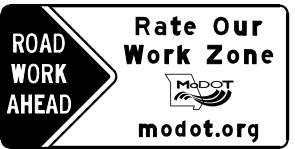
BEGINNING OF PROJECT LIMITS; OR INITIAL WORK ZONE SIGN, IF LOCATED OUTSIDE PROJECT LIMITS.



MULTI-LANE DIVIDED  
BEGIN/END OF PROJECT SIGNING  
(FOR USE ON ALL PROJECTS)



CONST-5-96 (3)



CONST-7-72 (2)

- NOTES:
- SIGN (1) IS REQUIRED PER EPG 616.6.56.
  - SIGN (26) IS USED ON ALL PROJECTS WHERE SIGN (1) IS USED.
  - OTHER SIGNS SUCH AS DETOUR OR ALTERNATE ROUTE SIGNING MAY BE USED OUTSIDE THE PROJECT LIMITS.
  - ANY EXISTING SIGNING THAT CONFLICTS WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED.
  - (1) DISTANCE MAY BE ADJUSTED ACCORDING TO FIELD CONDITIONS. WHERE TRAFFIC BACKUPS ARE EXPECTED BEYOND THE ADVANCE WARNING AREA, ADDITIONAL SIGNING MAY BE NEEDED.
  - (2) SIGN CONST-7-72 OR CONST-7-48 IS PLACED 500 FEET BEFORE THE BEGINNING OF PROJECT LIMITS OR THE ROAD WORK AHEAD SIGN OR ROAD WORK NEXT XX MILES SIGN, IF USED, WHEN THESE SIGNS ARE LOCATED OUTSIDE THE PROJECT LIMITS.
  - (3) SIGN CONST-5-96 IS PLACED IN A VISIBLE AREA WITHIN THE PROJECT LIMITS PROVIDED ITS PLACEMENT DOES NOT DISRUPT A SEQUENCE OF SIGNS. IF A VISIBLE LOCATION WITHIN THE PROJECT IS NOT AVAILABLE, THE SIGN MAY BE PLACED 500 FEET BEFORE SIGN CONST-7-72 OR CONST-7-48.
  - (4) THE "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 96 IN. X 48 IN. VERSION OF THE SIGN IS USED IN ALL OTHER APPLICATIONS. BUT CAN ALSO BE USED IN PLACE OF THE 48 IN. X 36 IN. SIGN IF ADDED EMPHASIS IS DEEMED NECESSARY.

STATE OF MISSOURI  
DEBORAH JILL HUFFMAN  
NUMBER PE-202003395  
PROFESSIONAL ENGINEER

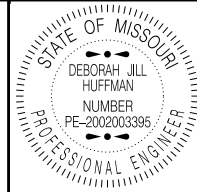
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 6/11/2015	
ROUTE I-435	STATE MO
DISTRICT KC	SHEET NO. 5
COUNTY JACKSON	
JOB NO. J413022B	
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.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 6/11/2015

ROUTE I-435 STATE MO  
DISTRICT KC SHEET NO. 6

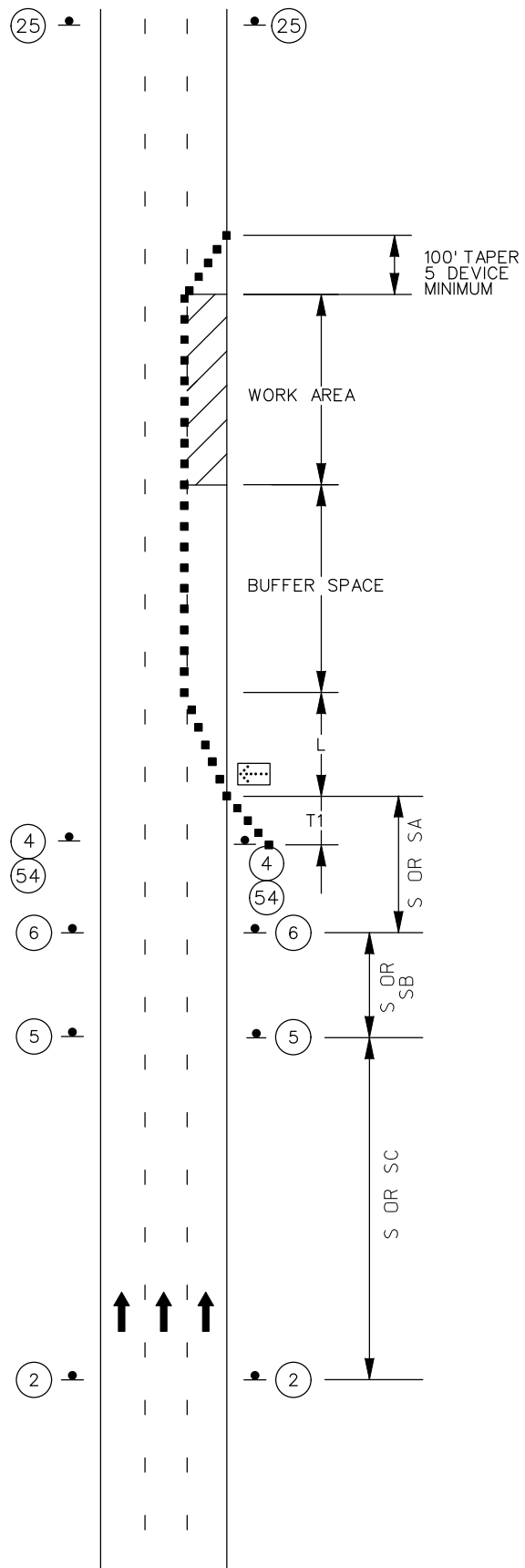
COUNTY JACKSON  
JOB NO. J413022B  
CONTRACT ID.

PROJECT NO.  
BRIDGE NO.

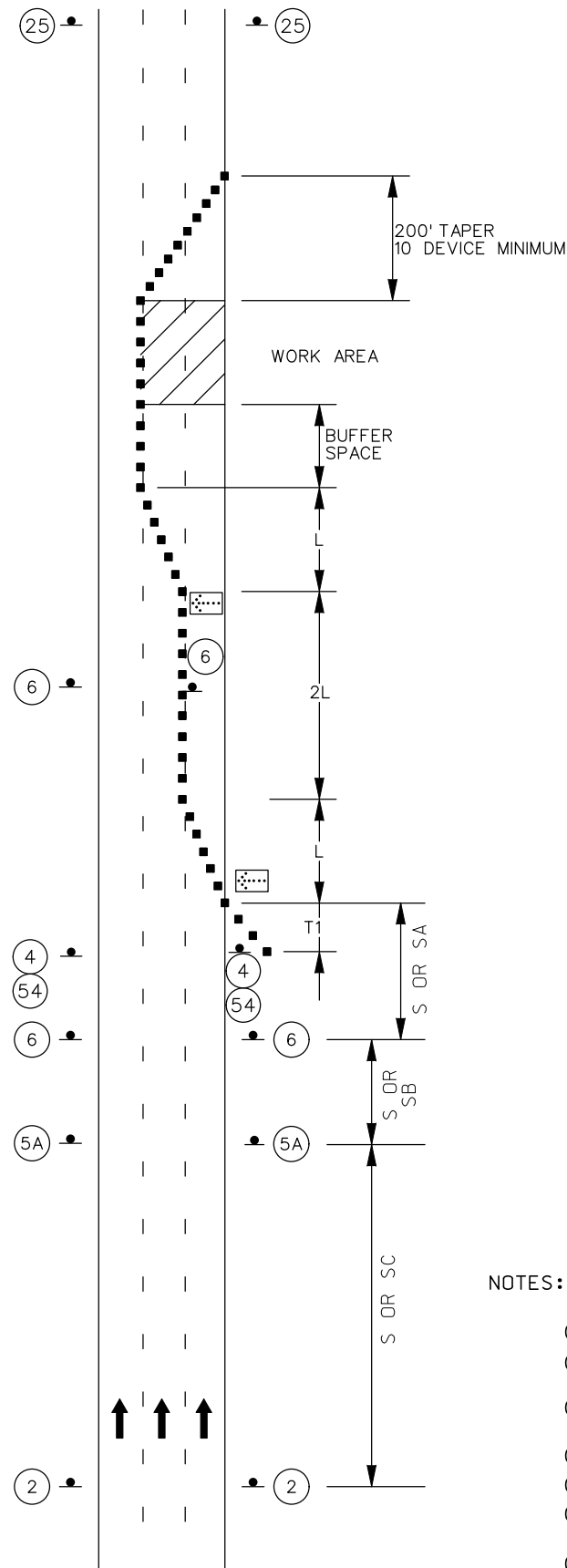
DATE	DESCRIPTION

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

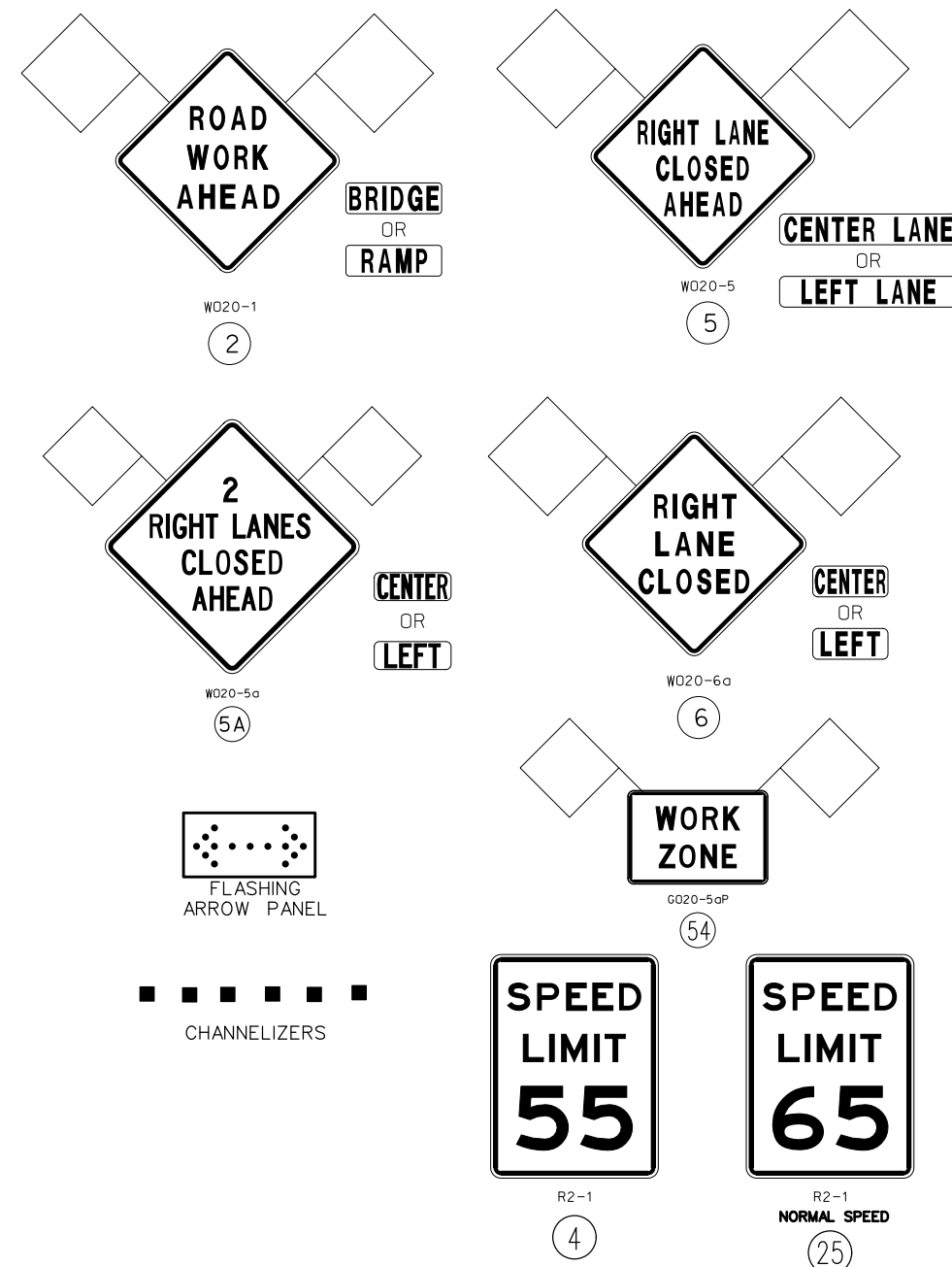
PHASE 0  
SHOULDER AND  
GUARDRAIL CONSTRUCTION  
LANE CLOSURE  
MULTI LANE  
TEMPORARY  
TRAFFIC CONTROL  
SHEET 3 OF 34



TYPICAL LEFT OR RIGHT LANE CLOSURE  
MULTI-LANE DIVIDED HIGHWAY



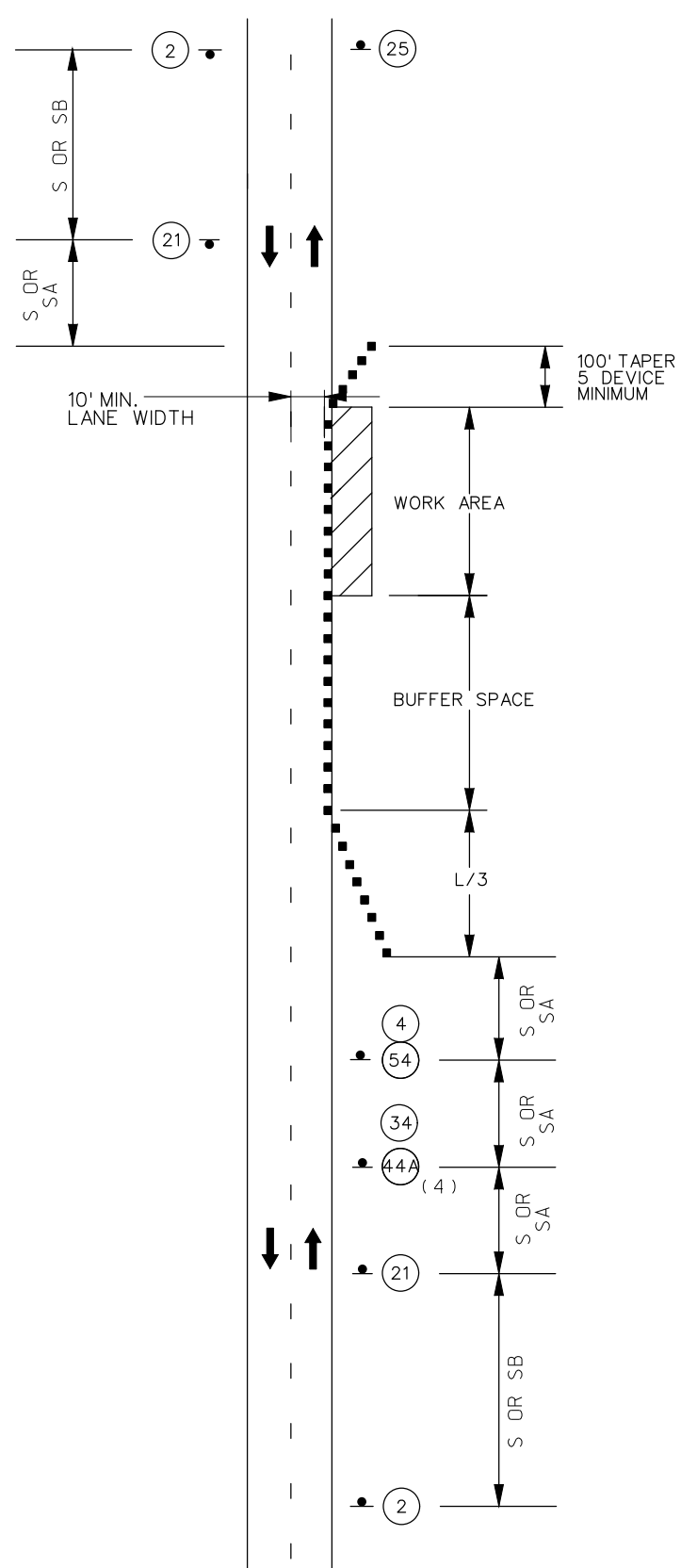
LANE CLOSURE TWO LANES OF  
MULTI-LANE DIVIDE HIGHWAY



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). SEE SHEET FIGURE 616.0.5, SHEET 2 OF 2, FOR A LANE CLOSURE WITH WIDTH RESTRICTION.
- (4). REMOVE AND/OR MODIFY ANY EXISTING PAVEMENT MARKING AS NEEDED.
- (5). TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM CLOSURES.
- (6). ALTERNATIVE TEMPORARY TRAFFIC CONTROL SET-UPS SHOULD BE CONSIDERED WHEN REDUCTION IN CAPACITY CANNOT BE TOLERATED.
- (7). SHOULDER REBUILD SHALL BE COMPLETED BEFORE EACH PHASE.

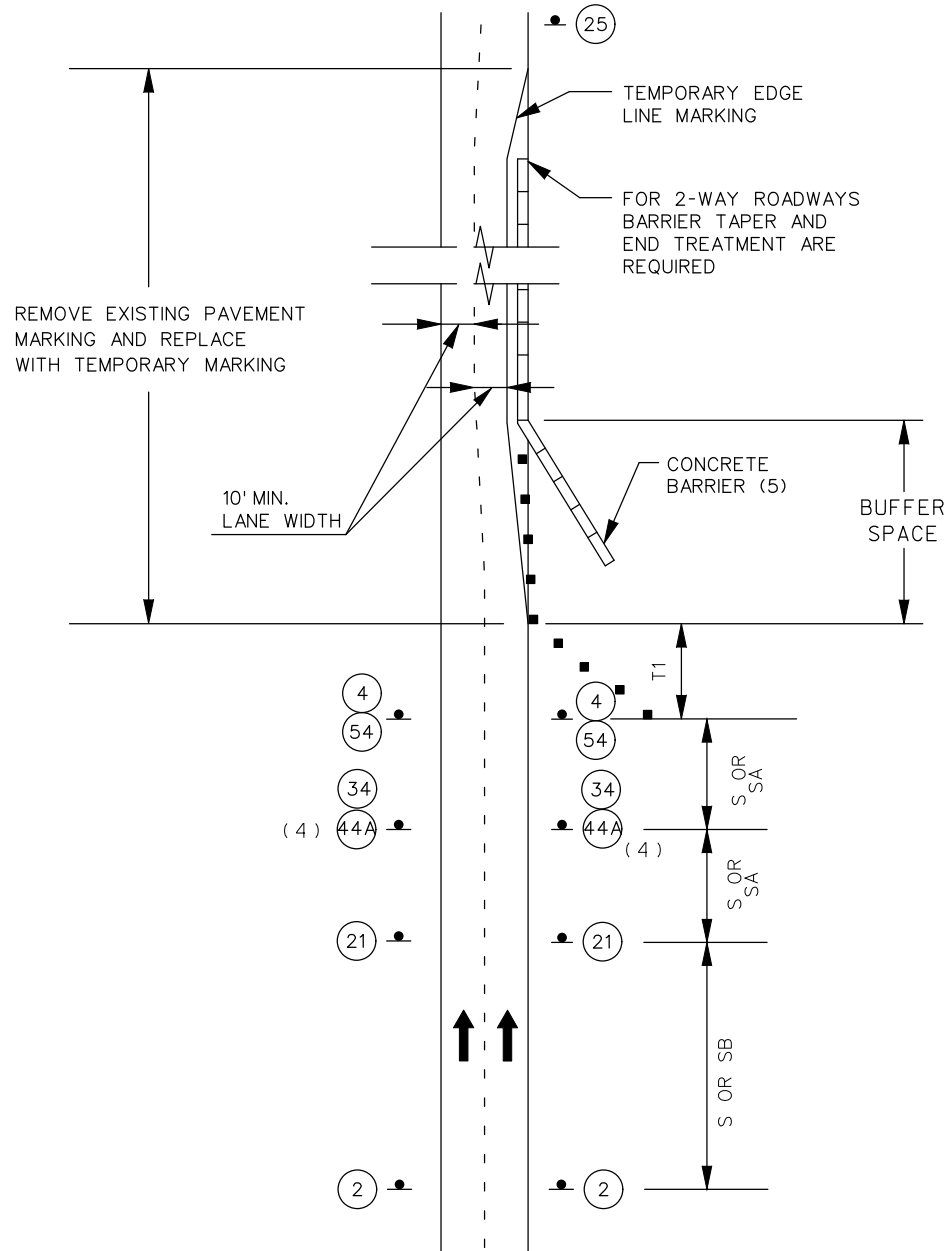
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



**SHOULDER WORK  
MINOR TRAVELWAY ENCROACHMENT**

**NOTES:**

PROVIDE SIGNS ON LEFT AND RIGHT SIDE OF DIVIDED HIGHWAYS.



**REDUCED LANE WIDTHS**

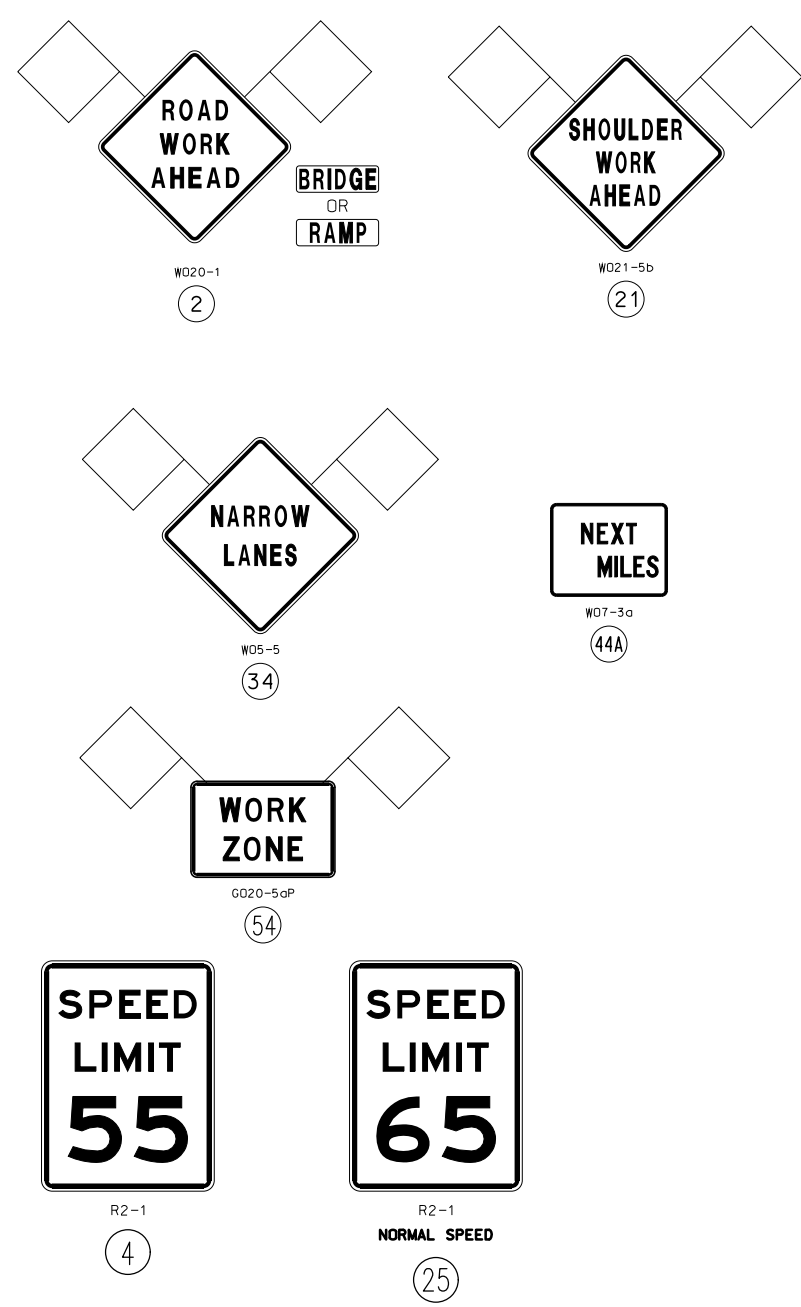
**NOTES:**

IF SHOULDER IS SUITABLE FOR CARRYING TRAFFIC, LANES MAY BE SHIFTED TO SHOULDER WITH APPROPRIATE PAVEMENT MARKING.

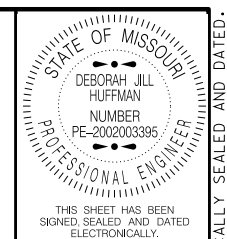
ON NON-DIVIDED HIGHWAYS, PROVIDE SIGNS ONLY ON THE RIGHT SIDE OF EACH APPROACH.

**GENERAL 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 SHOULDER WORK IS LOCATED WITHIN THE LIMITS OF AN ACTIVITY AREA WHERE ANOTHER SIGN 2 IS ALREADY USED.
- (4). SIGN 44A NOT REQUIRED FOR NARROW LANE SECTIONS LESS THAN ONE MILE.
- (5). FLARE BARRIER TO EXTEND BEYOND CLEAR ZONE OR FLARE BARRIER TO EDGE LINE AND USE APPROVED END TREATMENT.
- (6). SHOULDER REBUILD SHALL BE COMPLETED BEFORE EACH PHASE.



PHASE 0  
SHOULDER AND  
GUARDRAIL CONSTRUCTION  
SHOULDER WORK  
TEMPORARY  
TRAFFIC CONTROL  
SHEET 4 OF 34



DATE PREPARED  
6/11/2015

ROUTE  
I-435  
STATE  
MO  
DISTRICT  
KC  
SHEET NO.  
7

COUNTY  
JACKSON  
JOB NO.  
J413022B  
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

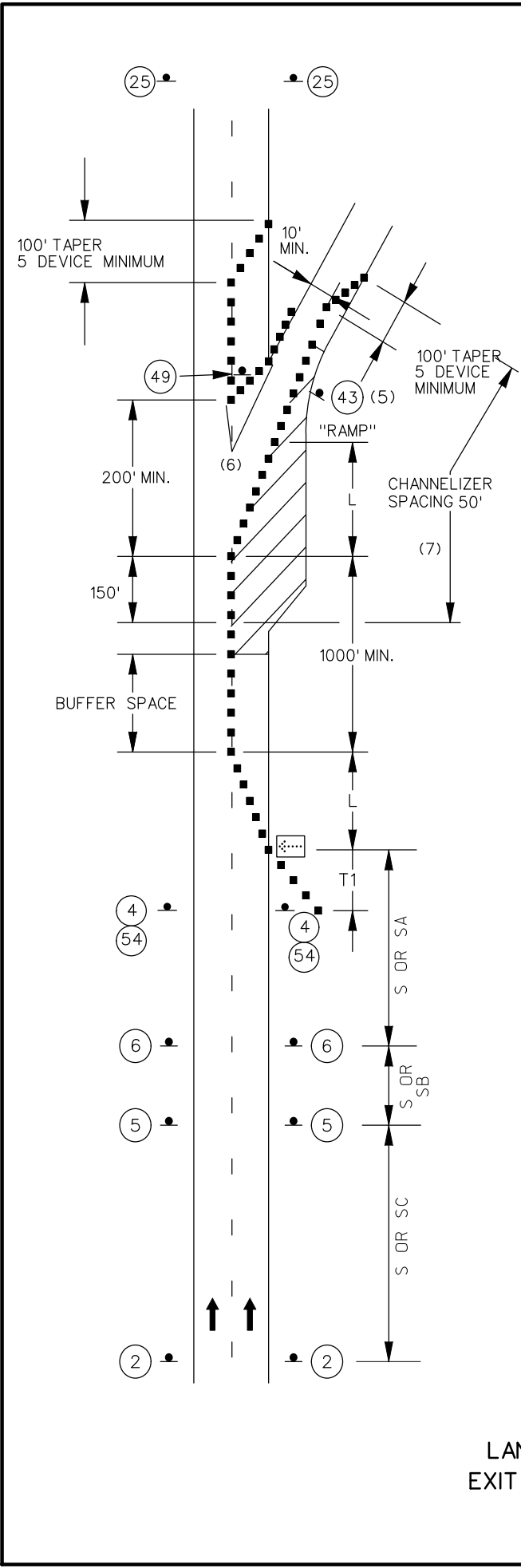
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

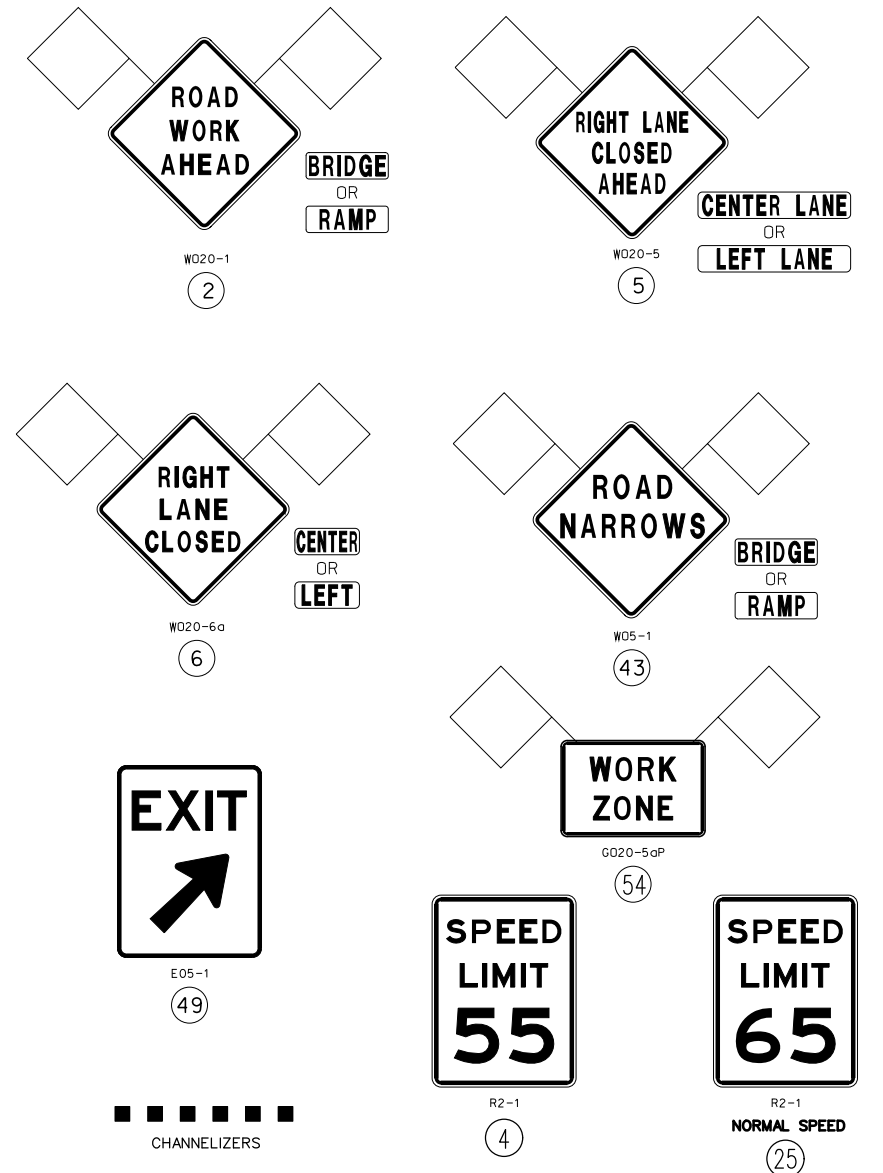
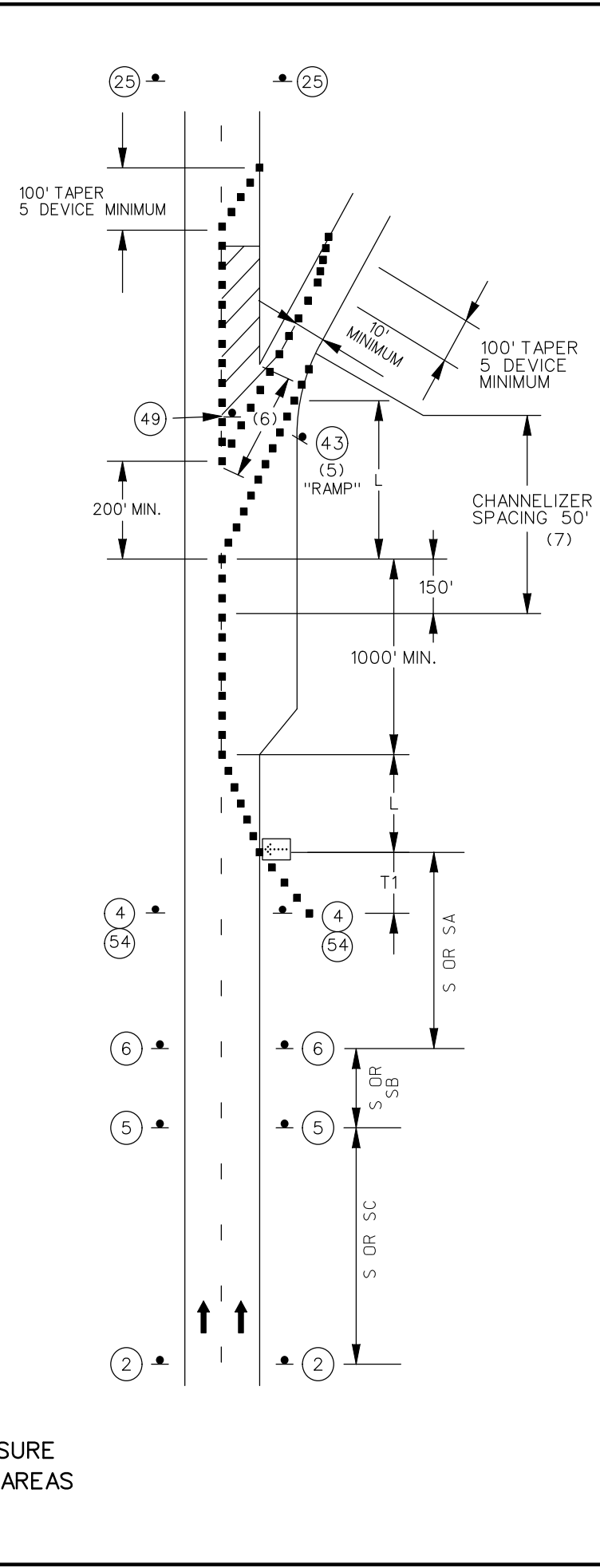


105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

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



LANE CLOSURE  
EXIT RAMP AREAS



- 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). REMOVE AND/OR MODIFY EXISTING PAVEMENT MARKING AS NEEDED.
  - (4). TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM LANE CLOSURES.
  - (5). SIGN (43) REQUIRED WHEN RAMP WIDTH IS REDUCED.
  - (6). FIVE DEVICE MINIMUM.
  - (7). FOR WORK ZONES WHERE DEVICES ARE IN PLACE OVERNIGHT, USE TRIM-LINE CHANNELIZERS.

LANE CLOSURE  
EXIT RAMP  
TEMPORARY  
TRAFFIC CONTROL  
SHEET 5 OF 34

STATE OF MISSOURI  
DEBORAH JILL HUFFMAN  
NUMBER PE-202003395  
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

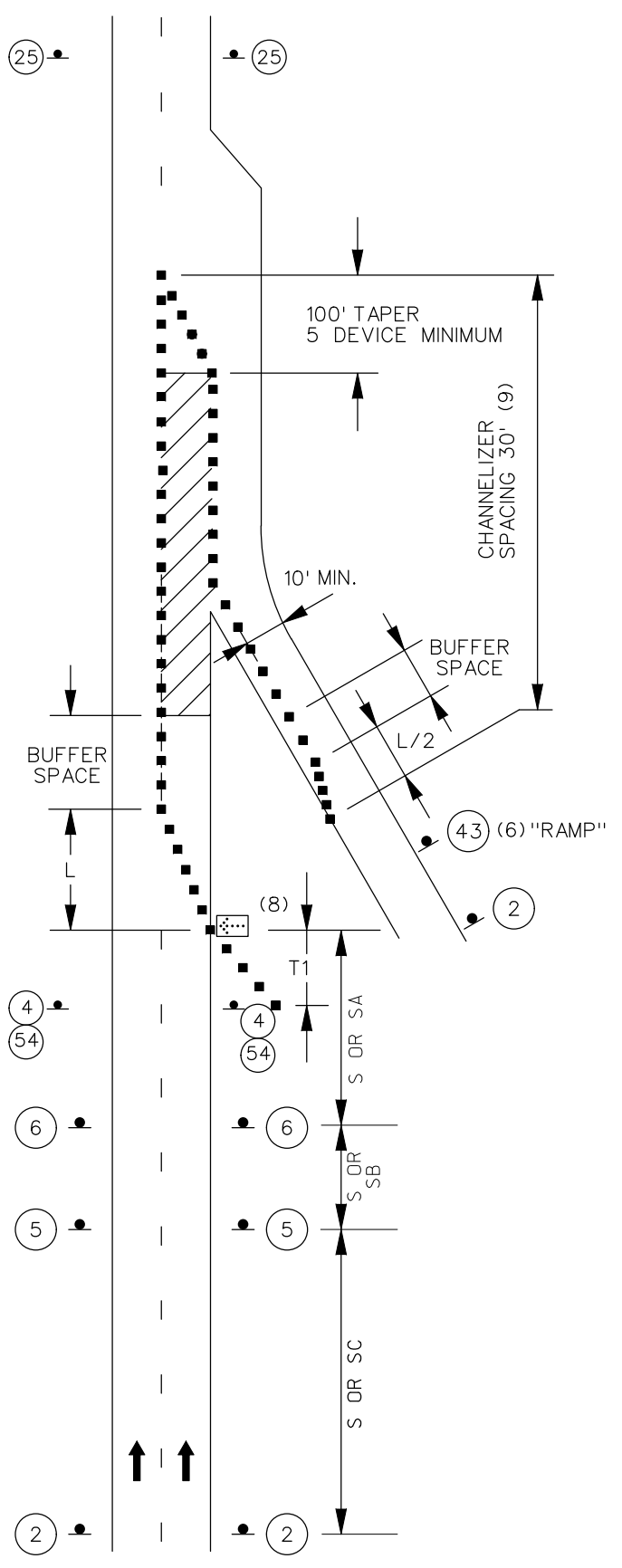
DATE PREPARED 6/11/2015	
ROUTE I-435	STATE MO
DISTRICT KC	SHEET NO. 8
COUNTY JACKSON	
JOB NO. J413022B	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

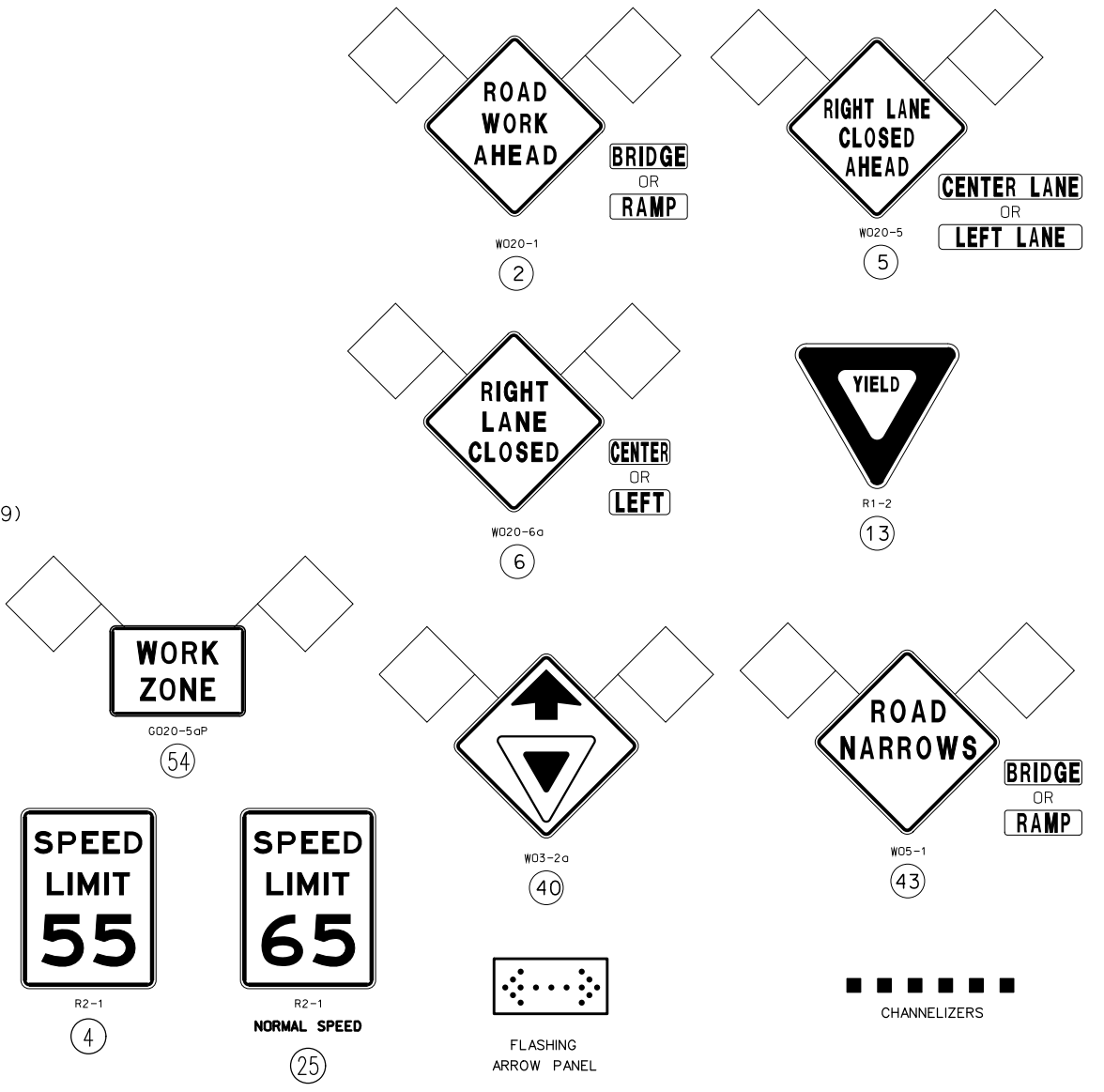
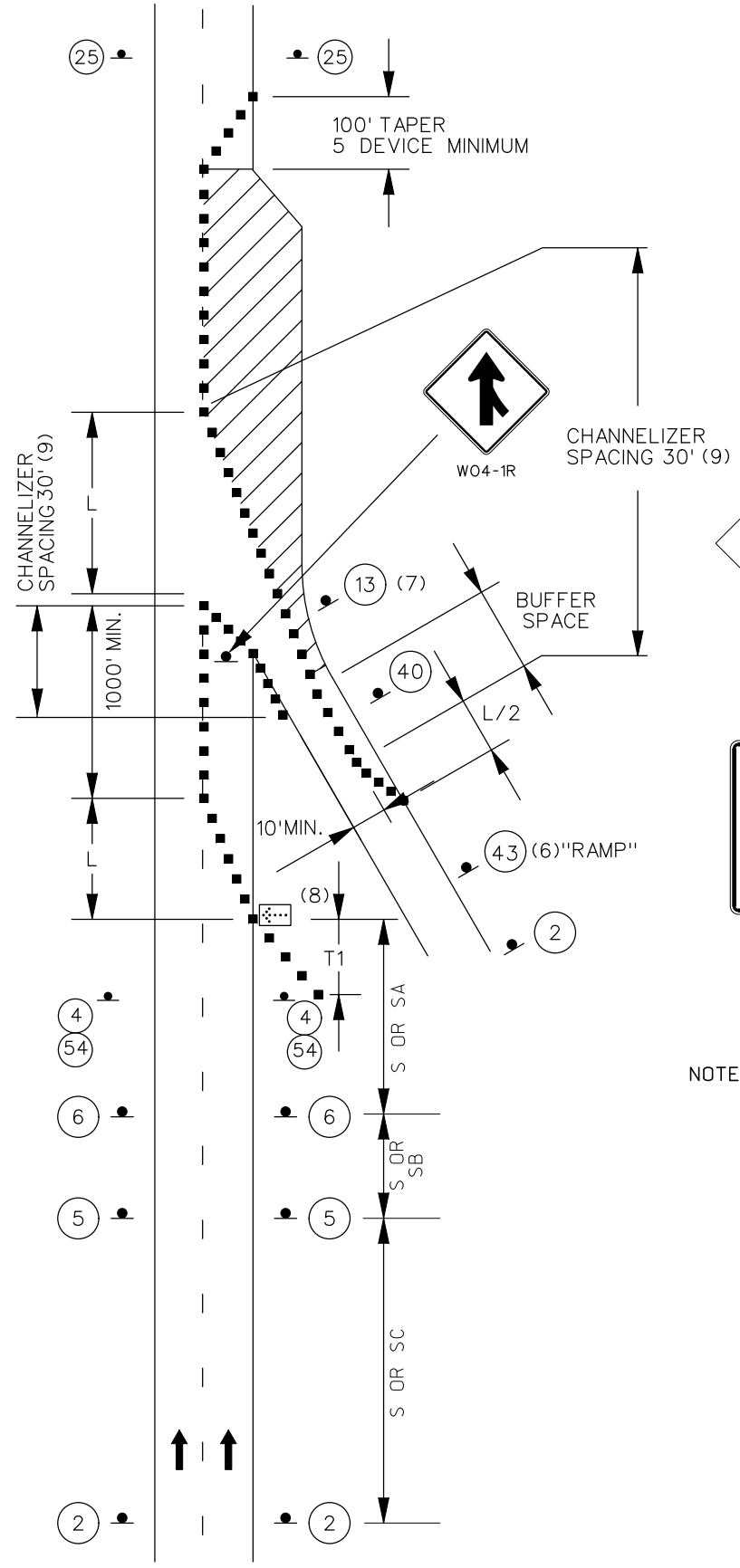
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

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



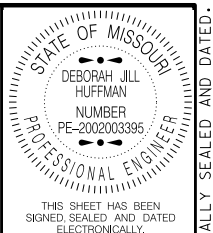


LANE CLOSURE  
ENTRANCE RAMP AREAS



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). REMOVE AND/OR MODIFY EXISTING PAVEMENT MARKING AS NEEDED.
- (4). TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM LANE CLOSURES.
- (5). FOR RAMPS WITH SHARP CURVES OR MULTIPLE LANES, RAMP SIGNS MAY BE PLACED ON BOTH SIDES OF THE RAMP.
- (6). SIGN (43) REQUIRED WHEN RAMP WIDTH IS REDUCED.
- (7). SIGN (13) SHOULD BE PLACED ON THE RAMP TO PROVIDE ADEQUATE VISIBILITY OF MAINLINE TRAFFIC.
- (8). THE LOCATION OF THE SIGN SEQUENCE AND MERGE TAPER SHOULD BE ADJUSTED SO THAT THE ARROW PANEL LOCATION IS NOT CONFUSING TO MOTORISTS ON THE RAMPS.
- (9). FOR WORK ZONES WHERE DEVICES ARE IN PLACE OVERNIGHT, USE TRIM-LINE CHANNELIZERS.



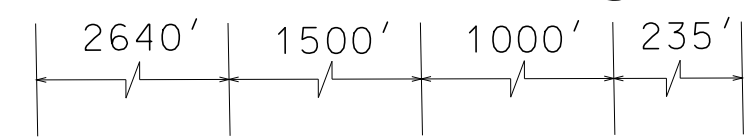
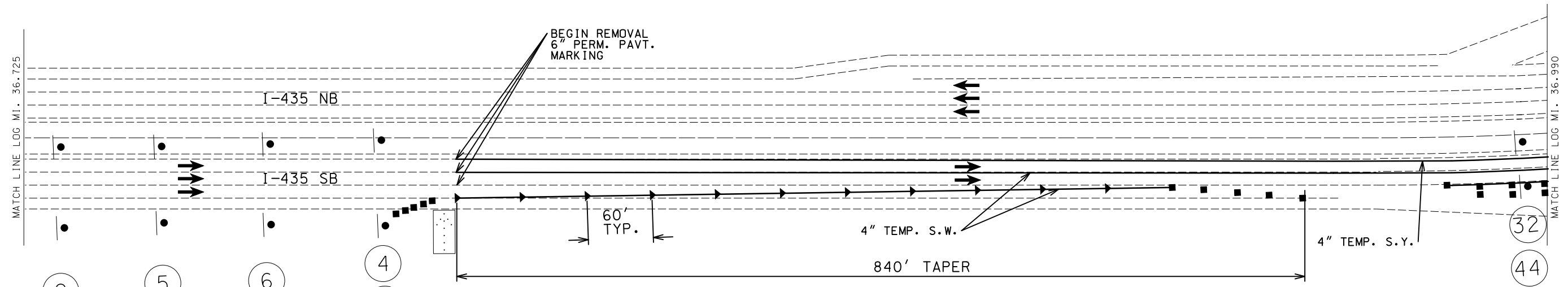
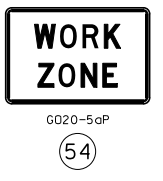
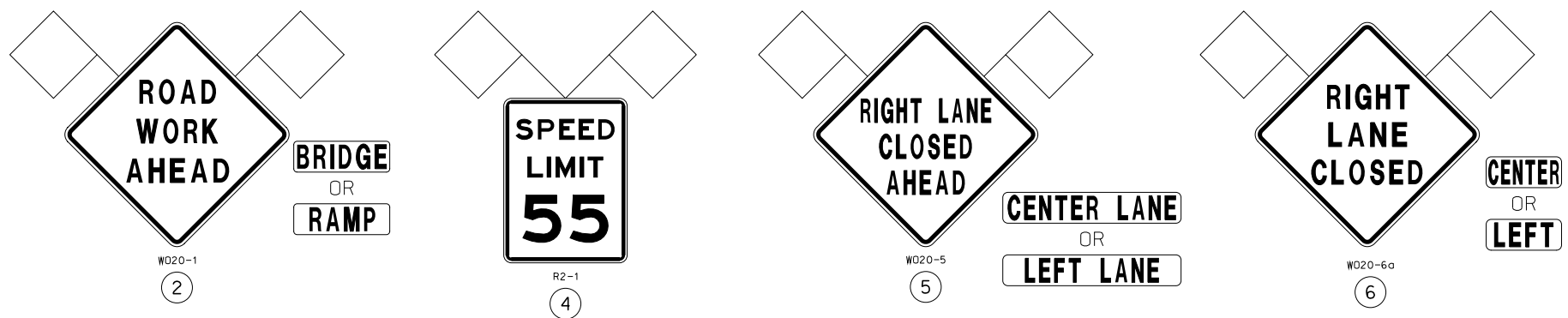
DATE PREPARED 6/11/2015	
ROUTE I-435	STATE MO
DISTRICT KC	SHEET NO. 9
COUNTY JACKSON	
JOB NO. J413022B	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-278-6636)

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

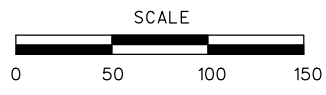


**TRAFFIC CONTROL LEGEND**

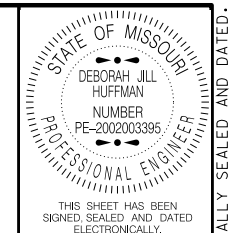
- SIGN (SINGLE SIDED)
- ◐ SIGN (DOUBLE SIDED)
- ⦿ FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- ⌈ BARRICADE
- ☰ CHANGEABLE MESSAGE BOARD
- ▨ FLASHING ARROW PANEL
- TEMPORARY CONCRETE BARRIER
- ➔ TRAFFIC FLOW ARROWS

**NOTES:**

1. TAPER CHANNELIZERS SHALL BE DIRECTIONAL INDICATOR BARRICADES WITH SEQUENTIAL FLASHING WARNING LIGHTS.
2. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SIGNS AND INSTALLATION COMPLY WITH THE LATEST EDITION OF THE MUTCD.
3. CONTRACTOR SHALL MASK OR REMOVE ALL CONFLICTING PAVEMENT MARKING OR SIGNING.
4. CONTRACTOR MAY FIELD ADJUST INSTALLATIONS WITH APPROVAL OF ENGINEER.
5. LIMITED SURVEY INFORMATION WAS USED IN THE DEVELOPMENT OF THESE PLANS. CONTRACTOR SHALL FIELD VERIFY PRIOR TO STARTING WORK.
6. SHOULDER REBUILD SHALL BE COMPLETED BEFORE BEGINNING PHASE 1 TRAFFIC CONTROL.



TEMPORARY TRAFFIC CONTROL SHEET  
 PHASE 1  
 SHEET 7 OF 34



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 6/11/2015

ROUTE	STATE
I-435	MO
DISTRICT	SHEET NO.
KC	10

COUNTY: JACKSON  
 JOB NO.: J413022B  
 CONTRACT ID.:

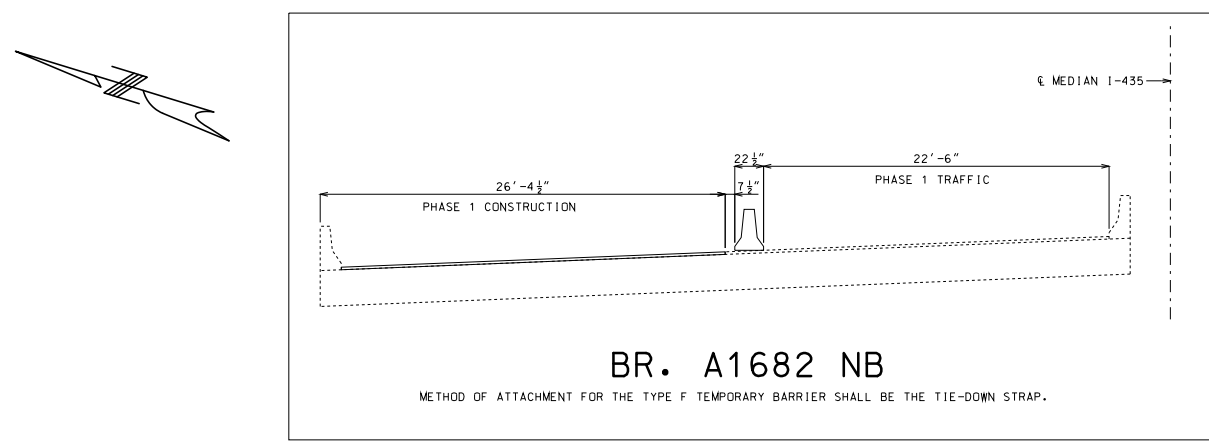
PROJECT NO.	BRIDGE NO.

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

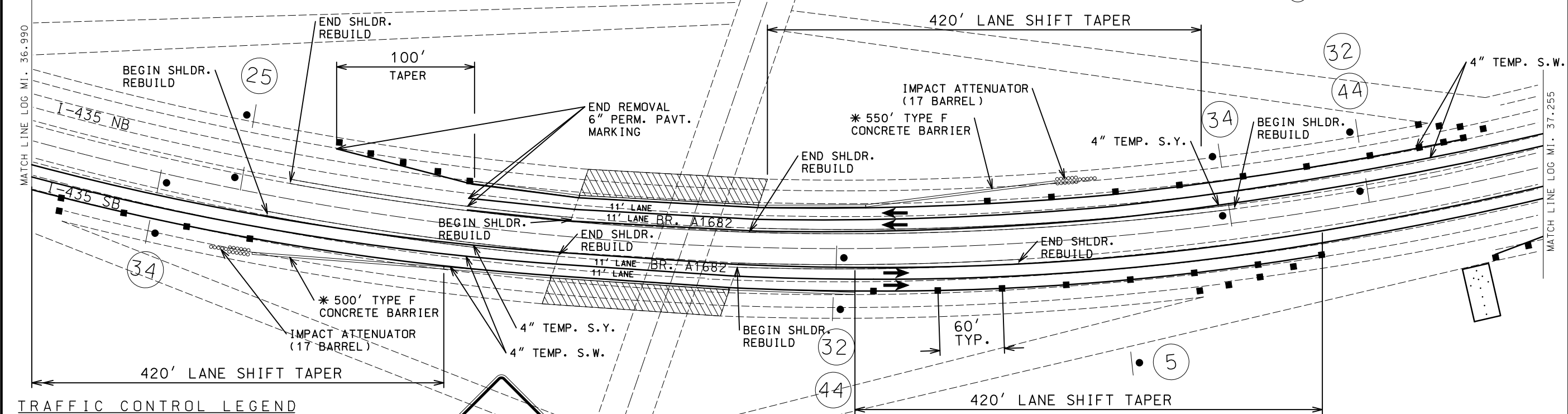
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



**BR. A1682 NB**

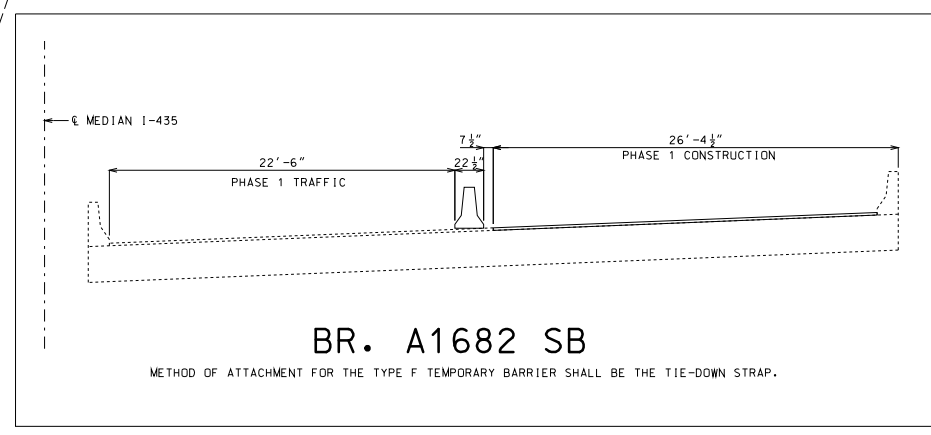
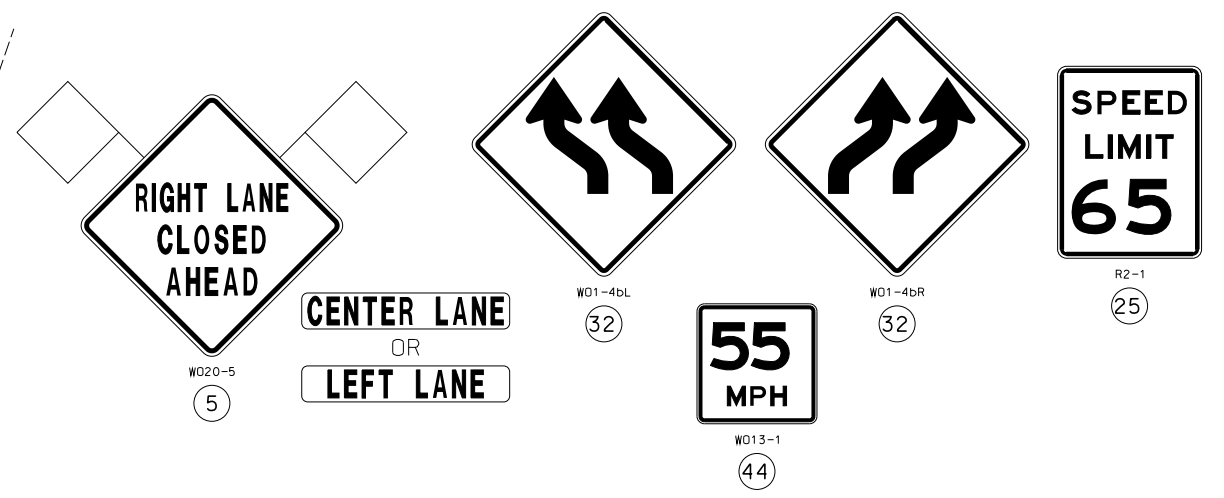
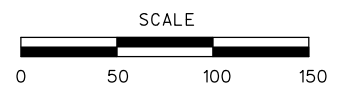
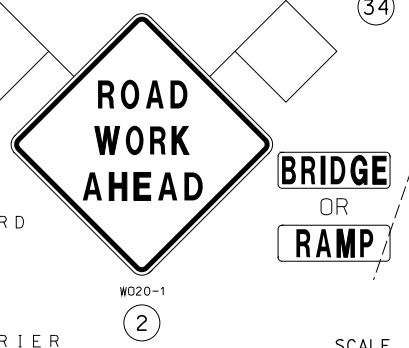
METHOD OF ATTACHMENT FOR THE TYPE F TEMPORARY BARRIER SHALL BE THE TIE-DOWN STRAP.

\* TYPE F TEMPORARY BARRIER LENGTH INCLUDES 176' TAPER AND 100' BUFFER LENGTH ON EACH END OF BRIDGE. TYPE F TEMPORARY BARRIER ON BRIDGE SHALL BE TIE-DOWN STRAP.



**TRAFFIC CONTROL LEGEND**

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- TUBULAR MARKER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- TEMPORARY CONCRETE BARRIER
- TRAFFIC FLOW ARROWS

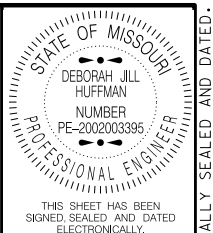


**BR. A1682 SB**

METHOD OF ATTACHMENT FOR THE TYPE F TEMPORARY BARRIER SHALL BE THE TIE-DOWN STRAP.

**NOTES:**

1. TAPER CHANNELIZERS SHALL BE DIRECTIONAL INDICATOR BARRICADES WITH SEQUENTIAL FLASHING WARNING LIGHTS.
2. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SIGNS AND INSTALLATION COMPLY WITH THE LATEST EDITION OF THE MUTCD.
3. CONTRACTOR SHALL MASK OR REMOVE ALL CONFLICTING PAVEMENT MARKING OR SIGNING.
4. CONTRACTOR MAY FIELD ADJUST INSTALLATIONS WITH APPROVAL OF ENGINEER.
5. LIMITED SURVEY INFORMATION WAS USED IN THE DEVELOPMENT OF THESE PLANS. CONTRACTOR SHALL FIELD VERIFY PRIOR TO STARTING WORK.
6. SHOULDER REBUILD SHALL BE COMPLETED BEFORE BEGINNING PHASE 1 TRAFFIC CONTROL.

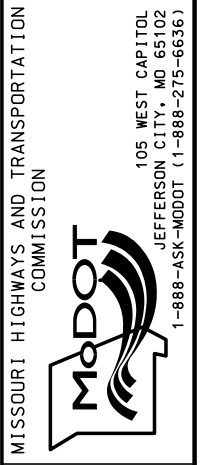


DATE PREPARED: 6/11/2015

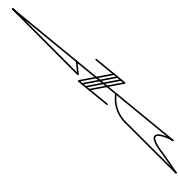
ROUTE	STATE
I-435	MO
DISTRICT	SHEET NO.
KC	11

COUNTY: JACKSON  
JOB NO.: J413022B  
CONTRACT ID.:  
PROJECT NO.:  
BRIDGE NO.:

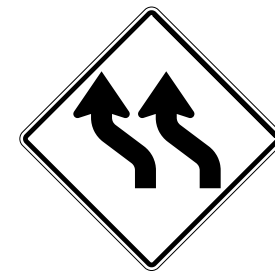
DATE	DESCRIPTION



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



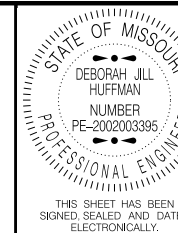
\* TYPE F TEMPORARY CONCRETE BARRIER LENGTH INCLUDES 176' TAPER, 100' BUFFER LENGTH ON EACH END OF BRIDGE AND LENGTH NEEDED ON BRIDGE.



W01-4DL  
32



W013-1  
44



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
6/11/2015

ROUTE I-435 STATE MO  
DISTRICT KC SHEET NO. 12

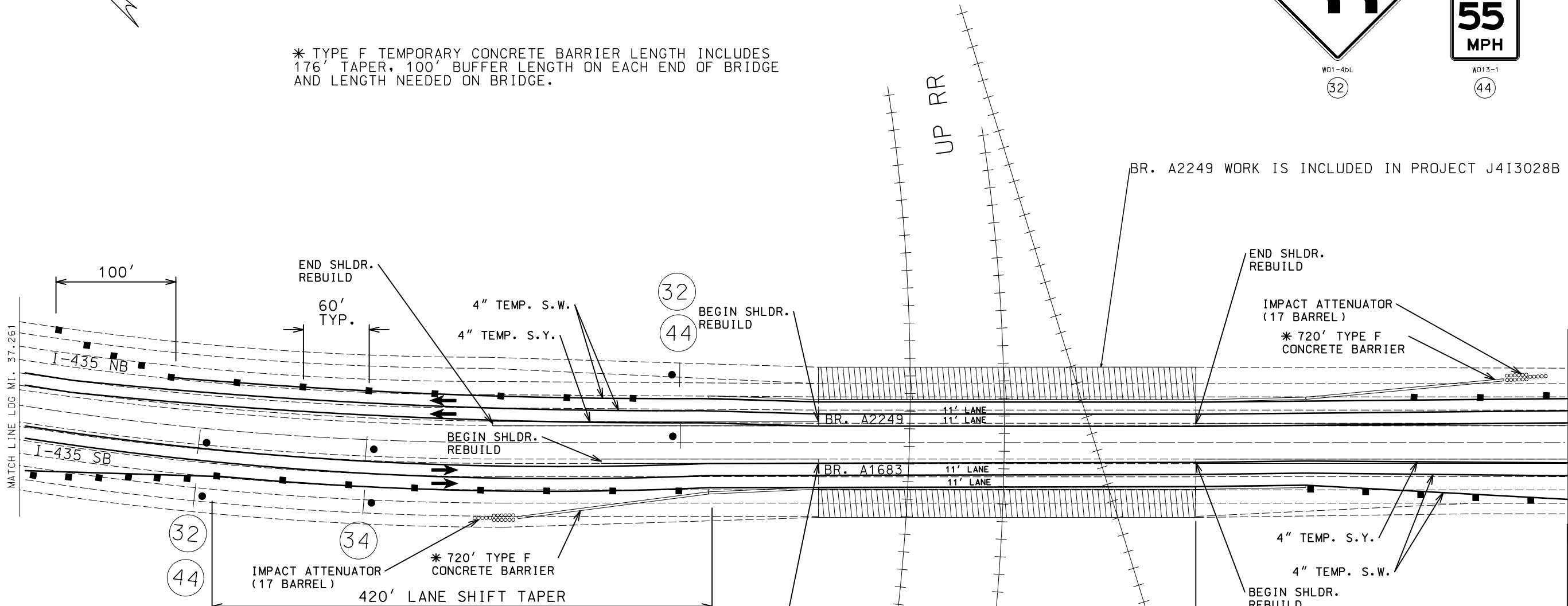
COUNTY JACKSON  
JOB NO. J413022B  
CONTRACT ID.

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.

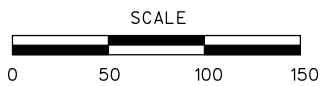


**TRAFFIC CONTROL LEGEND**

- SIGN (SINGLE SIDED)
- ◻ SIGN (DOUBLE SIDED)
- △ FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- E BARRICADE
- ▩ CHANGEABLE MESSAGE BOARD
- ▨ FLASHING ARROW PANEL
- ▬ TEMPORARY CONCRETE BARRIER
- ➔ TRAFFIC FLOW ARROWS



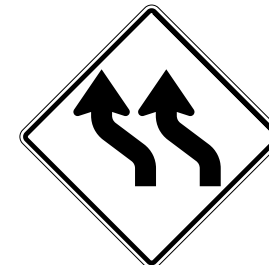
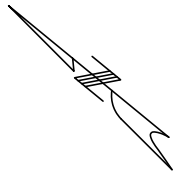
W05-5  
34



**NOTES:**

1. TAPER CHANNELIZERS SHALL BE DIRECTIONAL INDICATOR BARRICADES WITH SEQUENTIAL FLASHING WARNING LIGHTS.
2. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SIGNS AND INSTALLATION COMPLY WITH THE LATEST EDITION OF THE MUTCD.
3. CONTRACTOR SHALL MASK OR REMOVE ALL CONFLICTING PAVEMENT MARKING OR SIGNING.
4. CONTRACTOR MAY FIELD ADJUST INSTALLATIONS WITH APPROVAL OF ENGINEER.
5. LIMITED SURVEY INFORMATION WAS USED IN THE DEVELOPMENT OF THESE PLANS. CONTRACTOR SHALL FIELD VERIFY PRIOR TO STARTING WORK.
6. SHOULDER REBUILD SHALL BE COMPLETED BEFORE BEGINNING PHASE 1 TRAFFIC CONTROL.

TEMPORARY TRAFFIC CONTROL SHEET  
 PHASE 1  
 SHEET 9 OF 34

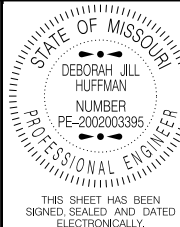


R2-1  
25

W01-4DL  
32

W05-5  
34

W013-1  
44



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
6/11/2015

ROUTE STATE  
I-435 MO

DISTRICT SHEET NO.  
KC 13

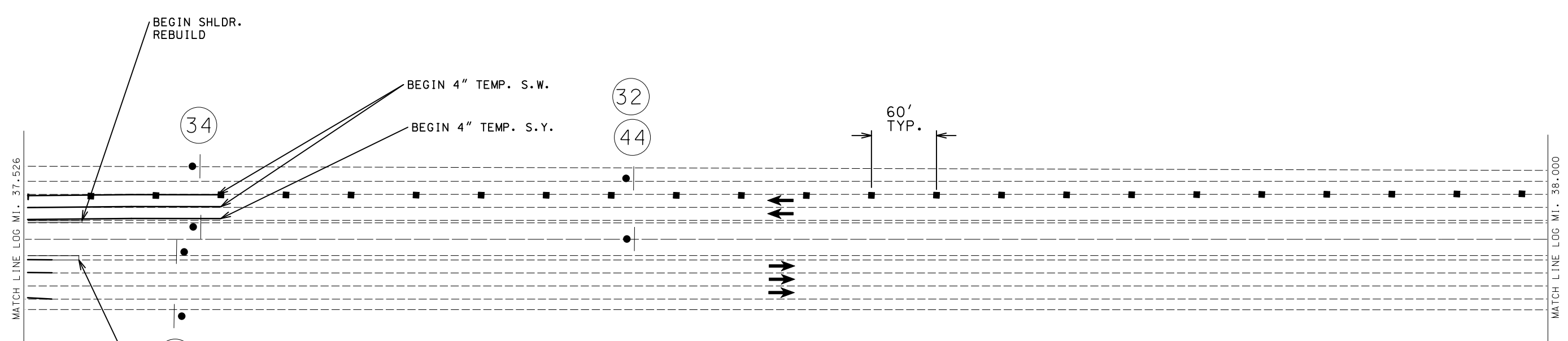
COUNTY  
JACKSON

JOB NO.  
J413022B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.



MATCH LINE LOG MI. 37+526

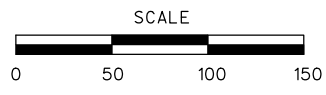
MATCH LINE LOG MI. 38+000

**TRAFFIC CONTROL LEGEND**

- SIGN (SINGLE SIDED)
- ◼ SIGN (DOUBLE SIDED)
- ◯ FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- [ BARRICADE
- ▨ CHANGEABLE MESSAGE BOARD
- ▤ FLASHING ARROW PANEL
- ▬ TEMPORARY CONCRETE BARRIER
- TRAFFIC FLOW ARROWS

**NOTES:**

1. TAPER CHANNELIZERS SHALL BE DIRECTIONAL INDICATOR BARRICADES WITH SEQUENTIAL FLASHING WARNING LIGHTS.
2. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SIGNS AND INSTALLATION COMPLY WITH THE LATEST EDITION OF THE MUTCD.
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4. CONTRACTOR MAY FIELD ADJUST INSTALLATIONS WITH APPROVAL OF ENGINEER.
5. LIMITED SURVEY INFORMATION WAS USED IN THE DEVELOPMENT OF THESE PLANS. CONTRACTOR SHALL FIELD VERIFY PRIOR TO STARTING WORK.
6. SHOULDER REBUILD SHALL BE COMPLETED BEFORE BEGINNING PHASE 1 TRAFFIC CONTROL.



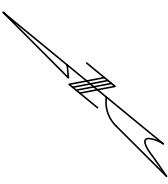
TEMPORARY TRAFFIC CONTROL SHEET  
 PHASE 1  
 SHEET 10 OF 34

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

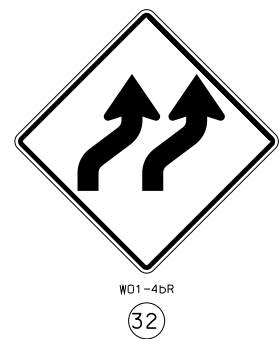
105 WEST CAPITOL  
 JEFFERSON CITY, MO 65102  
 1-888-ASK-MODOT (1-888-275-6636)

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

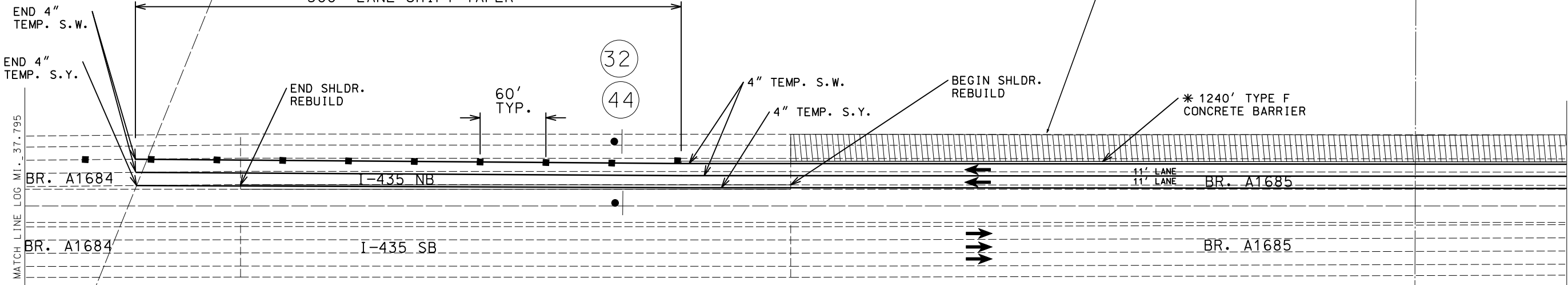


HAWTHORNE RD.

\* TYPE F TEMPORARY CONCRETE BARRIER LENGTH INCLUDES 176' TAPER, 100' BUFFER LENGTH ON EACH END OF BRIDGE AND LENGTH NEEDED ON BRIDGE.



W013-1  
44

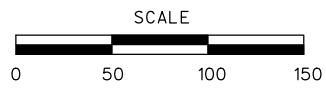


**TRAFFIC CONTROL LEGEND**

- SIGN (SINGLE SIDED)
- ◼ SIGN (DOUBLE SIDED)
- ◊ FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- ⌈ BARRICADE
- ▩ CHANGEABLE MESSAGE BOARD
- ▨ FLASHING ARROW PANEL
- ▬ TEMPORARY CONCRETE BARRIER
- ➔ TRAFFIC FLOW ARROWS

**NOTES:**

1. TAPER CHANNELIZERS SHALL BE DIRECTIONAL INDICATOR BARRICADES WITH SEQUENTIAL FLASHING WARNING LIGHTS.
2. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SIGNS AND INSTALLATION COMPLY WITH THE LATEST EDITION OF THE MUTCD.
3. CONTRACTOR SHALL MASK OR REMOVE ALL CONFLICTING PAVEMENT MARKING OR SIGNING.
4. CONTRACTOR MAY FIELD ADJUST INSTALLATIONS WITH APPROVAL OF ENGINEER.
5. LIMITED SURVEY INFORMATION WAS USED IN THE DEVELOPMENT OF THESE PLANS. CONTRACTOR SHALL FIELD VERIFY PRIOR TO STARTING WORK.
6. SHOULDER REBUILD SHALL BE COMPLETED BEFORE BEGINNING PHASE 1 TRAFFIC CONTROL.



STATE OF MISSOURI  
DEBORAH JILL HUFFMAN  
NUMBER PE-2002003395  
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
6/11/2015	
ROUTE	STATE
I-435	MO
DISTRICT	SHEET NO.
KC	14
COUNTY	
JACKSON	
JOB NO.	
J413022B	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

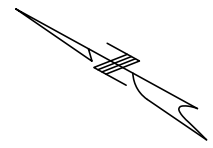
DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

**MoDOT**

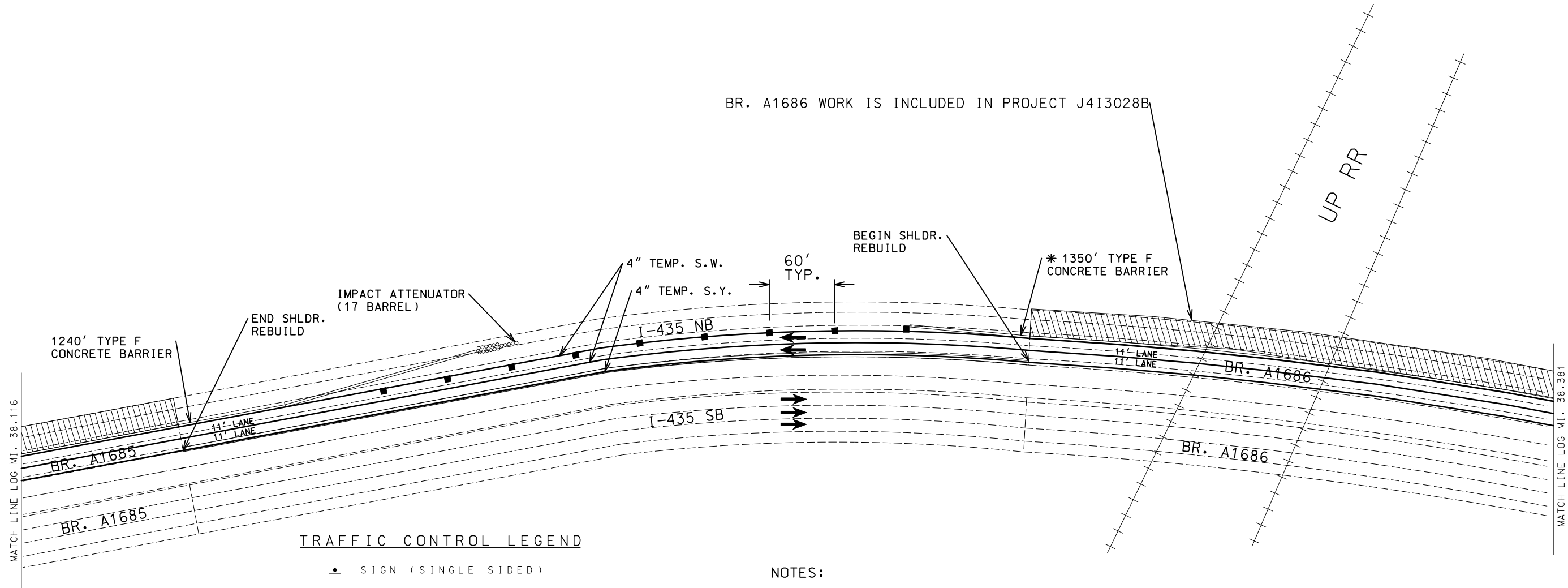
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

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



\* TYPE F TEMPORARY CONCRETE BARRIER LENGTH INCLUDES  
176' TAPER, 100' BUFFER LENGTH ON EACH END OF BRIDGE  
AND LENGTH NEEDED ON BRIDGE.

BR. A1686 WORK IS INCLUDED IN PROJECT J413028B

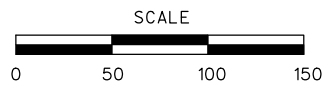


**TRAFFIC CONTROL LEGEND**

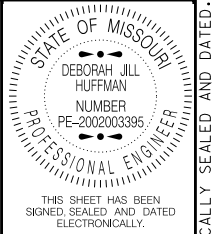
- SIGN (SINGLE SIDED)
- ◻ SIGN (DOUBLE SIDED)
- △ FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- ⌈ BARRICADE
- ▨ CHANGEABLE MESSAGE BOARD
- ▤ FLASHING ARROW PANEL
- ▬ TEMPORARY CONCRETE BARRIER
- ➔ TRAFFIC FLOW ARROWS

**NOTES:**

1. TAPER CHANNELIZERS SHALL BE DIRECTIONAL INDICATOR BARRICADES WITH SEQUENTIAL FLASHING WARNING LIGHTS.
2. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SIGNS AND INSTALLATION COMPLY WITH THE LATEST EDITION OF THE MUTCD.
3. CONTRACTOR SHALL MASK OR REMOVE ALL CONFLICTING PAVEMENT MARKING OR SIGNING.
4. CONTRACTOR MAY FIELD ADJUST INSTALLATIONS WITH APPROVAL OF ENGINEER.
5. LIMITED SURVEY INFORMATION WAS USED IN THE DEVELOPMENT OF THESE PLANS. CONTRACTOR SHALL FIELD VERIFY PRIOR TO STARTING WORK.
6. SHOULDER REBUILD SHALL BE COMPLETED BEFORE BEGINNING PHASE 1 TRAFFIC CONTROL.



TEMPORARY TRAFFIC CONTROL SHEET  
PHASE 1  
SHEET 12 OF 34



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
6/11/2015

ROUTE	STATE
I-435	MO
DISTRICT	SHEET NO.
KC	15

COUNTY  
JACKSON

JOB NO.  
J413022B

CONTRACT ID.

PROJECT NO.

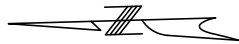
BRIDGE NO.

DESCRIPTION	DATE

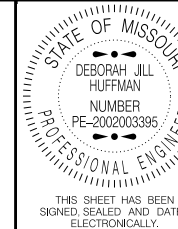
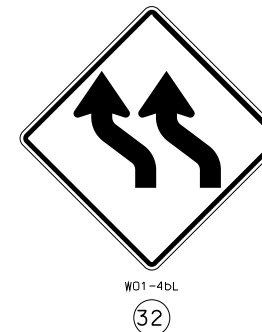
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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.



\* TYPE F TEMPORARY CONCRETE BARRIER LENGTH INCLUDES 176' TAPER, 100' BUFFER LENGTH ON EACH END OF BRIDGE AND LENGTH NEEDED ON BRIDGE.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.  
 DATE PREPARED 6/11/2015  
 ROUTE I-435 STATE MO  
 DISTRICT KC SHEET NO. 16  
 COUNTY JACKSON  
 JOB NO. J413022B  
 CONTRACT ID.

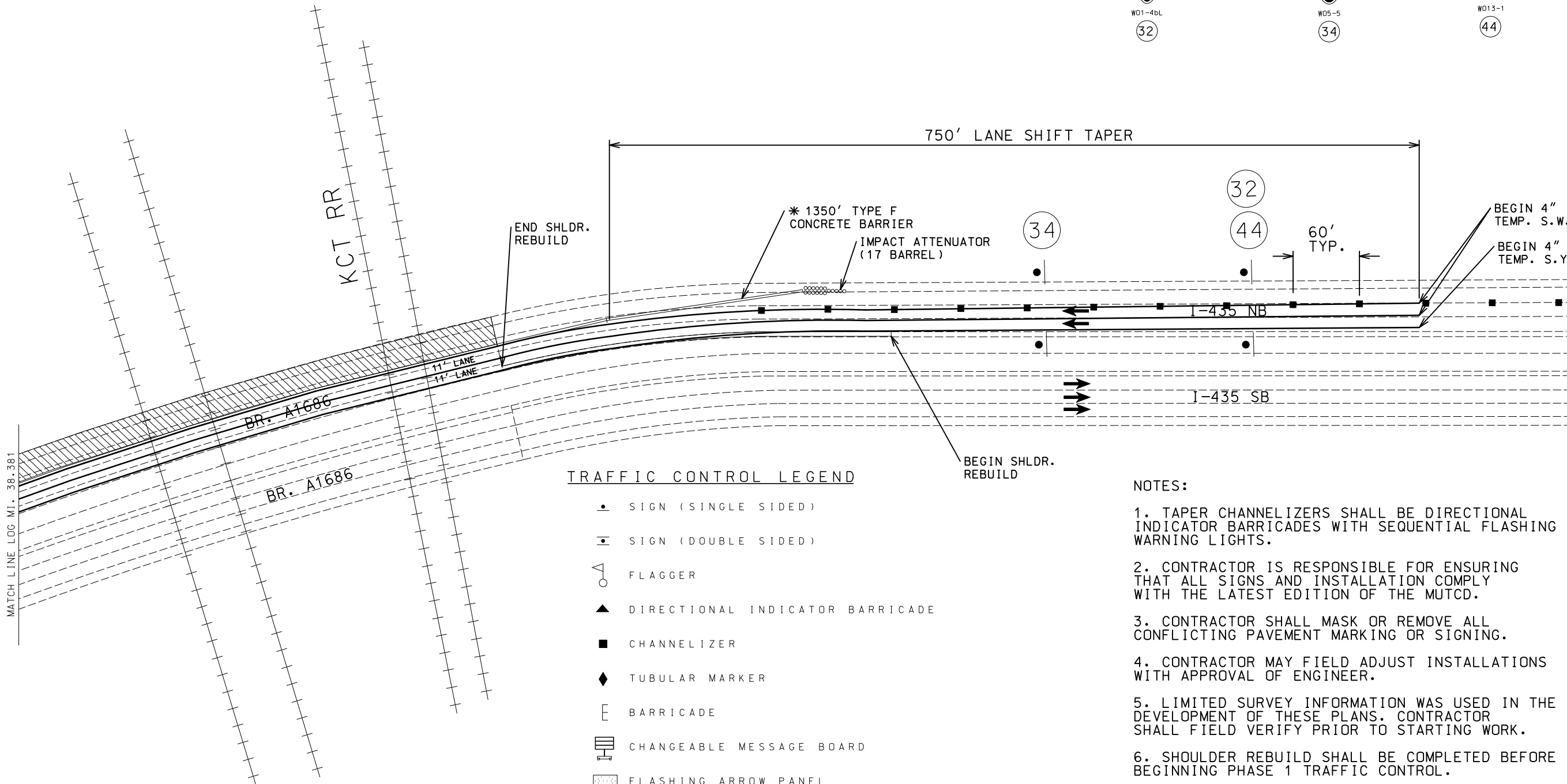
PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

DATE	DESCRIPTION

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



MATCH LINE LOG MI. 38.381

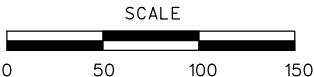
MATCH LINE LOG MI. 38.646

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- ◼ SIGN (DOUBLE SIDED)
- FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- ⌈ BARRICADE
- ☒ CHANGEABLE MESSAGE BOARD
- ☑ FLASHING ARROW PANEL
- TEMPORARY CONCRETE BARRIER
- ➔ TRAFFIC FLOW ARROWS

NOTES:

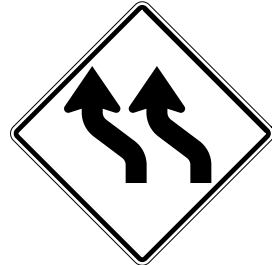
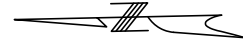
1. TAPER CHANNELIZERS SHALL BE DIRECTIONAL INDICATOR BARRICADES WITH SEQUENTIAL FLASHING WARNING LIGHTS.
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4. CONTRACTOR MAY FIELD ADJUST INSTALLATIONS WITH APPROVAL OF ENGINEER.
5. LIMITED SURVEY INFORMATION WAS USED IN THE DEVELOPMENT OF THESE PLANS. CONTRACTOR SHALL FIELD VERIFY PRIOR TO STARTING WORK.
6. SHOULDER REBUILD SHALL BE COMPLETED BEFORE BEGINNING PHASE 1 TRAFFIC CONTROL.



TEMPORARY TRAFFIC CONTROL SHEET  
 PHASE 1  
 SHEET 13 OF 34

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





W01-4bL  
32



W013-1  
44



W020-1  
2



R2-1  
4



G020-5aP  
54



W020-5  
5



W020-6a  
6



W05-5  
34

WILSON RD.

BR. A1712

MATCH LINE LOG MI. 38.637

MATCH LINE LOG MI. 38.804

I-435 NB  
I-435 SB

BEGIN REMOVAL  
6" PERM. PAVT.  
MARKING

END 4" TEMP. S.W.

END SHLDR.  
REBUILD

END 4" TEMP. S.Y.

60'  
TYP.

11' LANE

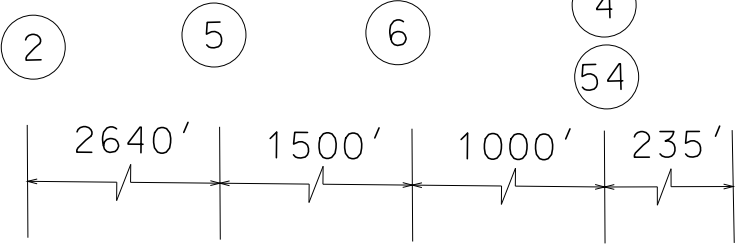
11' LANE

4" TEMP. S.W.

4" TEMP. S.Y.

840' TAPER

650'  
LANE SHIFT TAPER

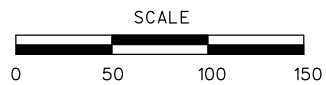


TRAFFIC CONTROL LEGEND

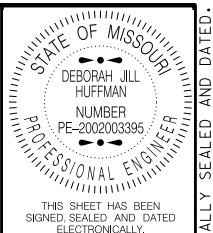
- SIGN (SINGLE SIDED)
- ◻ SIGN (DOUBLE SIDED)
- ◊ FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- E BARRICADE
- ▨ CHANGEABLE MESSAGE BOARD
- ▨ FLASHING ARROW PANEL
- TEMPORARY CONCRETE BARRIER
- TRAFFIC FLOW ARROWS

NOTES:

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TEMPORARY TRAFFIC CONTROL SHEET  
PHASE 1  
SHEET 14 OF 34



DATE PREPARED: 6/11/2015

ROUTE	STATE
I-435	MO
DISTRICT	SHEET NO.
KC	17

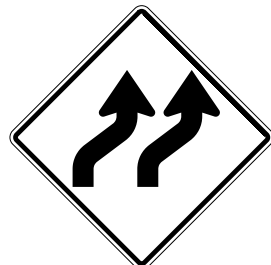
COUNTY: JACKSON  
JOB NO.: J413022B  
CONTRACT ID.:  
PROJECT NO.:  
BRIDGE NO.:

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

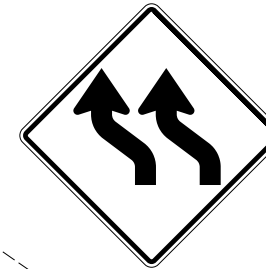
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

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



W01-4bR  
32

ROAD  
CLOSED  
R11-2  
29



W01-4bL  
32

SPEED  
LIMIT  
65  
R2-1  
25

55  
MPH  
W013-1  
44



W05-5  
34

CMS MESSAGE BOARD TO DIRECT TRAFFIC ONTO THE I-435 SB ON RAMP TO DETOUR TO RTE. 12 TO I-435 NB DUE TO THE I-435 NB RAMP CLOSURE ON RTE. 24. SEE SHEETS 36 AND 37 FOR DETOUR SIGNING PLAN.

\* TYPE F TEMPORARY BARRIER LENGTH INCLUDES 176' TAPER AND 100' BUFFER LENGTH ON EACH END OF BRIDGE. TYPE F TEMPORARY BARRIER ON BRIDGE SHALL BE TIE-DOWN STRAP.

RAMP CLOSED

550' LANE SHIFT TAPER

\* 650' TYPE F CONCRETE BARRIER

IMPACT ATTENUATOR (17 BARREL)

BEGIN SHLDR. REBUILD

60' TYP.

END SHLDR. REBUILD

4" TEMP. S.W.  
4" TEMP. S.Y.

BEGIN SHLDR. REBUILD

END SHLDR. REBUILD

BEGIN SHLDR. REBUILD

END SHLDR. REBUILD

\* 650' TYPE F CONCRETE BARRIER

IMPACT ATTENUATOR (17 BARREL)

4" TEMP. S.W.  
4" TEMP. S.Y.

650' LANE SHIFT TAPER

US 24

BR. A1750 11' LANE

BR. A1750 11' LANE

I-435 NB

I-435 SB

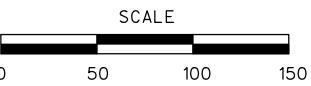
TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- ◻ SIGN (DOUBLE SIDED)
- ⚑ FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- E BARRICADE
- ▩ CHANGEABLE MESSAGE BOARD
- ▨ FLASHING ARROW PANEL
- TEMPORARY CONCRETE BARRIER
- ➔ TRAFFIC FLOW ARROWS

NOTES:

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TEMPORARY TRAFFIC CONTROL SHEET  
PHASE 1  
SHEET 15 OF 34



MATCH LINE LOG MI. 38.804

MATCH LINE LOG MI. 39.069

STATE OF MISSOURI  
DEBORAH JILL HUFFMAN  
NUMBER PE-202203395  
PROFESSIONAL ENGINEER  
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 6/11/2015

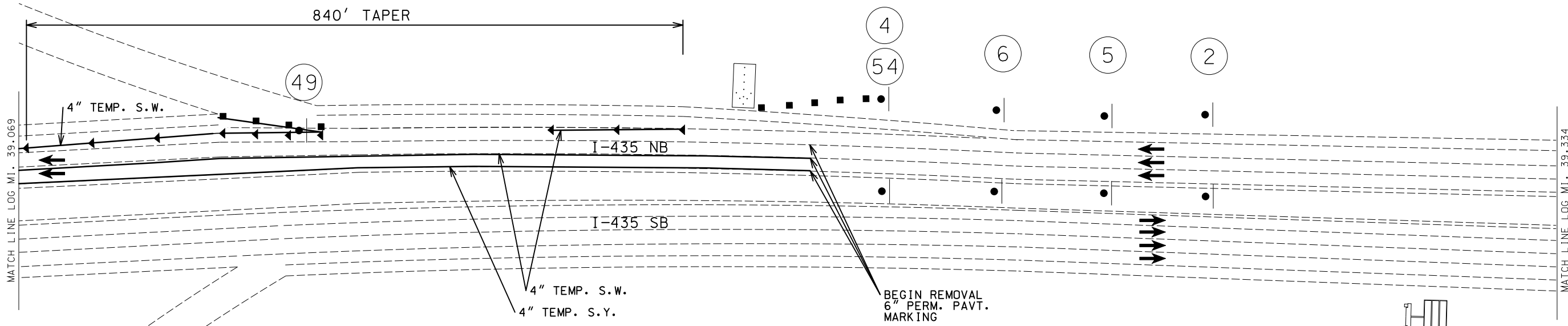
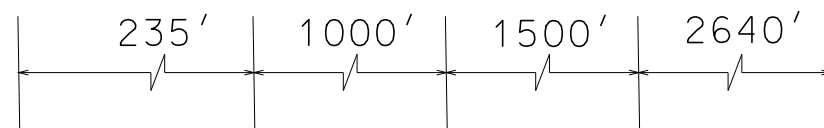
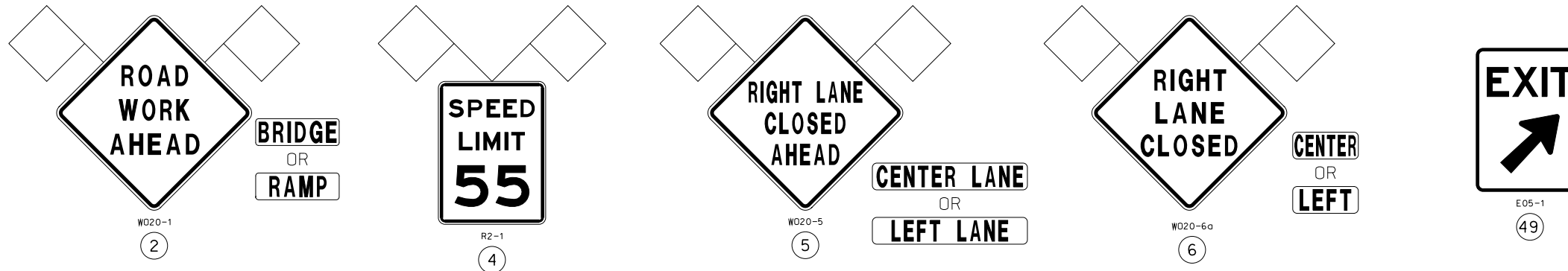
ROUTE I-435	STATE MO
DISTRICT KC	SHEET NO. 18

COUNTY JACKSON  
JOB NO. J413022B  
CONTRACT ID.  
PROJECT NO.  
BRIDGE NO.

DATE	DESCRIPTION

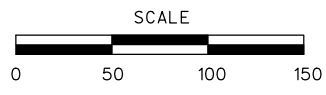
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
MoDOT  
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-278-6636)

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



**TRAFFIC CONTROL LEGEND**

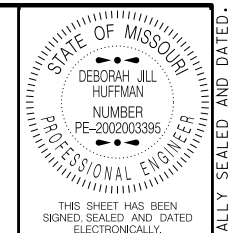
- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- E BARRICADE
- ▭ CHANGEABLE MESSAGE BOARD
- ▨ FLASHING ARROW PANEL
- TEMPORARY CONCRETE BARRIER
- ➔ TRAFFIC FLOW ARROWS



**NOTES:**

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CMS MESSAGE BOARD TO DIRECT TRAFFIC FROM THE RTE. 24 TO I-435 SB ON RAMP TO DETOUR TO RTE. 12 TO I-435 NB DUE TO THE I-435 NB RAMP CLOSURE ON RTE. 24. SEE SHEETS 36 AND 37 FOR DETOUR SIGNING PLAN.



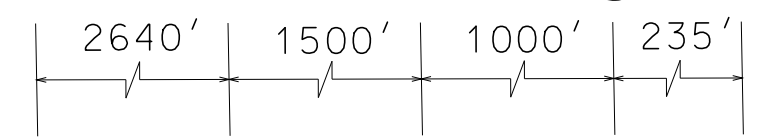
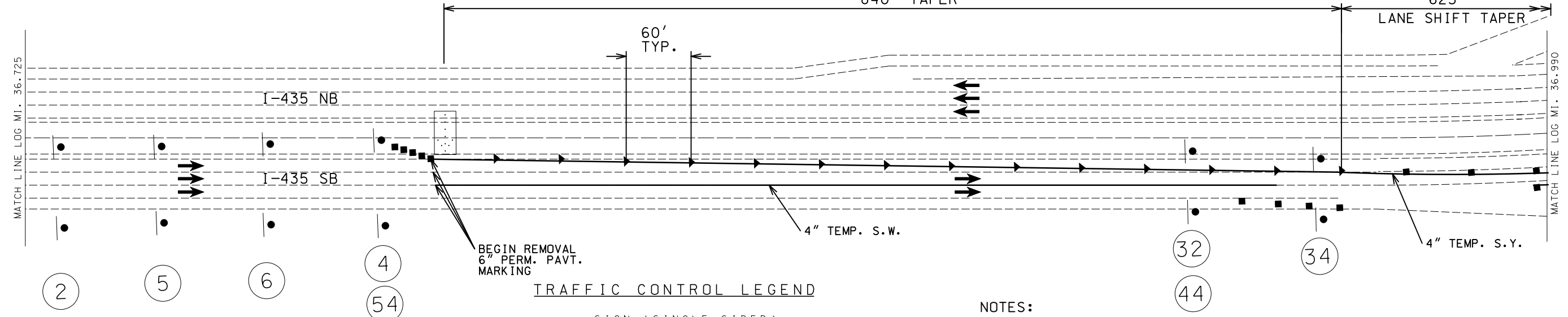
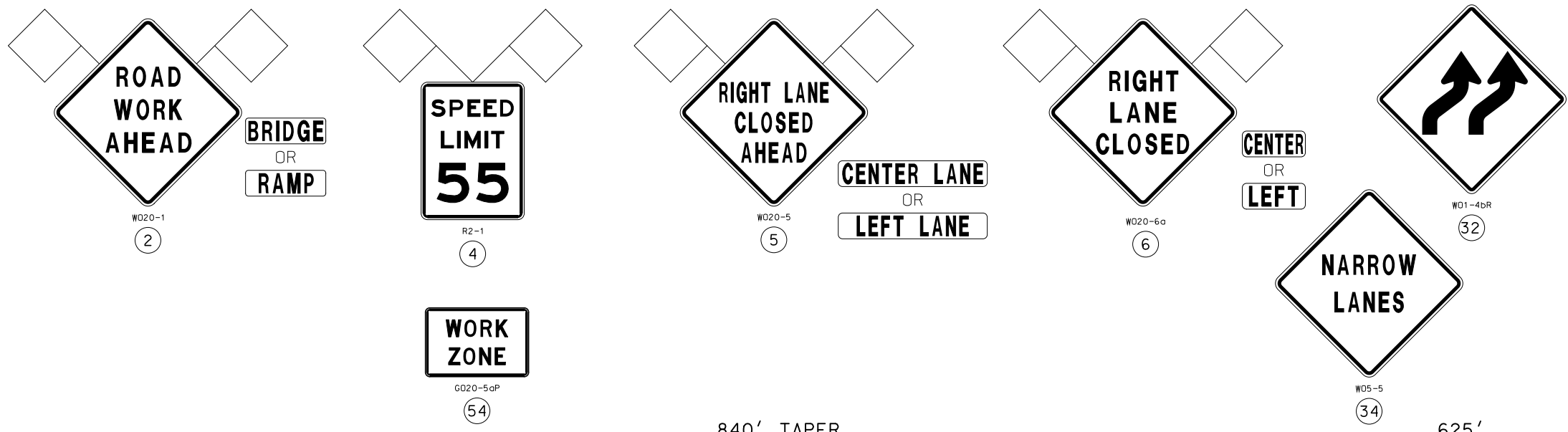
DATE PREPARED 6/11/2015	
ROUTE I-435	STATE MO
DISTRICT KC	SHEET NO. 19
COUNTY JACKSON	
JOB NO. J413022B	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

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.

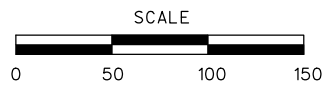


**TRAFFIC CONTROL LEGEND**

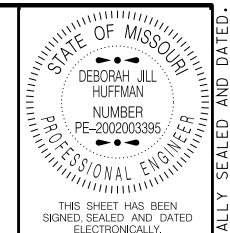
- SIGN (SINGLE SIDED)
- ◻ SIGN (DOUBLE SIDED)
- ◊ FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- ⌈ BARRICADE
- ▩ CHANGEABLE MESSAGE BOARD
- ▨ FLASHING ARROW PANEL
- TEMPORARY CONCRETE BARRIER
- ➔ TRAFFIC FLOW ARROWS

**NOTES:**

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TEMPORARY TRAFFIC CONTROL SHEET  
 PHASE 2  
 SHEET 17 OF 34



DATE PREPARED: 6/11/2015

ROUTE	STATE
I-435	MO
DISTRICT	SHEET NO.
KC	20

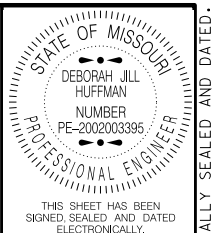
COUNTY: JACKSON  
 JOB NO.: J413022B  
 CONTRACT ID.:  
 PROJECT NO.:  
 BRIDGE NO.:

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.

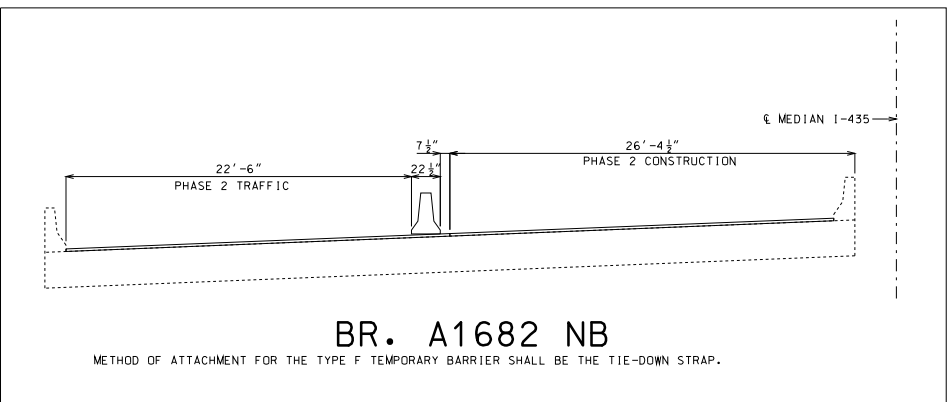


STATE OF MISSOURI  
 DEBORAH JILL HUFFMAN  
 NUMBER PE-2002003395  
 PROFESSIONAL ENGINEER  
 THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.  
 DATE PREPARED 6/11/2015  
 ROUTE I-435 STATE MO  
 DISTRICT KC SHEET NO. 21  
 COUNTY JACKSON  
 JOB NO. J413022B  
 CONTRACT ID.  
 PROJECT NO.  
 BRIDGE NO.

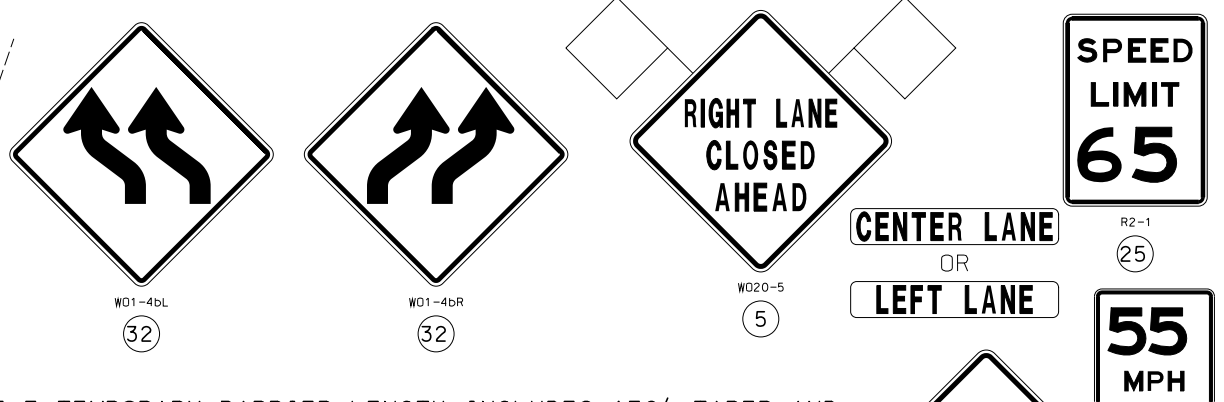
DATE	DESCRIPTION

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

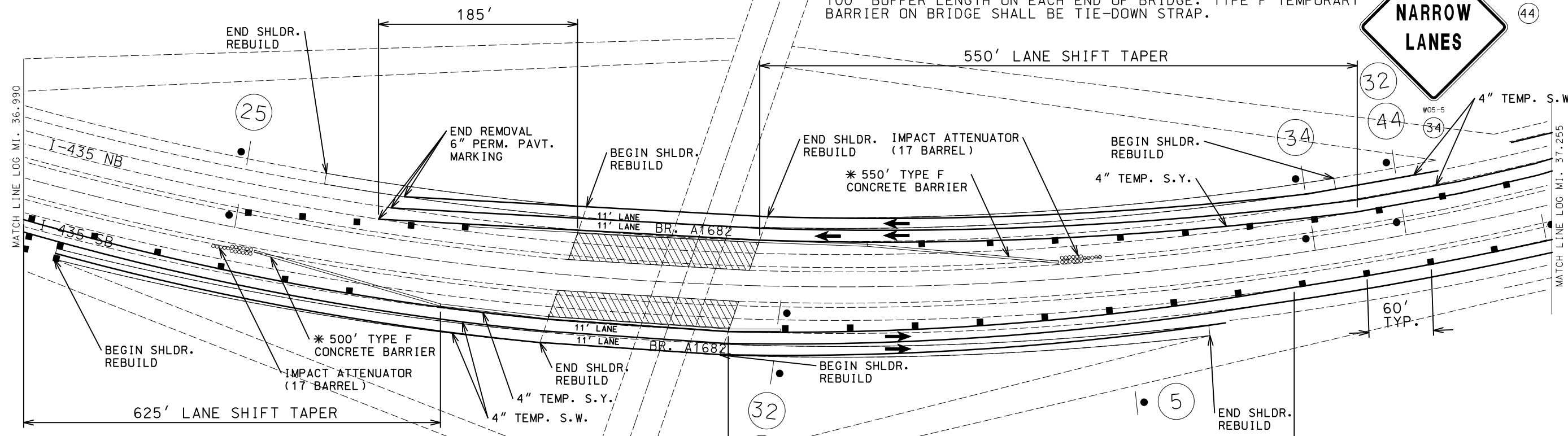
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



FRONT STREET

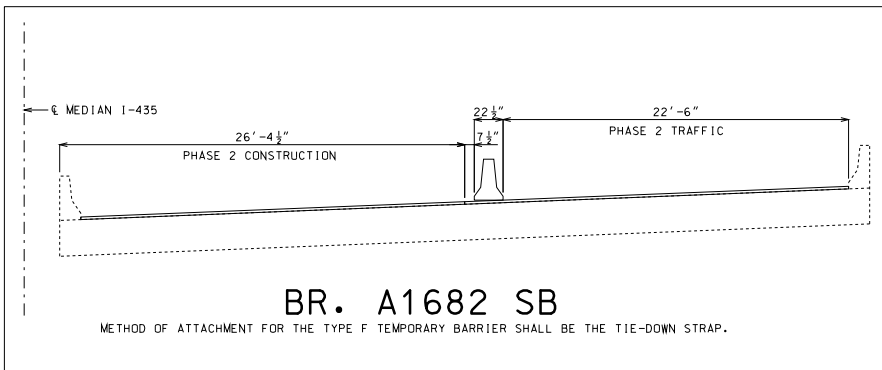
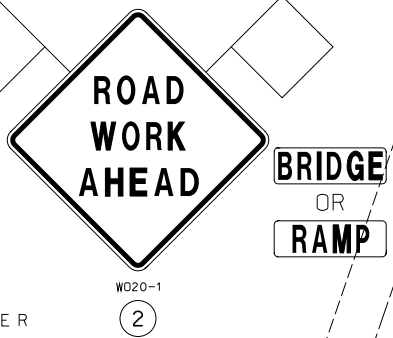


\* TYPE F TEMPORARY BARRIER LENGTH INCLUDES 176' TAPER AND 100' BUFFER LENGTH ON EACH END OF BRIDGE. TYPE F TEMPORARY BARRIER ON BRIDGE SHALL BE TIE-DOWN STRAP.



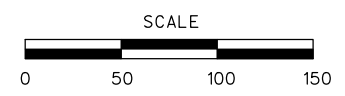
**TRAFFIC CONTROL LEGEND**

- SIGN (SINGLE SIDED)
- ◻ SIGN (DOUBLE SIDED)
- FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- E BARRICADE
- ▨ CHANGEABLE MESSAGE BOARD
- ▨ FLASHING ARROW PANEL
- TEMPORARY CONCRETE BARRIER
- ➔ TRAFFIC FLOW ARROWS

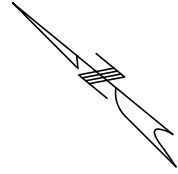


**NOTES:**

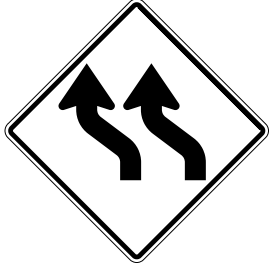
1. TAPER CHANNELIZERS SHALL BE DIRECTIONAL INDICATOR BARRICADES WITH SEQUENTIAL FLASHING WARNING LIGHTS.
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TEMPORARY TRAFFIC CONTROL SHEET  
 PHASE 2  
 SHEET 18 OF 34



W01-4bR  
32



W01-4bL  
32



W013-1  
44



R2-1  
25

BEGIN SHLDR. REBUILD

32

44

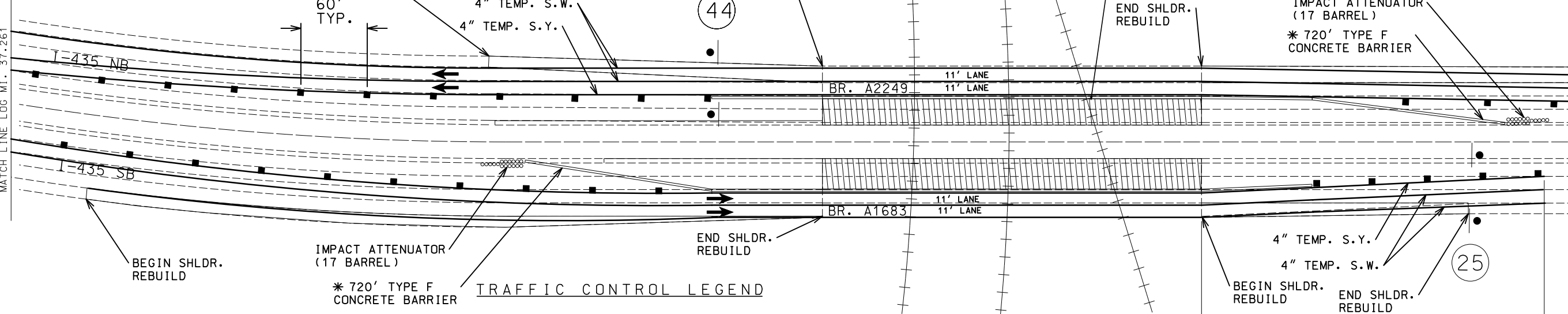
\* TYPE F TEMPORARY CONCRETE BARRIER LENGTH INCLUDES 176' TAPER, 100' BUFFER LENGTH ON EACH END OF BRIDGE AND LENGTH NEEDED ON BRIDGE.

UP RR

BR. A2249 WORK IS INCLUDED IN PROJECT J413028B

MATCH LINE LOG MI. 37.261

MATCH LINE LOG MI. 37.526



TRAFFIC CONTROL LEGEND

- SIGN ( SINGLE SIDED )
- ◼ SIGN ( DOUBLE SIDED )
- FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- E BARRICADE
- ☰ CHANGEABLE MESSAGE BOARD
- ☒ FLASHING ARROW PANEL
- TEMPORARY CONCRETE BARRIER
- ➔ TRAFFIC FLOW ARROWS

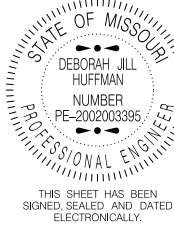
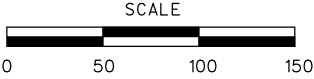
NOTES:

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TEMPORARY TRAFFIC CONTROL SHEET

PHASE 2

SHEET 19 OF 34



DATE PREPARED  
6/11/2015

ROUTE STATE  
I-435 MO  
DISTRICT SHEET NO.  
KC 22

COUNTY  
JACKSON  
JOB NO.  
J413022B  
CONTRACT ID.

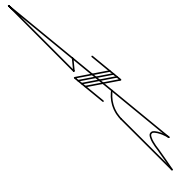
PROJECT NO.  
BRIDGE NO.

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.



MATCH LINE LOG MI. 37.526

MATCH LINE LOG MI. 37.791

11' LANE  
11' LANE

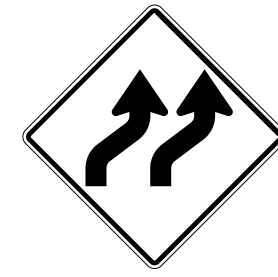
BEGIN SHLDR. REBUILD  
 BEGIN 4" TEMP. S.W.  
 BEGIN 4" TEMP. S.Y.

34

32

44

60'  
TYP.



W01-4DR  
32



W013-1  
44



W05-5  
34

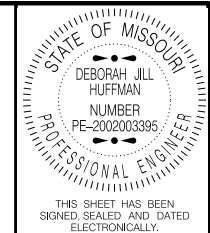
**TRAFFIC CONTROL LEGEND**

- SIGN (SINGLE SIDED)
- ◼ SIGN (DOUBLE SIDED)
- FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- E BARRICADE
- ▨ CHANGEABLE MESSAGE BOARD
- ▨ FLASHING ARROW PANEL
- TEMPORARY CONCRETE BARRIER
- ➔ TRAFFIC FLOW ARROWS

**NOTES:**

1. TAPER CHANNELIZERS SHALL BE DIRECTIONAL INDICATOR BARRICADES WITH SEQUENTIAL FLASHING WARNING LIGHTS.
2. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SIGNS AND INSTALLATION COMPLY WITH THE LATEST EDITION OF THE MUTCD.
3. CONTRACTOR SHALL MASK OR REMOVE ALL CONFLICTING PAVEMENT MARKING OR SIGNING.
4. CONTRACTOR MAY FIELD ADJUST INSTALLATIONS WITH APPROVAL OF ENGINEER.
5. LIMITED SURVEY INFORMATION WAS USED IN THE DEVELOPMENT OF THESE PLANS. CONTRACTOR SHALL FIELD VERIFY PRIOR TO STARTING WORK.
6. SHOULDER REBUILD SHALL BE COMPLETED BEFORE BEGINNING PHASE 1 TRAFFIC CONTROL.

TEMPORARY TRAFFIC CONTROL SHEET  
 PHASE 2  
 SHEET 20 OF 34



DATE PREPARED  
6/11/2015

ROUTE I-435	STATE MO
DISTRICT KC	SHEET NO. 23

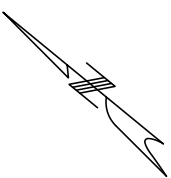
COUNTY  
JACKSON  
 JOB NO.  
J413022B  
 CONTRACT ID.

PROJECT NO.  
BRIDGE NO.

DATE	DESCRIPTION

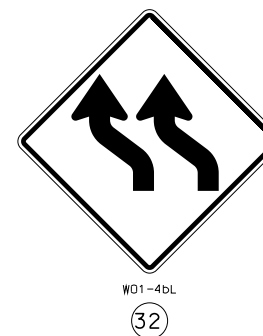
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
 105 WEST CAPITOL  
 JEFFERSON CITY, MO 65102  
 1-888-ASK-MODOT (1-888-275-6636)

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



HAWTHORNE RD.

\* TYPE F TEMPORARY CONCRETE BARRIER LENGTH INCLUDES 176' TAPER, 100' BUFFER LENGTH ON EACH END OF BRIDGE AND LENGTH NEEDED ON BRIDGE.



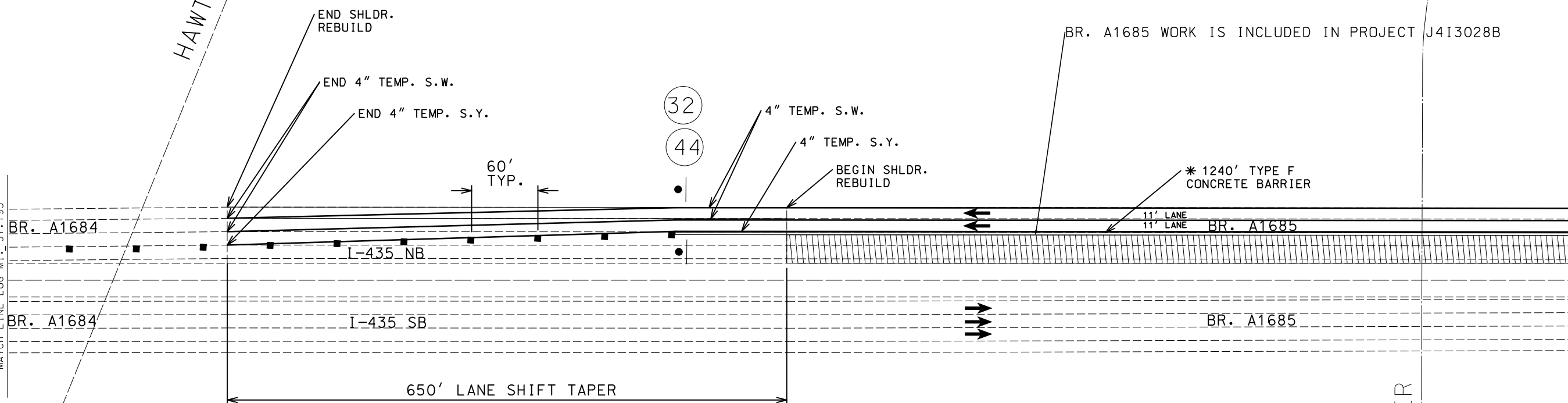
W013-1  
(44)

W01-4bL  
(32)

BR. A1685 WORK IS INCLUDED IN PROJECT J413028B

MATCH LINE LOG M.I. 37.795

MATCH LINE LOG M.I. 38.060

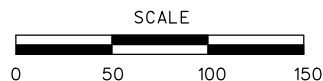


TRAFFIC CONTROL LEGEND

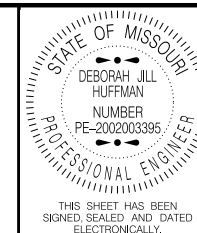
- SIGN (SINGLE SIDED)
- ◼ SIGN (DOUBLE SIDED)
- ◊ FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- ⌈ BARRICADE
- ▩ CHANGEABLE MESSAGE BOARD
- ▨ FLASHING ARROW PANEL
- ▬ TEMPORARY CONCRETE BARRIER
- ➔ TRAFFIC FLOW ARROWS

NOTES:

1. TAPER CHANNELIZERS SHALL BE DIRECTIONAL INDICATOR BARRICADES WITH SEQUENTIAL FLASHING WARNING LIGHTS.
2. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SIGNS AND INSTALLATION COMPLY WITH THE LATEST EDITION OF THE MUTCD.
3. CONTRACTOR SHALL MASK OR REMOVE ALL CONFLICTING PAVEMENT MARKING OR SIGNING.
4. CONTRACTOR MAY FIELD ADJUST INSTALLATIONS WITH APPROVAL OF ENGINEER.
5. LIMITED SURVEY INFORMATION WAS USED IN THE DEVELOPMENT OF THESE PLANS. CONTRACTOR SHALL FIELD VERIFY PRIOR TO STARTING WORK.
6. SHOULDER REBUILD SHALL BE COMPLETED BEFORE BEGINNING PHASE 1 TRAFFIC CONTROL.



TEMPORARY TRAFFIC CONTROL SHEET  
PHASE 2  
SHEET 21 OF 34



DATE PREPARED  
6/11/2015

ROUTE I-435	STATE MO
DISTRICT KC	SHEET NO. 24

COUNTY  
JACKSON

JOB NO.  
J413022B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

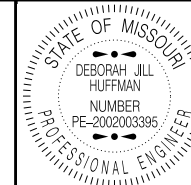
DATE	DESCRIPTION

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.





THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
6/11/2015

ROUTE	STATE
I-435	MO
DISTRICT	SHEET NO.
KC	25

COUNTY  
**JACKSON**  
JOB NO.  
**J413022B**  
CONTRACT ID.

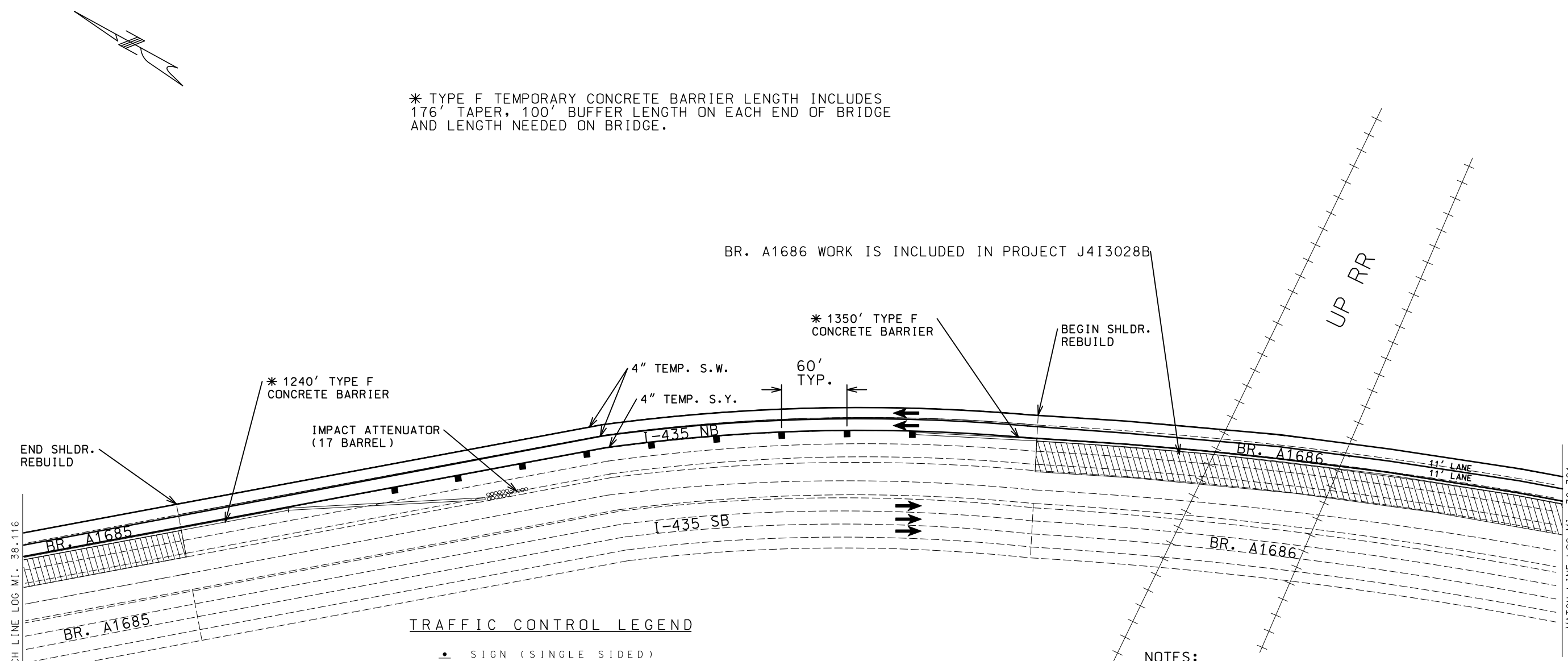
PROJECT NO.  
BRIDGE NO.

DATE	DESCRIPTION

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

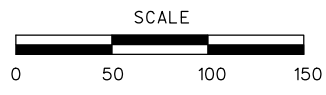
\* TYPE F TEMPORARY CONCRETE BARRIER LENGTH INCLUDES 176' TAPER, 100' BUFFER LENGTH ON EACH END OF BRIDGE AND LENGTH NEEDED ON BRIDGE.

BR. A1686 WORK IS INCLUDED IN PROJECT J413028B



**TRAFFIC CONTROL LEGEND**

- SIGN (SINGLE SIDED)
- ◻ SIGN (DOUBLE SIDED)
- △ FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- E BARRICADE
- ▭ CHANGEABLE MESSAGE BOARD
- ▨ FLASHING ARROW PANEL
- TEMPORARY CONCRETE BARRIER
- ➔ TRAFFIC FLOW ARROWS



- NOTES:**
1. TAPER CHANNELIZERS SHALL BE DIRECTIONAL INDICATOR BARRICADES WITH SEQUENTIAL FLASHING WARNING LIGHTS.
  2. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SIGNS AND INSTALLATION COMPLY WITH THE LATEST EDITION OF THE MUTCD.
  3. CONTRACTOR SHALL MASK OR REMOVE ALL CONFLICTING PAVEMENT MARKING OR SIGNING.
  4. CONTRACTOR MAY FIELD ADJUST INSTALLATIONS WITH APPROVAL OF ENGINEER.
  5. LIMITED SURVEY INFORMATION WAS USED IN THE DEVELOPMENT OF THESE PLANS. CONTRACTOR SHALL FIELD VERIFY PRIOR TO STARTING WORK.
  6. SHOULDER REBUILD SHALL BE COMPLETED BEFORE BEGINNING PHASE 1 TRAFFIC CONTROL.

TEMPORARY TRAFFIC CONTROL SHEET  
 PHASE 2  
 SHEET 22 OF 34

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

STATE OF MISSOURI  
DEBORAH JILL HUFFMAN  
NUMBER  
PE-202203395  
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
6/11/2015

ROUTE STATE  
I-435 MO  
DISTRICT SHEET NO.  
KC 26

COUNTY  
JACKSON

JOB NO.

J413022B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

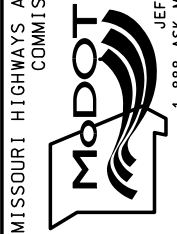
DESCRIPTION

DATE	DESCRIPTION

DATE

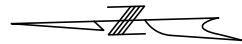
DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

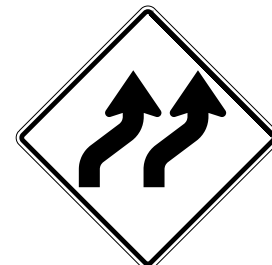


105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

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



\* TYPE F TEMPORARY CONCRETE BARRIER LENGTH INCLUDES  
176' TAPER, 100' BUFFER LENGTH ON EACH END OF BRIDGE  
AND LENGTH NEEDED ON BRIDGE.



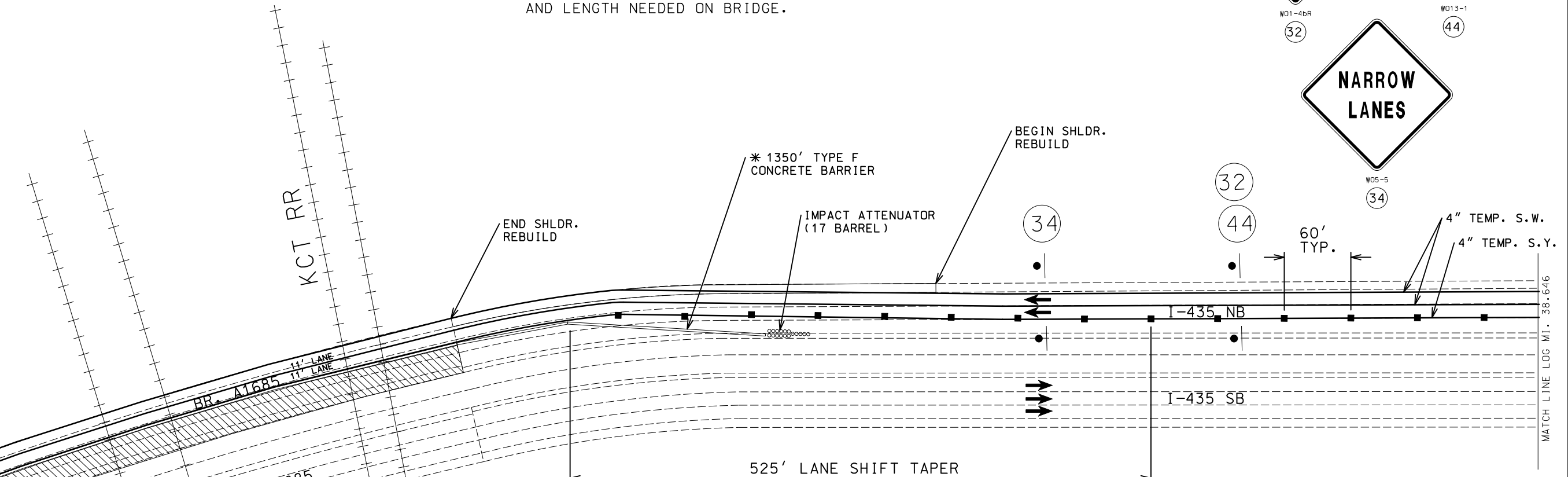
W01-4BR  
32



W013-1  
44



W05-5  
34



MATCH LINE LOG MI. 38.381

MATCH LINE LOG MI. 38.646

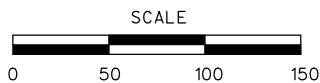
### TRAFFIC CONTROL LEGEND

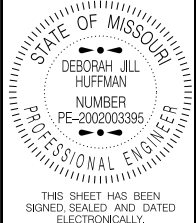
- SIGN (SINGLE SIDED)
- ◼ SIGN (DOUBLE SIDED)
- ◊ FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- E BARRICADE
- ▩ CHANGEABLE MESSAGE BOARD
- ◻ FLASHING ARROW PANEL
- ▬ TEMPORARY CONCRETE BARRIER
- ➔ TRAFFIC FLOW ARROWS

### NOTES:

1. TAPER CHANNELIZERS SHALL BE DIRECTIONAL INDICATOR BARRICADES WITH SEQUENTIAL FLASHING WARNING LIGHTS.
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6. SHOULDER REBUILD SHALL BE COMPLETED BEFORE BEGINNING PHASE 1 TRAFFIC CONTROL.

TEMPORARY TRAFFIC CONTROL SHEET  
PHASE 2  
SHEET 23 OF 34





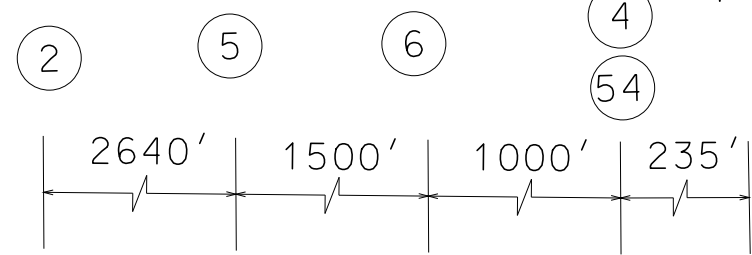
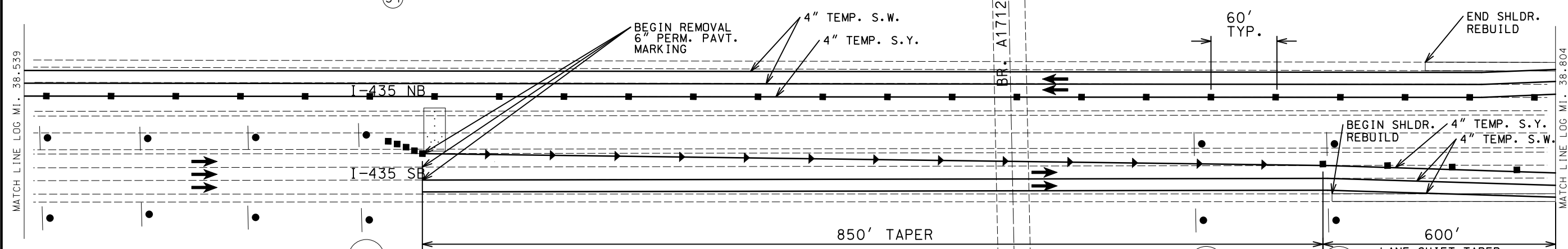
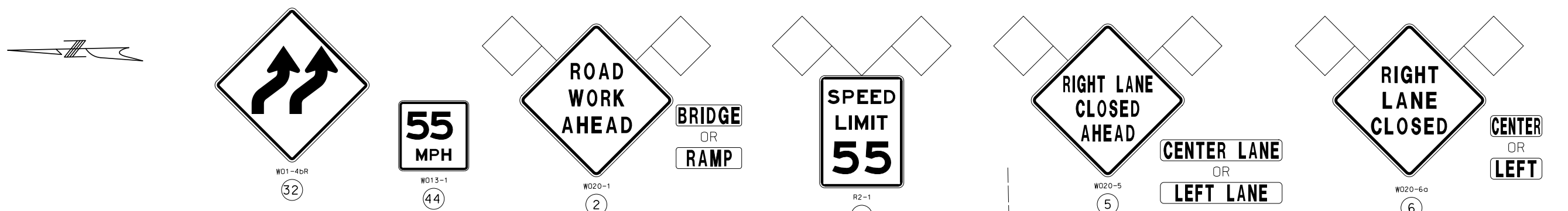
DATE PREPARED  
6/11/2015  
ROUTE  
I-435 STATE  
MO  
DISTRICT SHEET NO.  
KC 27  
COUNTY  
JACKSON  
JOB NO.  
J413022B  
CONTRACT ID.

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.

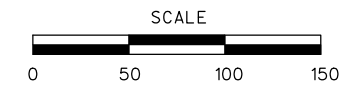


**TRAFFIC CONTROL LEGEND**

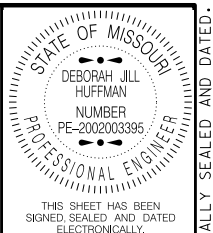
- SIGN (SINGLE SIDED)
- ◻ SIGN (DOUBLE SIDED)
- △ FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- E BARRICADE
- ▨ CHANGEABLE MESSAGE BOARD
- ▨ FLASHING ARROW PANEL
- TEMPORARY CONCRETE BARRIER
- TRAFFIC FLOW ARROWS

**NOTES:**

1. TAPER CHANNELIZERS SHALL BE DIRECTIONAL INDICATOR BARRICADES WITH SEQUENTIAL FLASHING WARNING LIGHTS.
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6. SHOULDER REBUILD SHALL BE COMPLETED BEFORE BEGINNING PHASE 1 TRAFFIC CONTROL.



TEMPORARY TRAFFIC CONTROL SHEET  
 PHASE 2  
 SHEET 24 OF 34



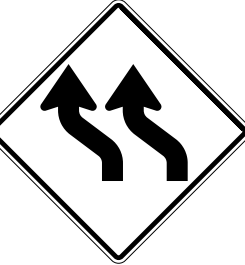
DATE PREPARED 6/11/2015	
ROUTE I-435	STATE MO
DISTRICT KC	SHEET NO. 28
COUNTY JACKSON	
JOB NO. J413022B	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

CMS MESSAGE BOARD TO DIRECT TRAFFIC ONTO THE I-435 SB ON RAMP TO DETOUR TO RTE. 12 TO I-435 NB DUE TO THE I-435 NB RAMP CLOSURE ON RTE. 24. SEE SHEETS 36 AND 37 FOR DETOUR SIGNING PLAN.

**ROAD CLOSED**

SPEED LIMIT 65

55 MPH



\* TYPE F TEMPORARY BARRIER LENGTH INCLUDES 176' TAPER AND 100' BUFFER LENGTH ON EACH END OF BRIDGE. TYPE F TEMPORARY BARRIER ON BRIDGE SHALL BE TIE-DOWN STRAP.

RAMP CLOSED

750' LANE SHIFT TAPER

4" TEMP. S.W.

4" TEMP. S.Y.

BEGIN SHLDR. REBUILD

END SHLDR. REBUILD

\* 650' TYPE F CONCRETE BARRIER

BEGIN SHLDR. REBUILD

IMPACT ATTENUATOR (17 BARREL)

60' TYP.

I-435 NB

I-435 SB

\* 650' TYPE F CONCRETE BARRIER

IMPACT ATTENUATOR (17 BARREL)

END SHLDR. REBUILD

4" TEMP. S.W.

4" TEMP. S.Y.

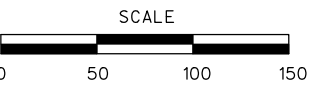
600' LANE SHIFT TAPER

**TRAFFIC CONTROL LEGEND**

- SIGN (SINGLE SIDED)
- ◐ SIGN (DOUBLE SIDED)
- FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- E BARRICADE
- ⊞ CHANGEABLE MESSAGE BOARD
- ◻ FLASHING ARROW PANEL
- TEMPORARY CONCRETE BARRIER
- ➔ TRAFFIC FLOW ARROWS

**NOTES:**

1. TAPER CHANNELIZERS SHALL BE DIRECTIONAL INDICATOR BARRICADES WITH SEQUENTIAL FLASHING WARNING LIGHTS.
2. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SIGNS AND INSTALLATION COMPLY WITH THE LATEST EDITION OF THE MUTCD.
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6. SHOULDER REBUILD SHALL BE COMPLETED BEFORE BEGINNING PHASE 1 TRAFFIC CONTROL.



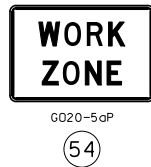
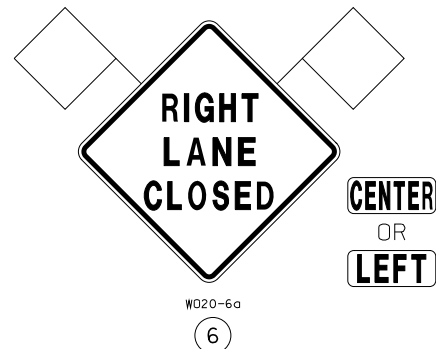
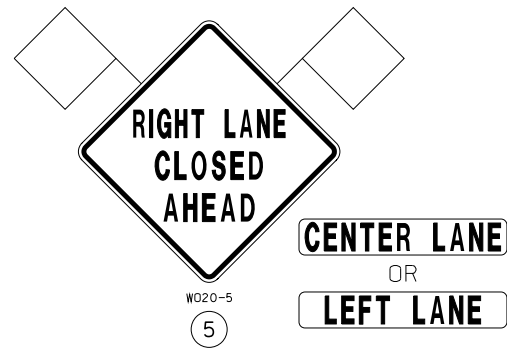
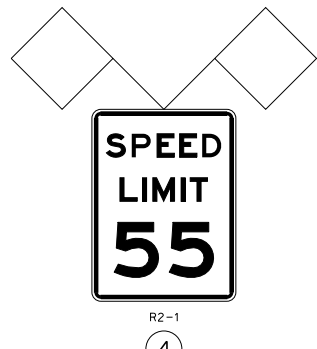
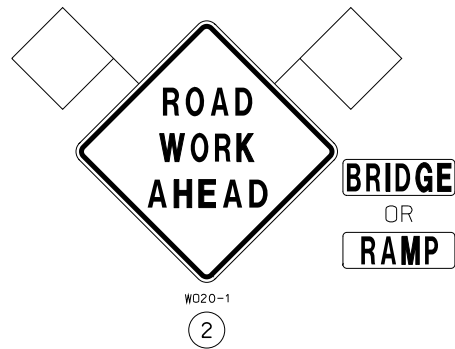
MATCH LINE LOG MI. 38.804

MATCH LINE LOG MI. 39.069

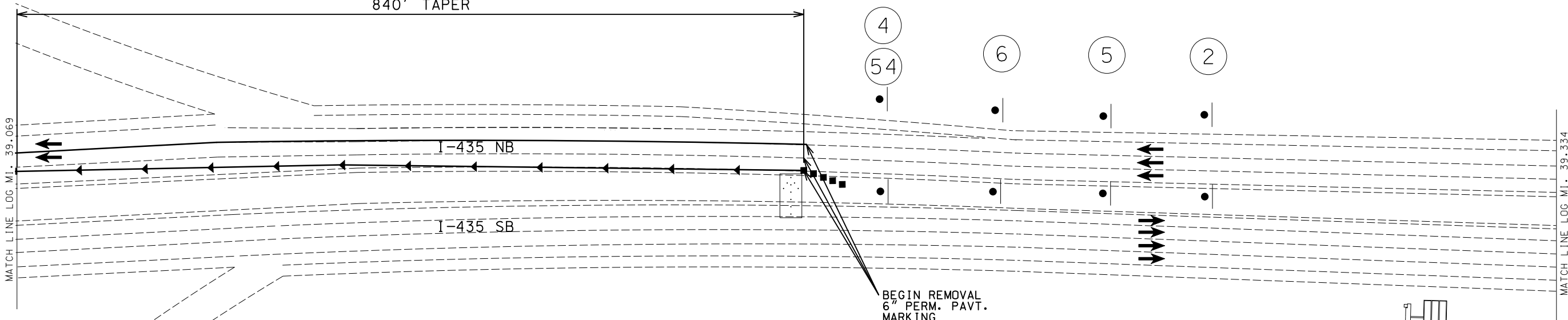
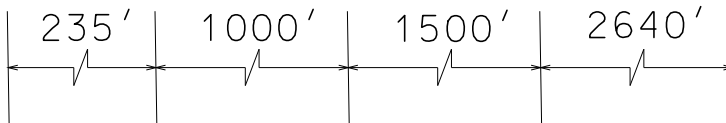
DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
 MoDOT  
 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.



840' TAPER



BEGIN REMOVAL  
6" PERM. PAVT.  
MARKING

CMS MESSAGE BOARD TO DIRECT TRAFFIC FROM THE RTE. 24 TO I-435 SB ON RAMP TO DETOUR TO RTE. 12 TO I-435 NB DUE TO THE I-435 NB RAMP CLOSURE ON RTE. 24. SEE SHEETS 36 AND 37 FOR DETOUR SIGNING PLAN.

**TRAFFIC CONTROL LEGEND**

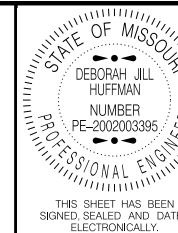
- SIGN (SINGLE SIDED)
- ◼ SIGN (DOUBLE SIDED)
- FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- E BARRICADE
- ▩ CHANGEABLE MESSAGE BOARD
- ▨ FLASHING ARROW PANEL
- TEMPORARY CONCRETE BARRIER
- ➔ TRAFFIC FLOW ARROWS



**NOTES:**

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6. SHOULDER REBUILD SHALL BE COMPLETED BEFORE BEGINNING PHASE 1 TRAFFIC CONTROL.

TEMPORARY TRAFFIC CONTROL SHEET  
PHASE 2  
SHEET 26 OF 34



DATE PREPARED  
6/11/2015

ROUTE I-435 STATE MO  
DISTRICT KC SHEET NO. 29

COUNTY JACKSON  
JOB NO. J413022B  
CONTRACT ID.

PROJECT NO.

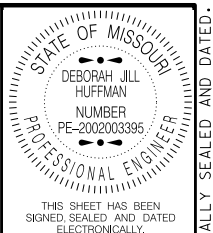
BRIDGE NO.

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.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 6/11/2015

ROUTE: I-435 STATE: MO

DISTRICT: KC SHEET NO.: 30

COUNTY: JACKSON

JOB NO.: J413022B

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

DATE	DESCRIPTION

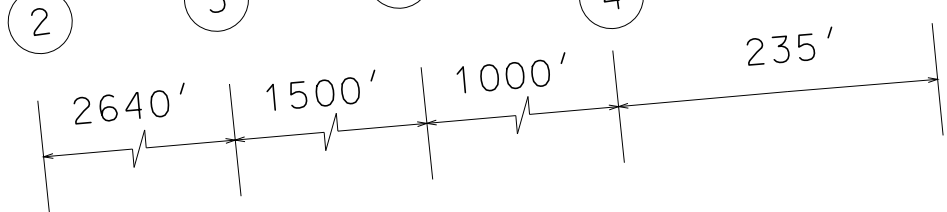
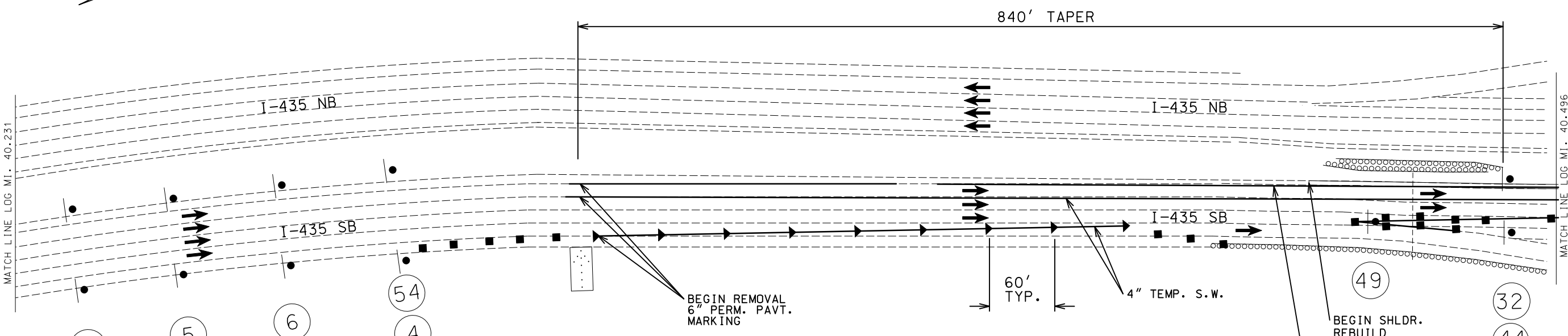
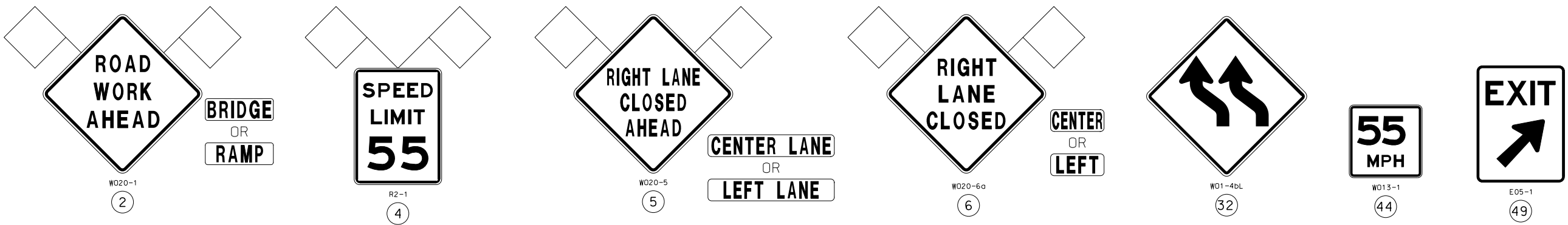
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

105 WEST CAPITOL JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

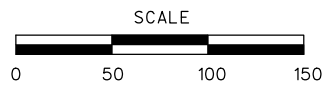
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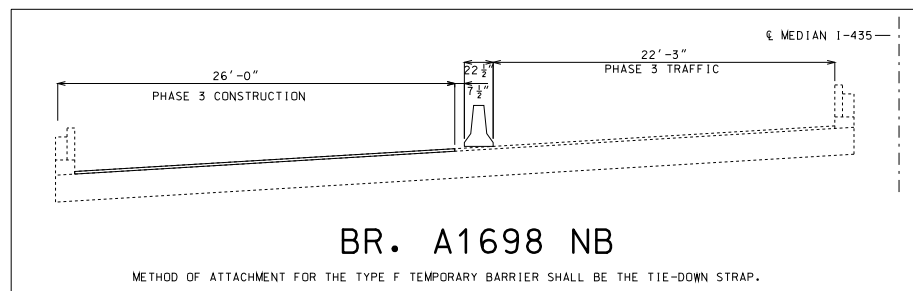
**TRAFFIC CONTROL LEGEND**

- SIGN (SINGLE SIDED)
- ◻ SIGN (DOUBLE SIDED)
- FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ◆ TUBULAR MARKER
- E BARRICADE
- ▨ CHANGEABLE MESSAGE BOARD
- ▨ FLASHING ARROW PANEL
- TEMPORARY CONCRETE BARRIER
- ➔ TRAFFIC FLOW ARROWS

- NOTES:**
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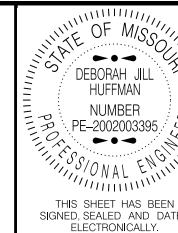
TEMPORARY TRAFFIC CONTROL SHEET  
 PHASE 3  
 SHEET 27 OF 34



\* TYPE F TEMPORARY BARRIER LENGTH INCLUDES 176' TAPER AND 100' BUFFER LENGTH ON EACH END OF BRIDGE. TYPE F TEMPORARY BARRIER ON BRIDGE SHALL BE TIE-DOWN STRAP.

**SPEED LIMIT**  
**65**

R2-1  
25



DATE PREPARED  
6/11/2015

ROUTE I-435 STATE MO  
DISTRICT KC SHEET NO. 31

COUNTY JACKSON  
JOB NO. J413022B  
CONTRACT ID.

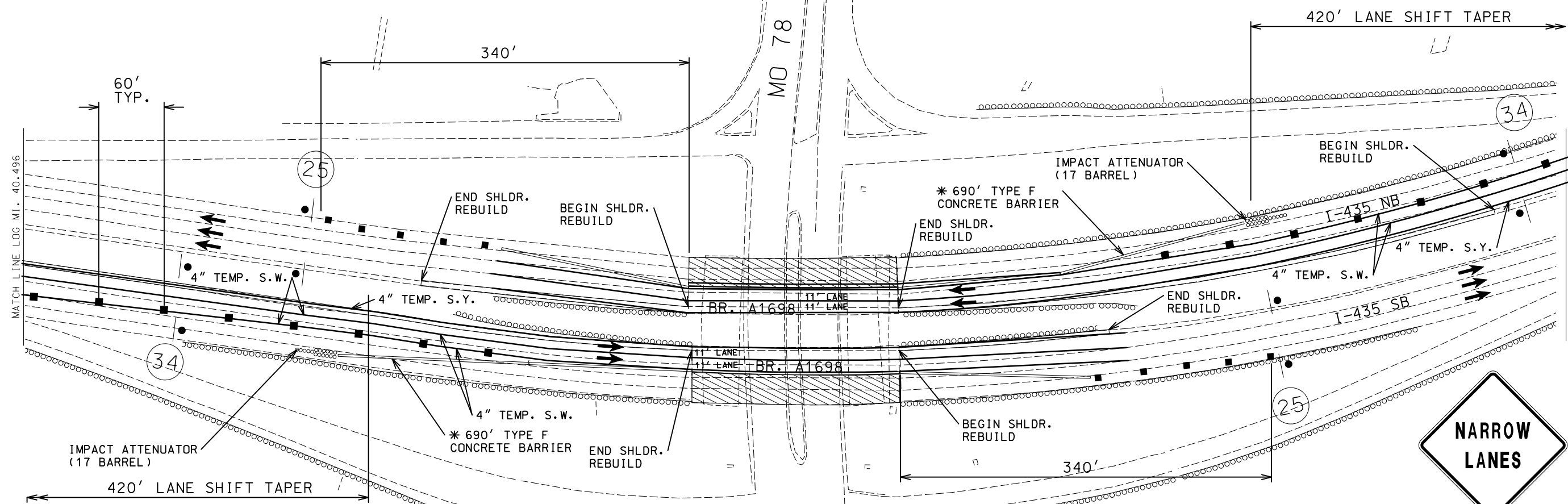
PROJECT NO.  
BRIDGE NO.

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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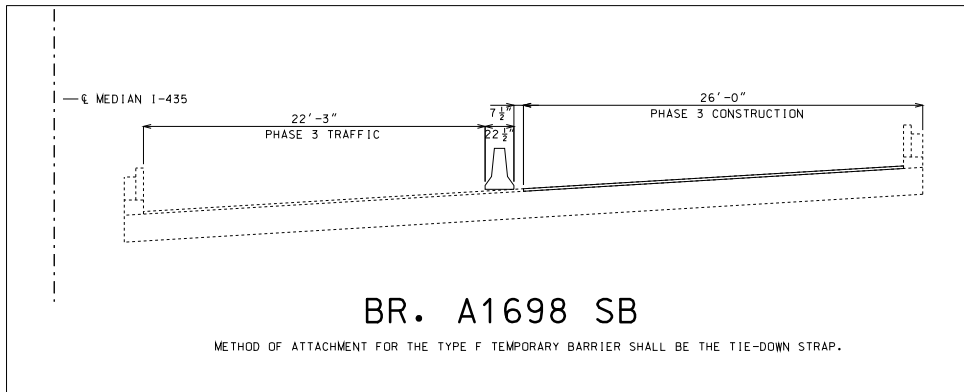
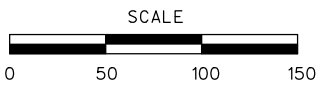


**TRAFFIC CONTROL LEGEND**

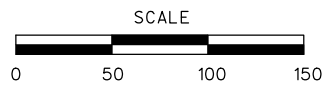
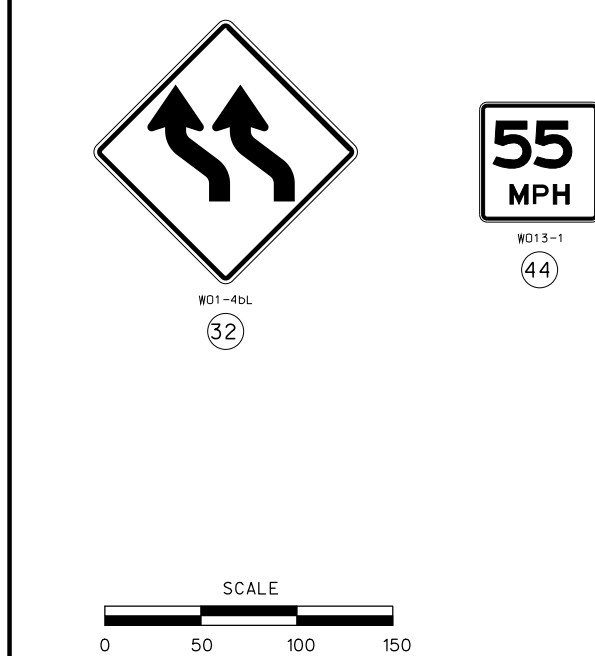
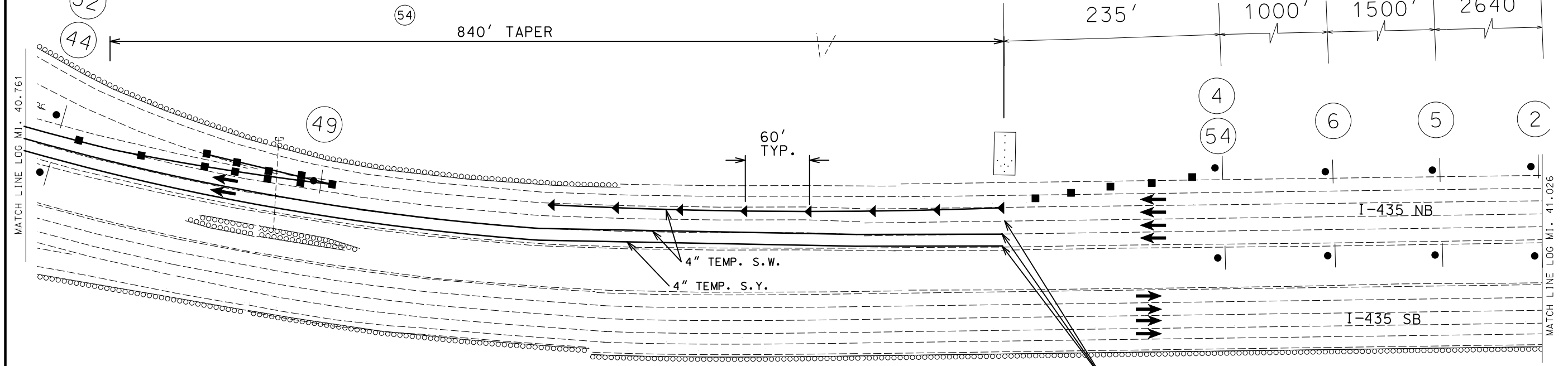
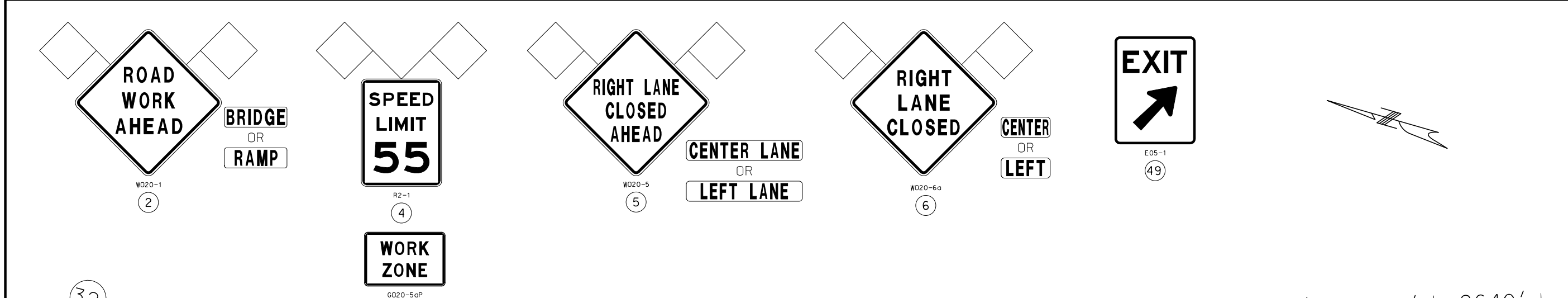
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TEMPORARY TRAFFIC CONTROL SHEET  
PHASE 3  
SHEET 28 OF 34



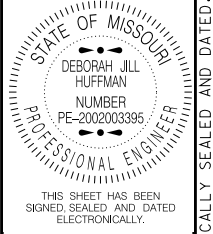
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BEGIN REMOVAL 6" PERM. PAVT. MARKING



DATE PREPARED  
6/11/2015

ROUTE	STATE
I-435	MO
DISTRICT	SHEET NO.
KC	32

COUNTY  
**JACKSON**

JOB NO.  
**J413022B**

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

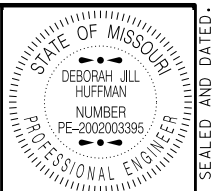
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

TEMPORARY TRAFFIC CONTROL SHEET  
PHASE 3  
SHEET 29 OF 34

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





THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
6/11/2015

ROUTE I-435 STATE MO

DISTRICT KC SHEET NO. 33

COUNTY JACKSON

JOB NO. J413022B

CONTRACT ID.

PROJECT NO.

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DATE	DESCRIPTION

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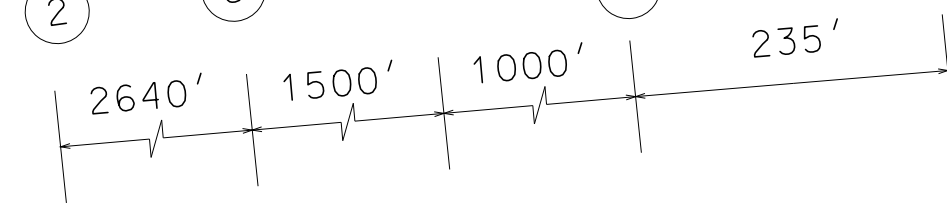
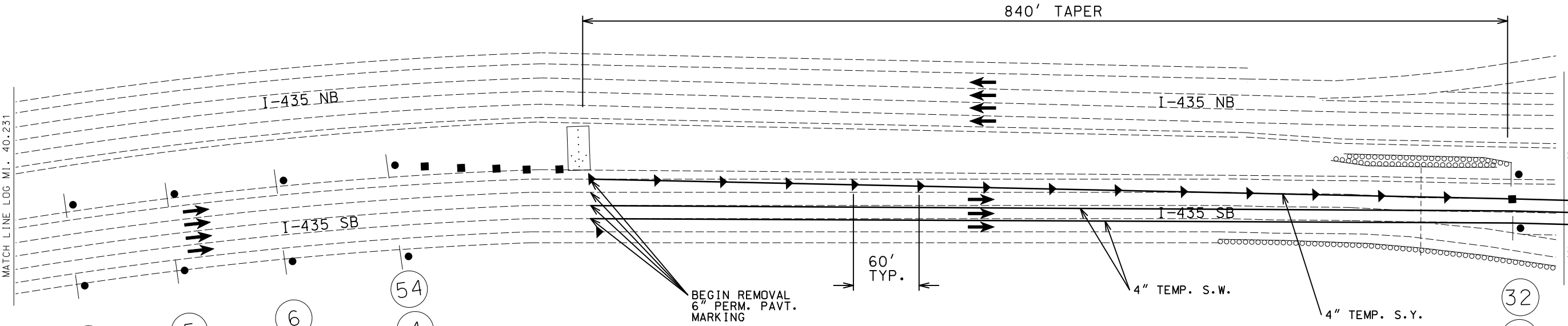
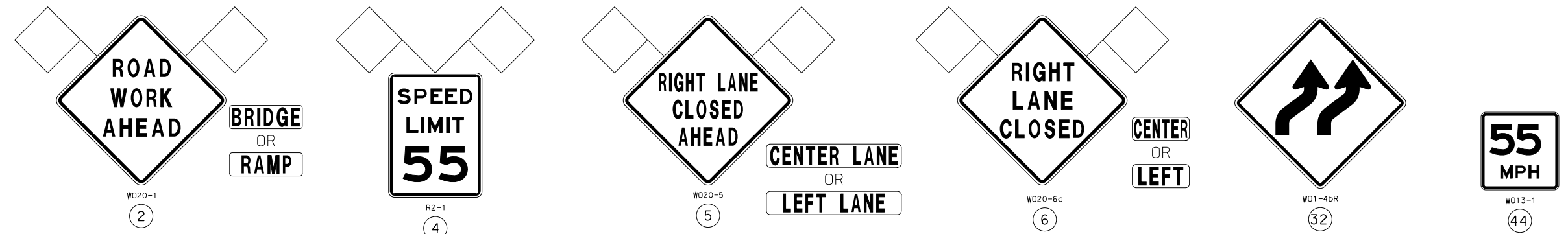
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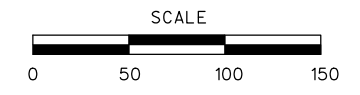


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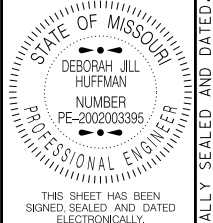
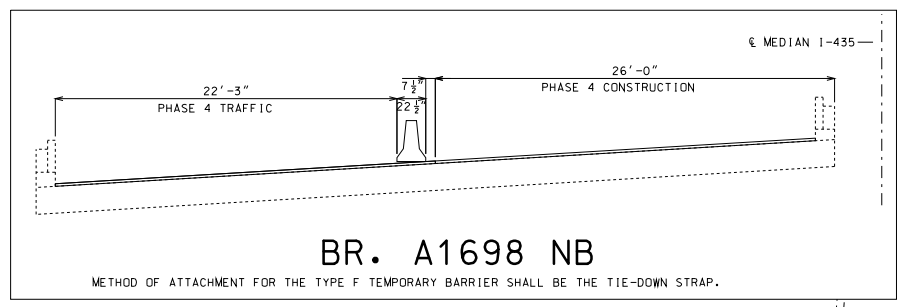
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

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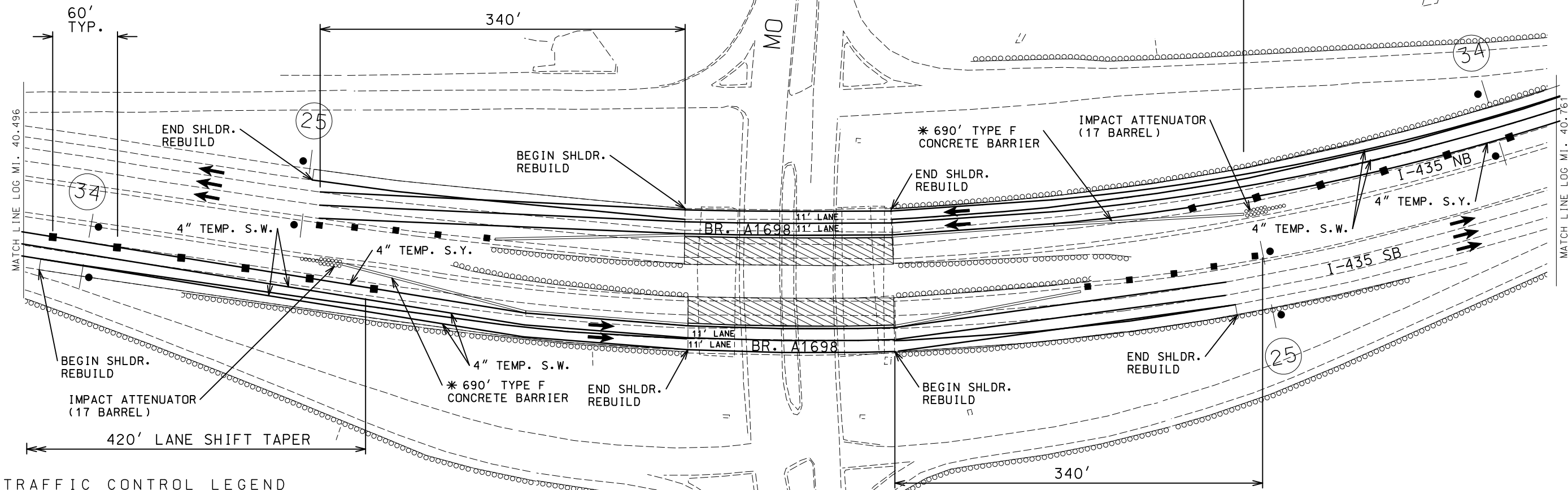
DATE PREPARED  
6/11/2015

ROUTE I-435 STATE MO  
DISTRICT KC SHEET NO. 34

COUNTY JACKSON  
JOB NO. J413022B  
CONTRACT ID.

PROJECT NO.  
BRIDGE NO.

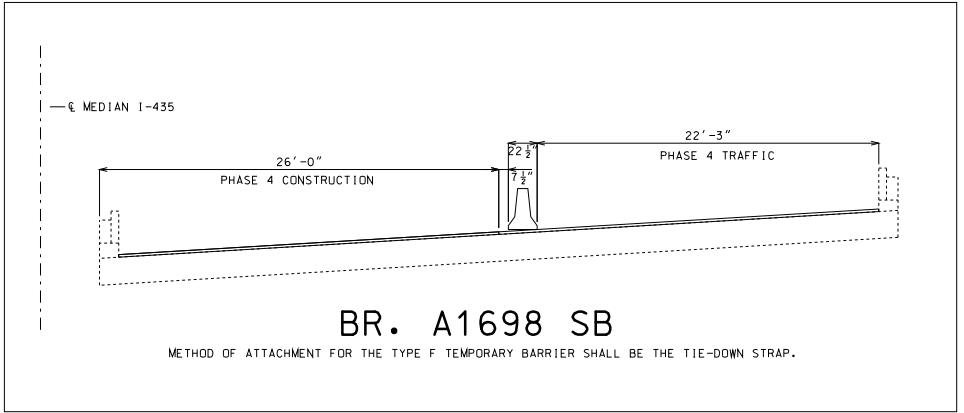
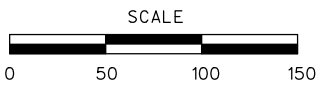
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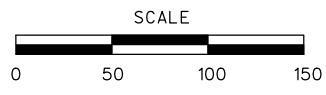
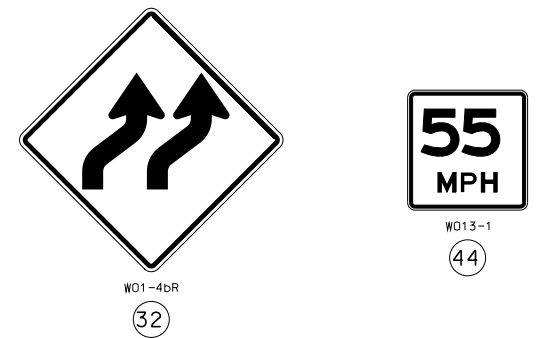
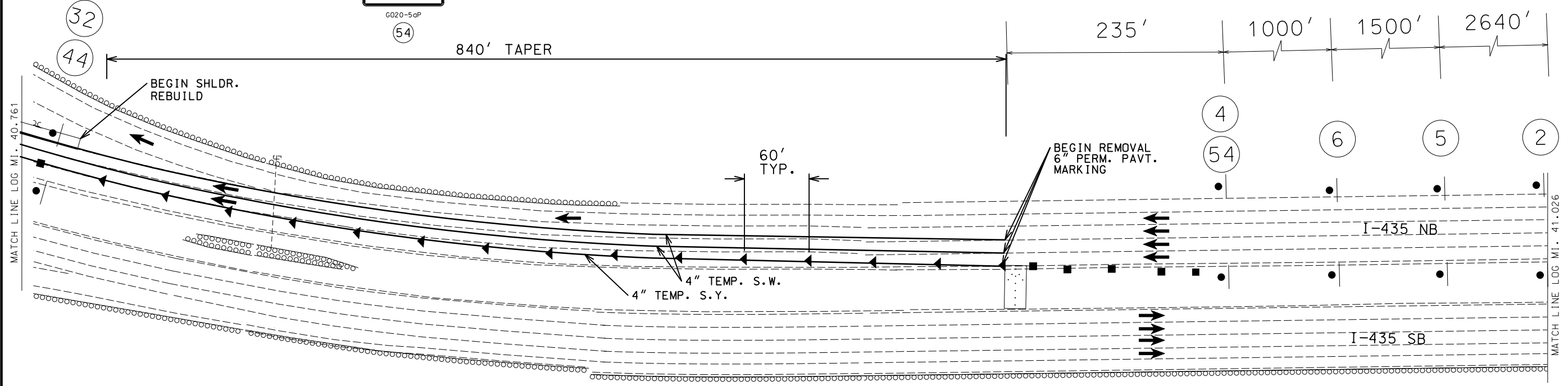
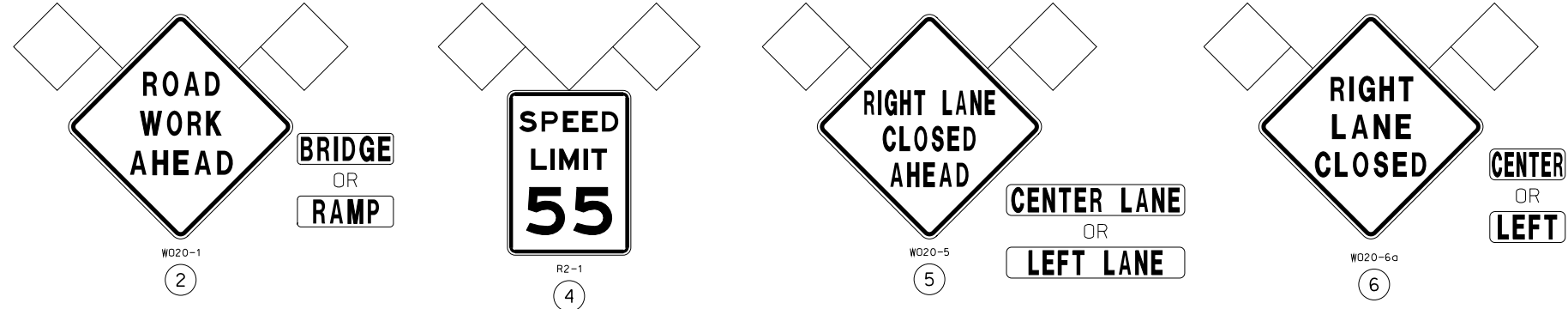
TEMPORARY TRAFFIC CONTROL SHEET  
PHASE 4  
SHEET 31 OF 34

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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TEMPORARY TRAFFIC CONTROL SHEET  
 PHASE 4  
 SHEET 32 OF 34

STATE OF MISSOURI  
 DEBORAH JILL HUFFMAN  
 NUMBER PE-202003395  
 PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 6/11/2015

ROUTE I-435	STATE MO
DISTRICT KC	SHEET NO. 35

COUNTY JACKSON  
 JOB NO. J413022B  
 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)

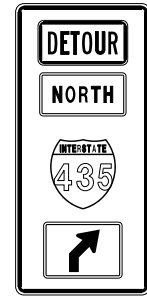
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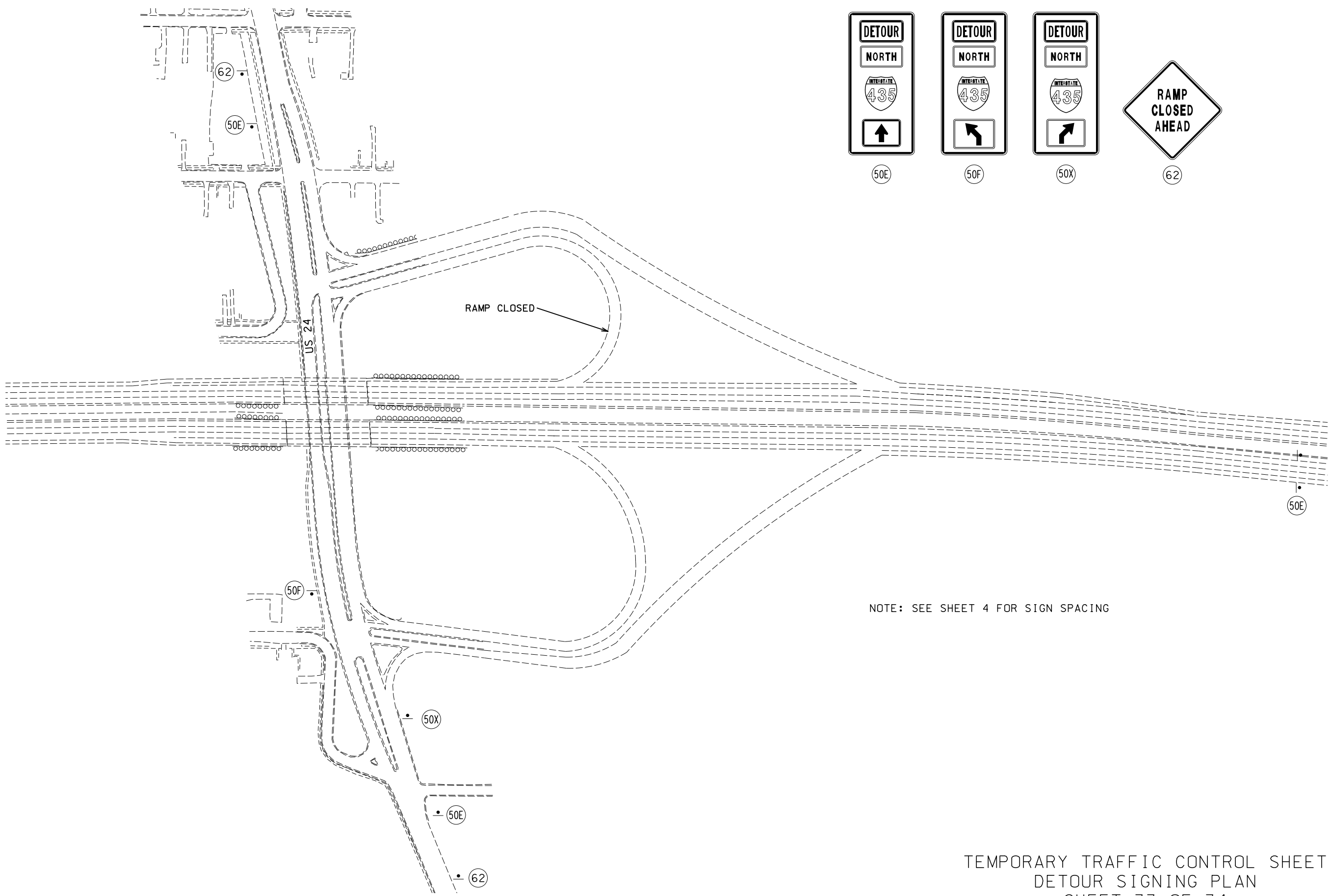
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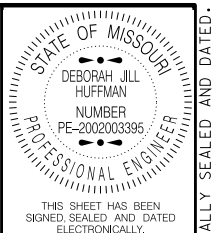


62



NOTE: SEE SHEET 4 FOR SIGN SPACING

TEMPORARY TRAFFIC CONTROL SHEET  
DETOUR SIGNING PLAN  
SHEET 33 OF 34



STATE OF MISSOURI  
DEBORAH JILL HUFFMAN  
NUMBER PE-2002003395  
PROFESSIONAL ENGINEER  
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.  
DATE PREPARED 6/11/2015  
ROUTE I-435 STATE MO  
DISTRICT KC SHEET NO. 36  
COUNTY JACKSON  
JOB NO. J413022B  
CONTRACT ID.

PROJECT NO.  
BRIDGE NO.

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
**MoDOT**  
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-278-6636)

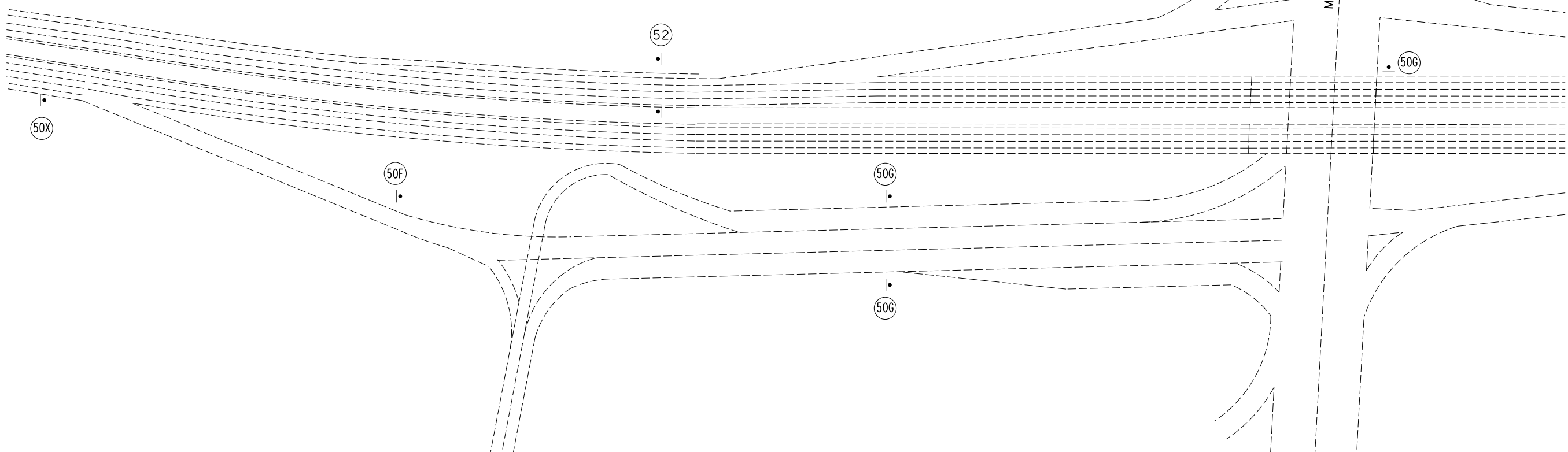
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50E	50F	50G	50X

**END  
DETOUR**

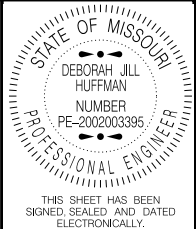
MD4-8a

52



NOTE: SEE SHEET 4 FOR SIGN SPACING

TEMPORARY TRAFFIC CONTROL SHEET  
DETOUR SIGNING PLAN  
SHEET 34 OF 34



THIS SHEET HAS BEEN  
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DATE PREPARED 6/11/2015	
ROUTE I-435	STATE MO
DISTRICT KC	SHEET NO. 37
COUNTY JACKSON	
JOB NO. J413022B	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

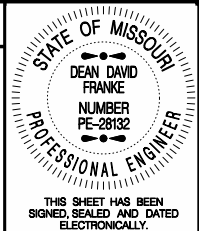
MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

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**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION**  
**U.I.P. & REHAB. EXISTING (43'-72'-43') CONTINUOUS CONCRETE VOIDED SLAB SPANS**

SEC/SUR 30    TWP 50N    RGE 32W



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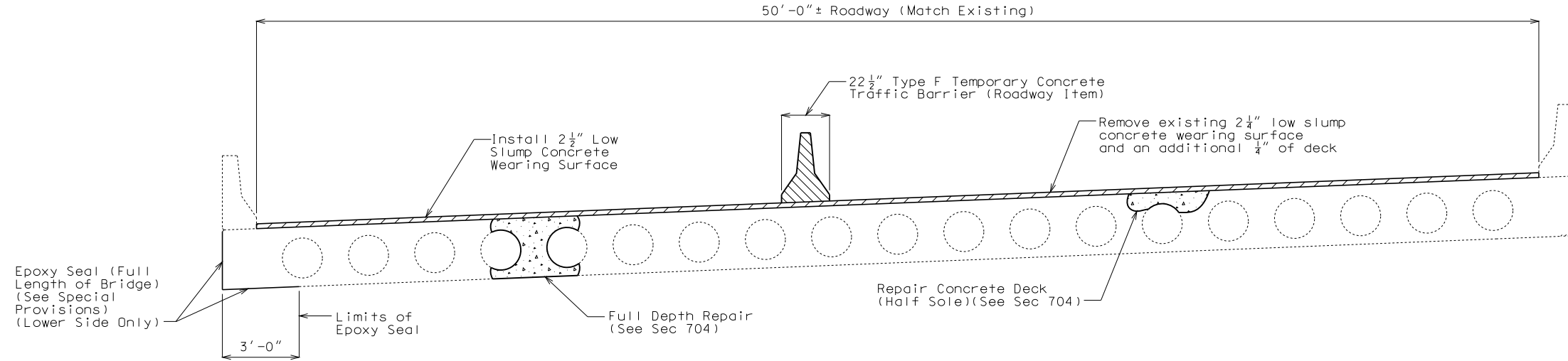
DATE PREPARED  
1/15/2015  
ROUTE I-435    STATE MO  
DISTRICT BR    SHEET NO. 1  
COUNTY JACKSON  
JOB NO. J413022B  
CONTRACT ID.

PROJECT NO.  
BRIDGE NO. A16824

DATE	DESCRIPTION

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

REPAIRS TO BRIDGE: I-435 NBL  
 OVER FRONT STREET  
 STATE ROAD FROM MISSOURI RIVER TO RTE. I-70  
 ABOUT 5.2 MILES NORTH OF RTE. I-70  
 STA. 76+83.72± (MATCH EXISTING)    STD. 617.20



SECTION THRU SLAB

**General Notes:**

Design Specifications:  
 2002 AASHTO LFD (17th Ed.) Standard Specifications  
 Bridge Deck Rating = 6

**Traffic Control:**

Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

**Miscellaneous:**

Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

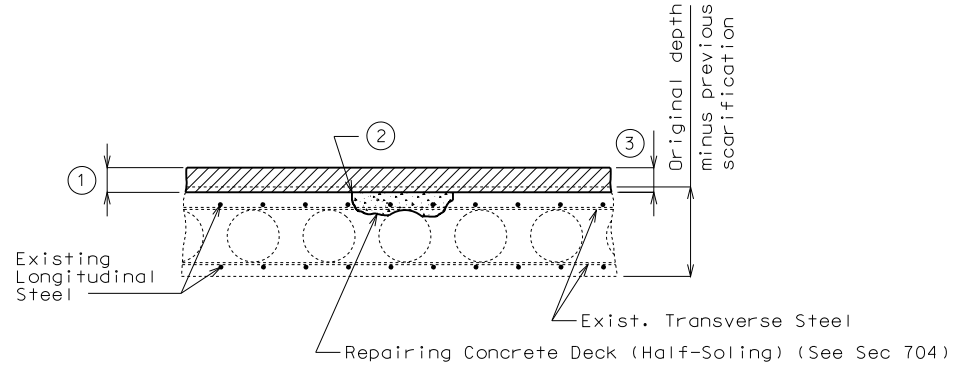
Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

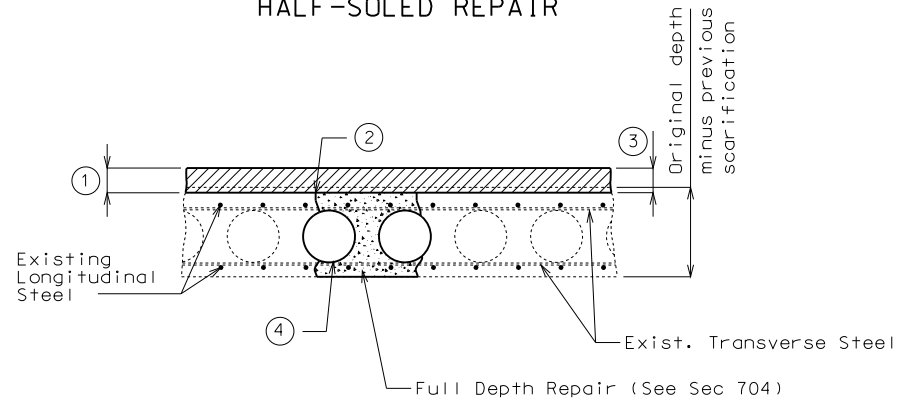
In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

**Estimated Quantities**

Item	Unit	Total
Removal of Concrete Wearing Surface	sq. foot	8030
Low Slump Concrete Wearing Surface	sq. yard	892
Repairing Concrete Deck (Half-Soling)	sq. foot	900
Full Depth Repair	sq. foot	100
Clean and Epoxy Seal	sq. foot	830



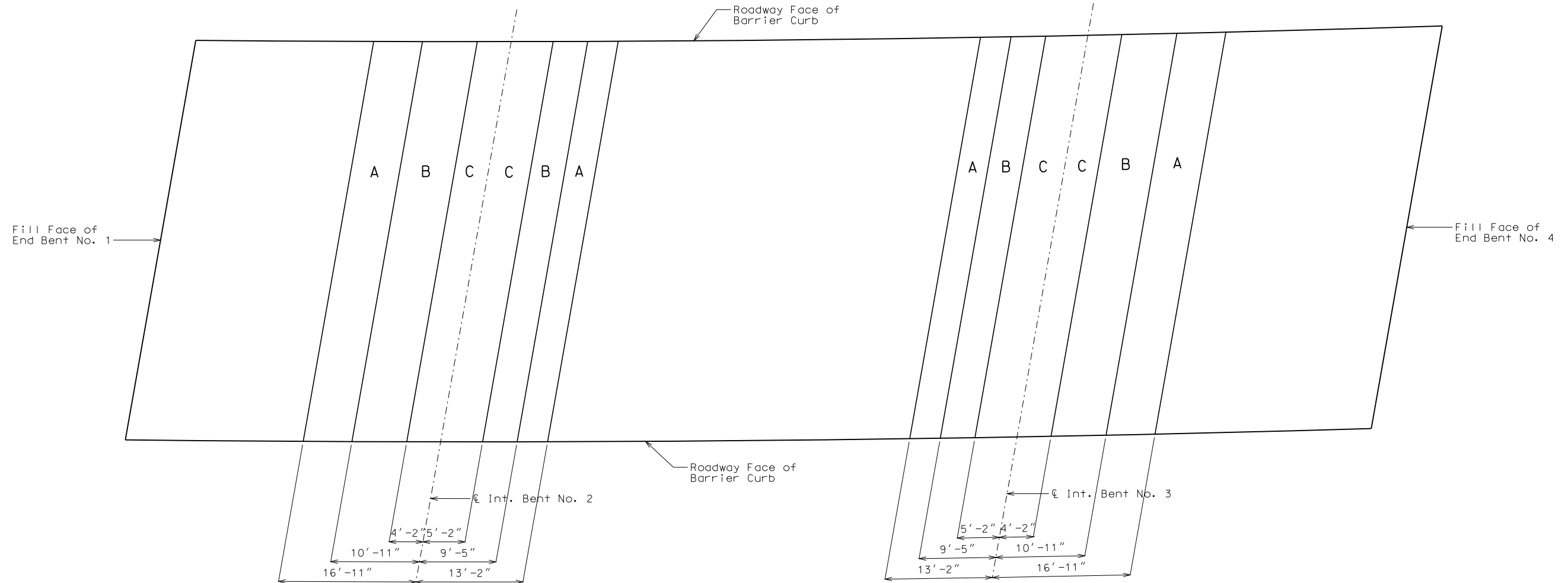
HALF-SOLED REPAIR



FULL DEPTH REPAIR

- ① Remove existing 2 1/4" low slump concrete wearing surface and an additional 1/4" of deck.
- ② One inch vertical side shall be established outside the deteriorated area. See Sec 704.
- ③ 2 1/2" Low Slump Concrete Wearing Surface.
- ④ Reform existing weephole, if encountered.

**DECK REPAIR DETAILS**



PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for that zone. Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

When a deteriorated portion of the void tube is beyond the point of patching as determined by the engineer, the portion of the deteriorated void tube shall be replaced. The void area shall be maintained completely free of concrete. Cutting of the longitudinal reinforcing steel will not be permitted. The fiber tubes for producing the voids shall have an outside diameter with the wall thickness the same as the existing tubes and anchored at not more than the original spacing. Cost of replacing the void tube will be considered completely covered by the contract unit price for Full Depth Repair.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
1/15/2015

ROUTE I-435	STATE MO
DISTRICT BR	SHEET NO. 2

COUNTY  
JACKSON

JOB NO.  
J413022B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A16824

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.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
 U.I.P. & REHAB. EXISTING (43'-72'-43') CONTINUOUS CONCRETE VOIDED SLAB SPANS

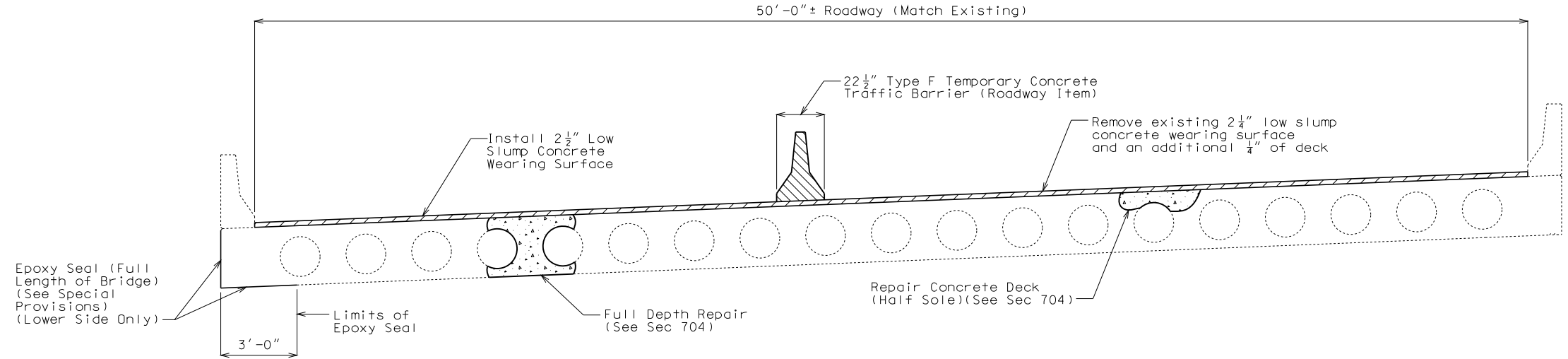
STATE OF MISSOURI  
 DEAN DAVID FRANK  
 NUMBER PE-28132  
 PROFESSIONAL ENGINEER  
 THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/15/2015  
 ROUTE I-435 STATE MO  
 DISTRICT BR SHEET NO. 1  
 COUNTY JACKSON  
 JOB NO. J413022B  
 CONTRACT ID.  
 PROJECT NO.  
 BRIDGE NO. A16825

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.



SECTION THRU SLAB

General Notes:

Design Specifications:  
 2002 AASHTO LFD (17th Ed.) Standard Specifications  
 Bridge Deck Rating = 6

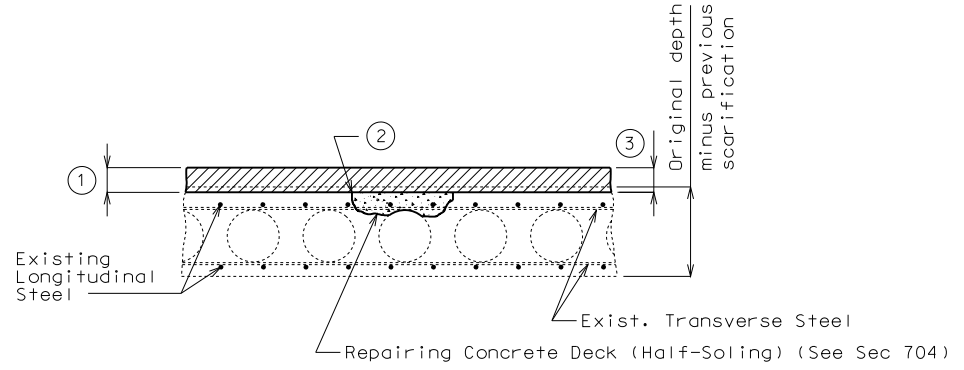
Traffic Control:  
 Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Miscellaneous:  
 Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

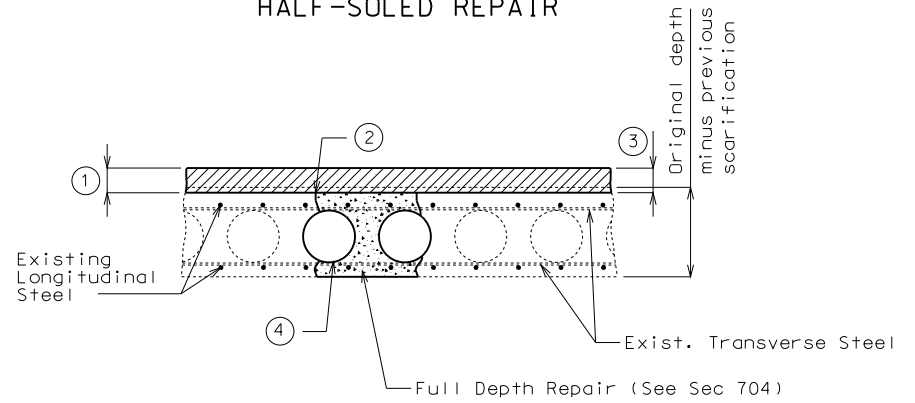
Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.



HALF-SOLED REPAIR



FULL DEPTH REPAIR

- ① Remove existing 2 1/4" low slump concrete wearing surface and an additional 1/4" of deck.
- ② One inch vertical side shall be established outside the deteriorated area. See Sec 704.
- ③ 2 1/2" Low Slump Concrete Wearing Surface.
- ④ Reform existing weephole, if encountered.

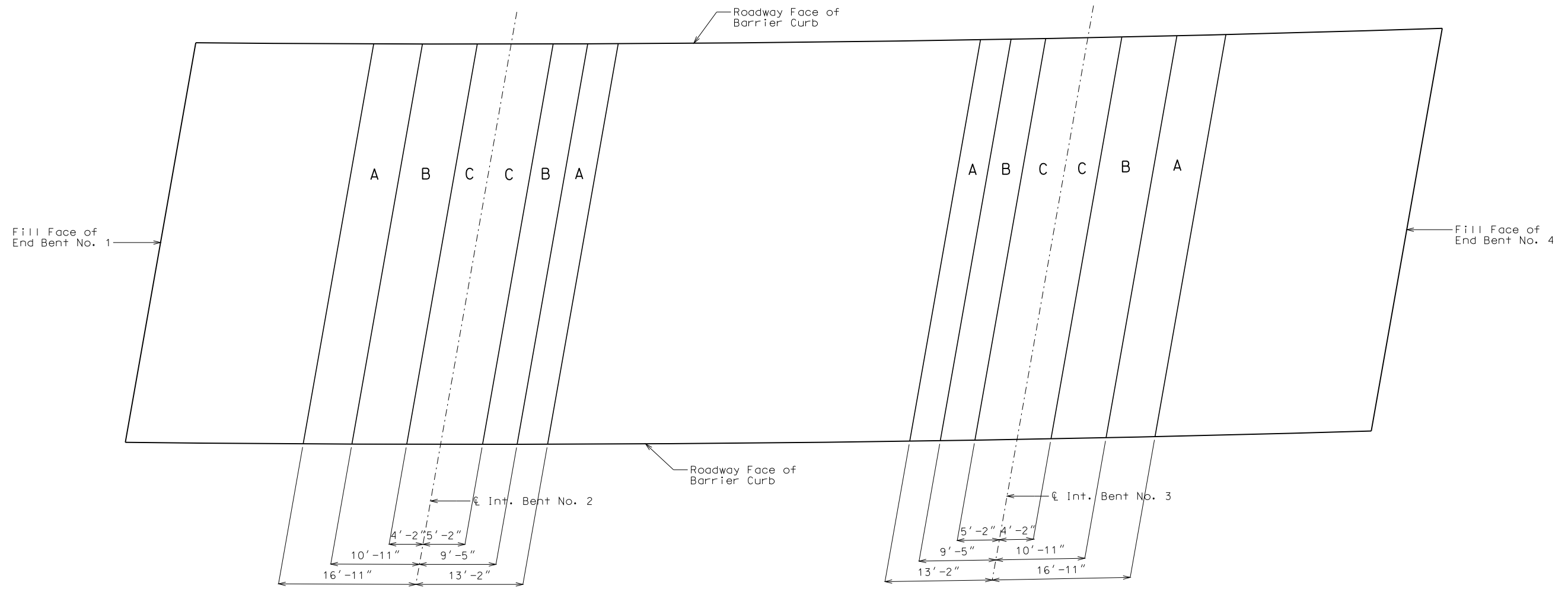
DECK REPAIR DETAILS

Estimated Quantities		
Item		Total
Removal of Concrete Wearing Surface	sq. foot	8025
Low Slump Concrete Wearing Surface	sq. yard	892
Repairing Concrete Deck (Half-Soling)	sq. foot	1100
Full Depth Repair	sq. foot	200
Clean and Epoxy Seal	sq. foot	830

REPAIRS TO BRIDGE: I-435 SBL OVER FRONT STREET

STATE ROAD FROM MISSOURI RIVER TO RTE. I-70  
 ABOUT 5.2 MILES NORTH OF RTE. I-70  
 STA. 76+71+96± (MATCH EXISTING)





PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

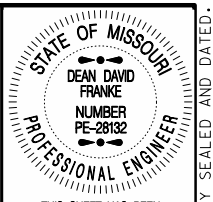
Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for that zone. Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

When a deteriorated portion of the void tube is beyond the point of patching as determined by the engineer, the portion of the deteriorated void tube shall be replaced. The void area shall be maintained completely free of concrete. Cutting of the longitudinal reinforcing steel will not be permitted. The fiber tubes for producing the voids shall have an outside diameter with the wall thickness the same as the existing tubes and anchored at not more than the original spacing. Cost of replacing the void tube will be considered completely covered by the contract unit price for Full Depth Repair.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
1/15/2015

ROUTE I-435	STATE MO
DISTRICT BR	SHEET NO. 2

COUNTY  
JACKSON  
JOB NO.  
J413022B  
CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A16825

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.

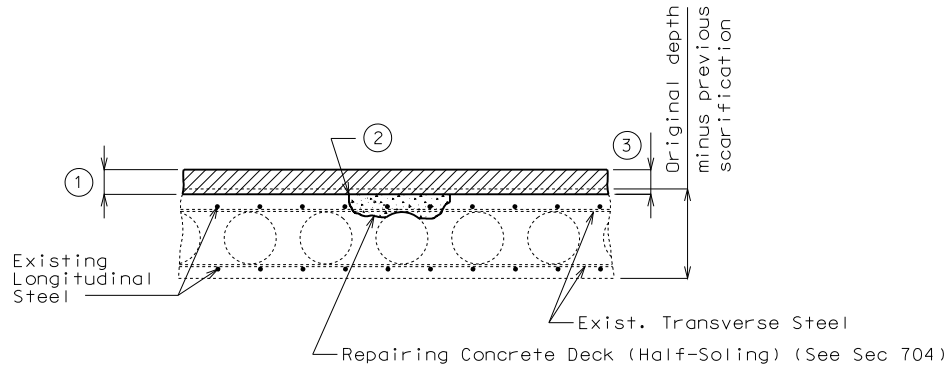
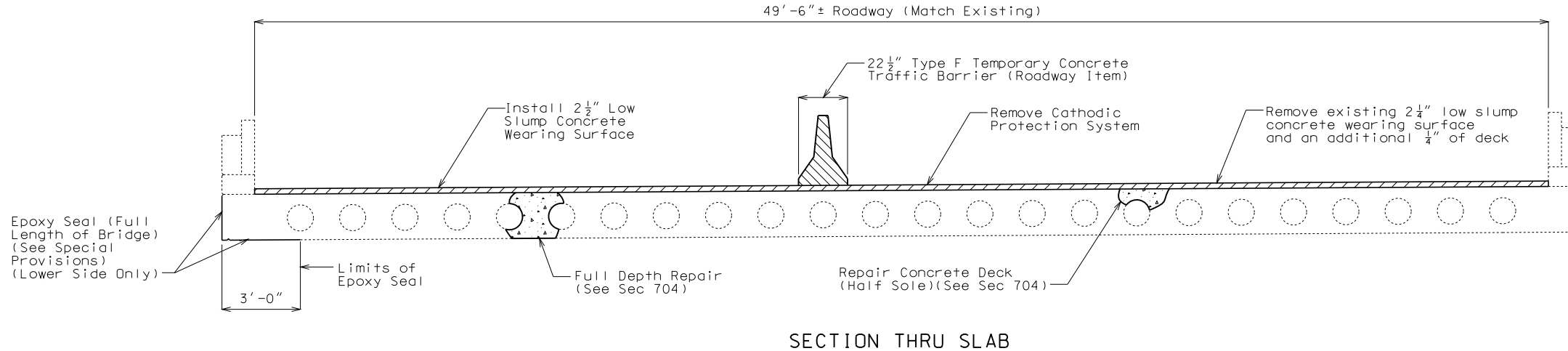
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
 U.I.P. & REHAB. EXISTING (34'-53'-53'-38') CONTINUOUS CONCRETE VOIDED SLAB SPANS

STATE OF MISSOURI  
 DEAN DAVID FRANK  
 NUMBER PE-28132  
 PROFESSIONAL ENGINEER  
 THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

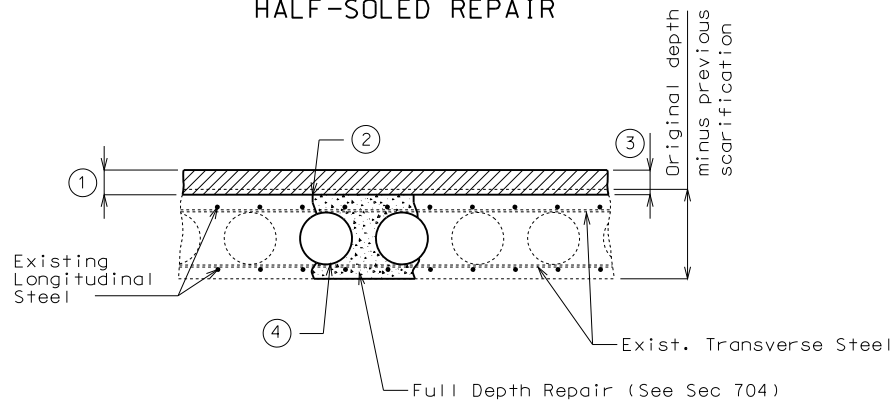
DATE PREPARED 1/15/2015  
 ROUTE I-435 STATE MO  
 DISTRICT BR SHEET NO. 1  
 COUNTY JACKSON  
 JOB NO. J413022B  
 CONTRACT ID.  
 PROJECT NO.  
 BRIDGE NO. A16984

DESCRIPTION	DATE

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



HALF-SOLED REPAIR



FULL DEPTH REPAIR

- ① Remove existing 2 1/4" low slump concrete wearing surface and an additional 1/4" of deck.
- ② One inch vertical side shall be established outside the deteriorated area. See Sec 704.
- ③ 2 1/2" Low Slump Concrete Wearing Surface.
- ④ Reform existing weephole, if encountered.

DECK REPAIR DETAILS

General Notes:

**Design Specifications:**  
 2002 AASHTO LFD (17th Ed.) Standard Specifications  
 Bridge Deck Rating = 5

**Traffic Control:**  
 Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

**Miscellaneous:**  
 Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

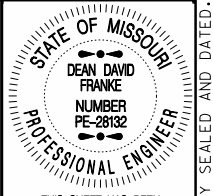
Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Estimated Quantities		
Item		Total
Removal of Concrete Wearing Surface	sq. foot	8935
Removal of Cathodic Protection System	lump sum	1
Low Slump Concrete Wearing Surface	sq. yard	993
Repairing Concrete Deck (Half-Soling)	sq. foot	1000
Full Depth Repair	sq. foot	100
Clean and Epoxy Seal	sq. foot	835

REPAIRS TO BRIDGE: I-435 NBL  
 OVER 23RD STREET  
 STATE ROAD FROM THE MISSOURI RIVER TO RTE. I-70  
 ABOUT 1.7 MILES NORTH OF RTE. I-70  
 STA. 265+31.93± (MATCH EXISTING) STD. 617.20



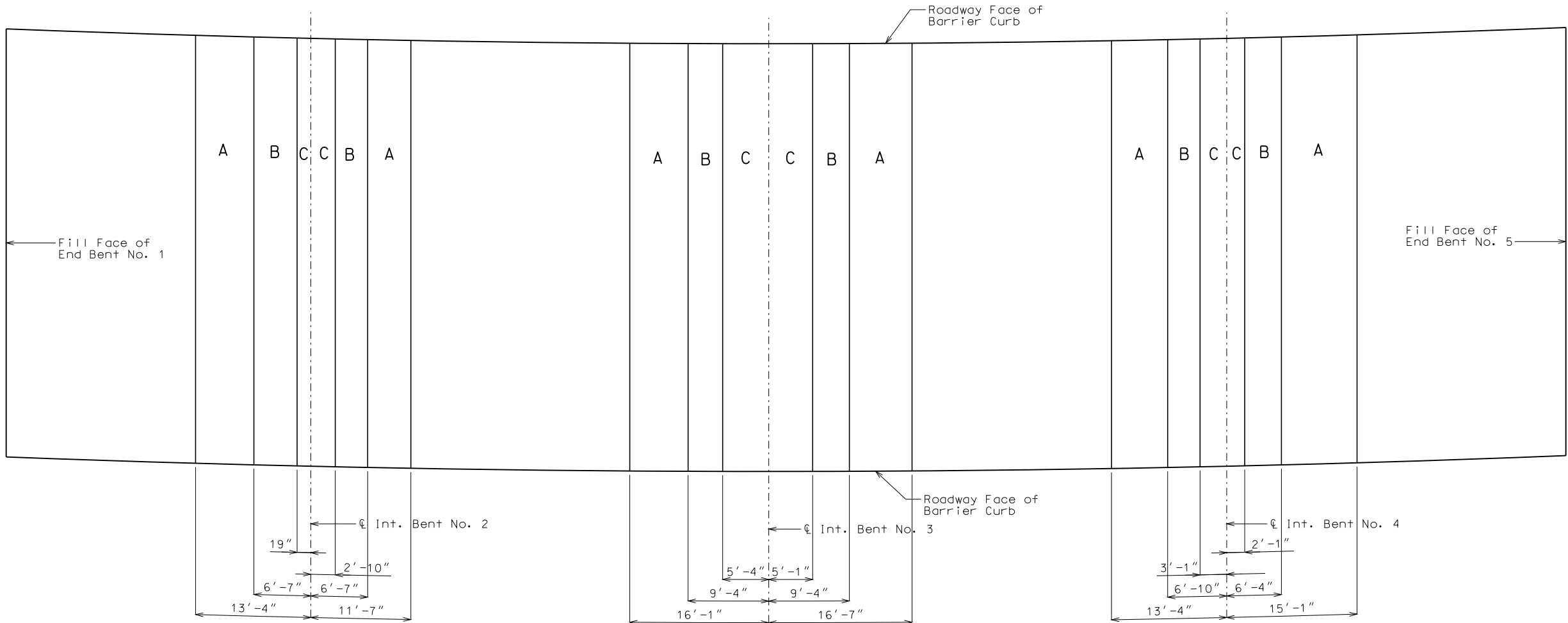
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 1/15/2015  
 ROUTE: I-435 STATE: MO  
 DISTRICT: BR SHEET NO.: 2  
 COUNTY: JACKSON  
 JOB NO.: J413022B  
 CONTRACT ID.:  
 PROJECT NO.:  
 BRIDGE NO.: A16984

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.



PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

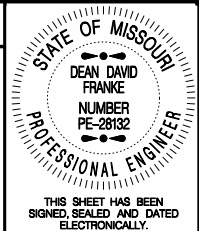
Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for that zone. Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

When a deteriorated portion of the void tube is beyond the point of patching as determined by the engineer, the portion of the deteriorated void tube shall be replaced. The void area shall be maintained completely free of concrete. Cutting of the longitudinal reinforcing steel will not be permitted. The fiber tubes for producing the voids shall have an outside diameter with the wall thickness the same as the existing tubes and anchored at not more than the original spacing. Cost of replacing the void tube will be considered completely covered by the contract unit price for Full Depth Repair.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
 U.I.P. & REHAB. EXISTING (34'-53'-53'-38') CONTINUOUS CONCRETE VOIDED SLAB SPANS



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
1/15/2015  
 ROUTE I-435 STATE MO  
 DISTRICT BR SHEET NO. 1  
 COUNTY JACKSON  
 JOB NO. J413022B  
 CONTRACT ID.  
 PROJECT NO.  
 BRIDGE NO. A16985

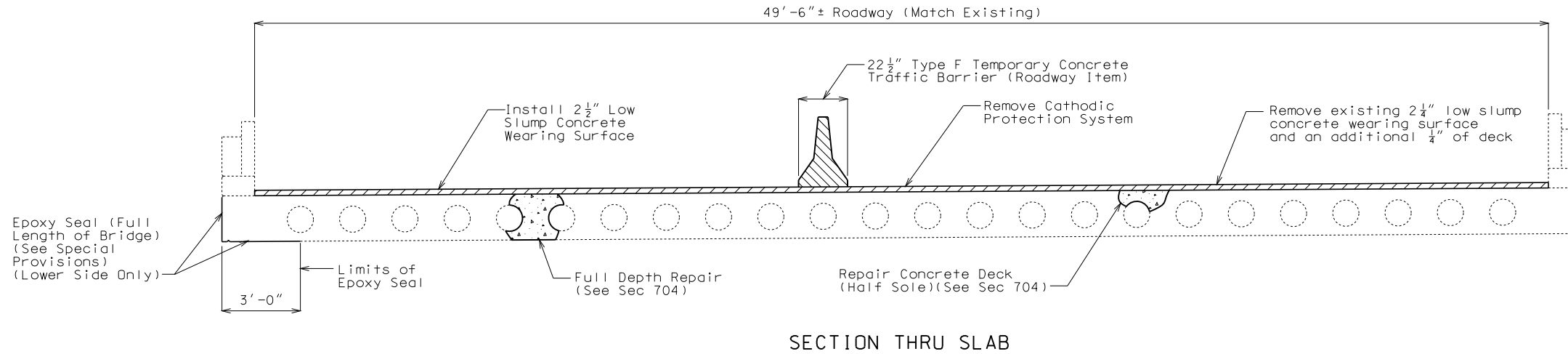
DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION



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



SECTION THRU SLAB

General Notes:

Design Specifications:  
 2002 AASHTO LFD (17th Ed.) Standard Specifications  
 Bridge Deck Rating = 6

Traffic Control:  
 Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

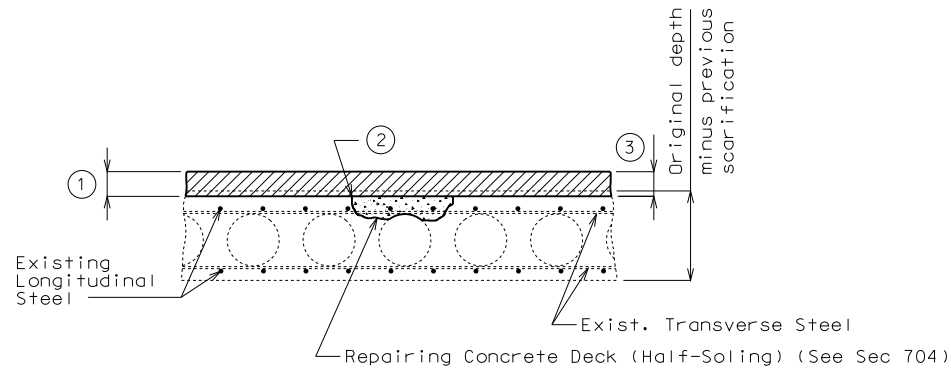
Miscellaneous:  
 Roadway surfacing adjacent to bridge ends shall match bridge overlay (Rdwy. Item).

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.  
 Contractor shall verify all dimensions in field before ordering new material.

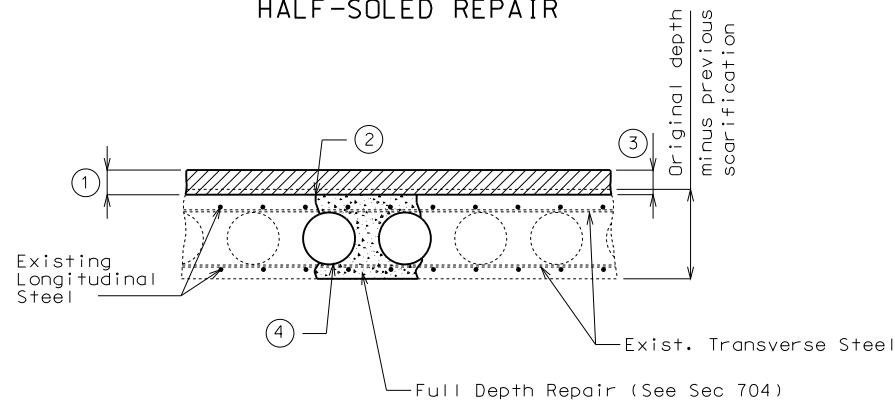
In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Estimated Quantities

Item		Total
Removal of Concrete Wearing Surface	sq. foot	8935
Removal of Cathodic Protection System	lump sum	1
Low Slump Concrete Wearing Surface	sq. yard	993
Repairing Concrete Deck (Half-Soling)	sq. foot	1300
Full Depth Repair	sq. foot	200
Clean and Epoxy Seal	sq. foot	835



HALF-SOLED REPAIR

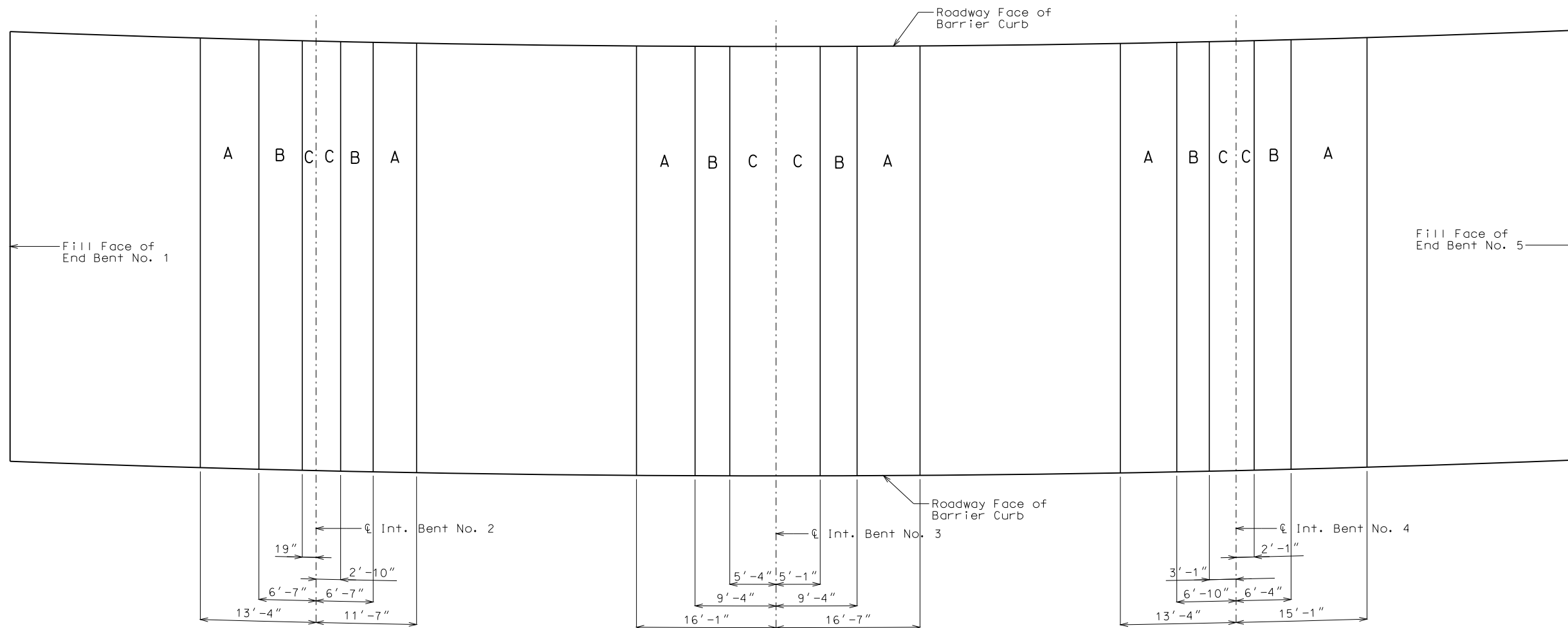


FULL DEPTH REPAIR

- ① Remove existing 2 1/4" low slup concrete wearing surface and an additional 1/4" of deck.
- ② One inch vertical side shall be established outside the deteriorated area. See Sec 704.
- ③ 2 1/2" Low Slump Concrete Wearing Surface.
- ④ Reform existing weephole, if encountered.

DECK REPAIR DETAILS

REPAIRS TO BRIDGE: I-435 SBL  
 OVER 23RD STREET  
 STATE ROAD FROM MISSOURI RIVER TO RTE. I-70  
 ABOUT 1.7 MILES NORTH OF RTE. I-70  
 STA. 265+36.57 ± (MATCH EXISTING)



PLAN OF SLAB SHOWING SPECIAL REPAIRS ZONES

Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

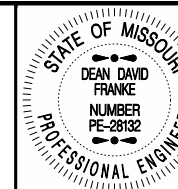
Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for that zone. Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairing Concrete Deck (Half-Soling).

When a deteriorated portion of the void tube is beyond the point of patching as determined by the engineer, the portion of the deteriorated void tube shall be replaced. The void area shall be maintained completely free of concrete. Cutting of the longitudinal reinforcing steel will not be permitted. The fiber tubes for producing the voids shall have an outside diameter with the wall thickness the same as the existing tubes and anchored at not more than the original spacing. Cost of replacing the void tube will be considered completely covered by the contract unit price for Full Depth Repair.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
1/15/2015

ROUTE I-435 STATE MO

DISTRICT BR SHEET NO. 2

COUNTY JACKSON

JOB NO. J413022B

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A16985

DESCRIPTION

DATE

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

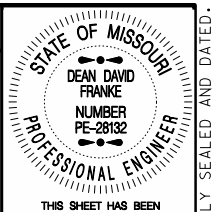


105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

U.I.P. & REDECK EXISTING (35'-46'-54'-40') CONTINUOUS COMPOSITE WIDE FLANGE SPANS (SKEW: 4°35' RA)

SEC/SUR 7 TWP 49N RGE 32W



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 5/29/2015

ROUTE I-435 STATE MO DISTRICT BR SHEET NO. 1

COUNTY JACKSON

JOB NO. J413022B

CONTRACT ID.

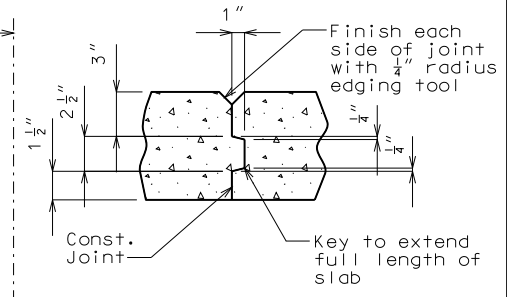
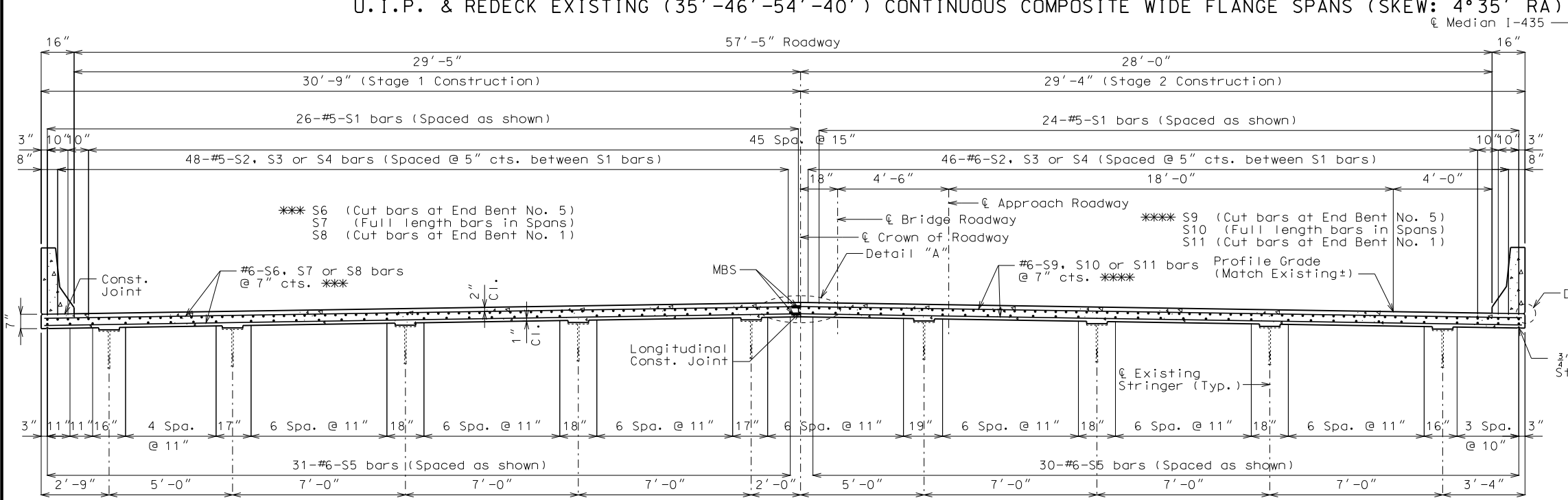
PROJECT NO.

BRIDGE NO. A17504

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MDOT (1-888-273-6636)



DETAIL OF LONGITUDINAL CONST. JOINT

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

\*\* Unless otherwise shown

**General Notes:**

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

Design Loading: HS20-44 (1965 & 1982), HS20 Modified (New Const.), Military 24,000 lb Tandem Axle (1965, 1982 & New Const.) 35#/sq. ft. Future Wearing Surface Earth - 120 #/Cu. Ft., Equivalent Fluid Pressure 45#/Cu. Ft.

Design Unit Stresses:  
 Class B-1 Concrete (Safety Barrier Curb)  $f'c = 4,000$  psi  
 Class B-2 Concrete (Superstructure, except Safety Barrier Curb)  $f'c = 4,000$  psi  
 Reinforcing Steel (Grade 60)  $fy = 60,000$  psi

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

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

MBS refers to mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 or 710.

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

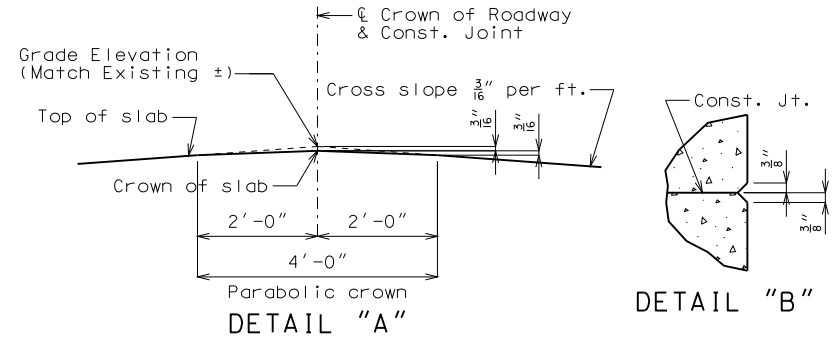
Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

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.

Traffic Handling: Structure to remain open during construction. See Sheet No. 2.

For Structural Steel Protective Coating notes, see Sheet No. 3.



Int. Bent No. 2		Int. Bent No. 3		Int. Bent No. 4	
Span 1	Span 2	Span 2	Span 3	Span 3	Span 4
12'-6"	15'-9"	15'-3"	17'-3"	17'-9"	13'-9"
S2		S3		S4	

Item	Unit	Total
Class B-2 Concrete	cu. yard	266.0
Reinforcing Steel (Epoxy Coated)	pound	100,150

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 forms, conventional forms, all concrete and 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. 3.

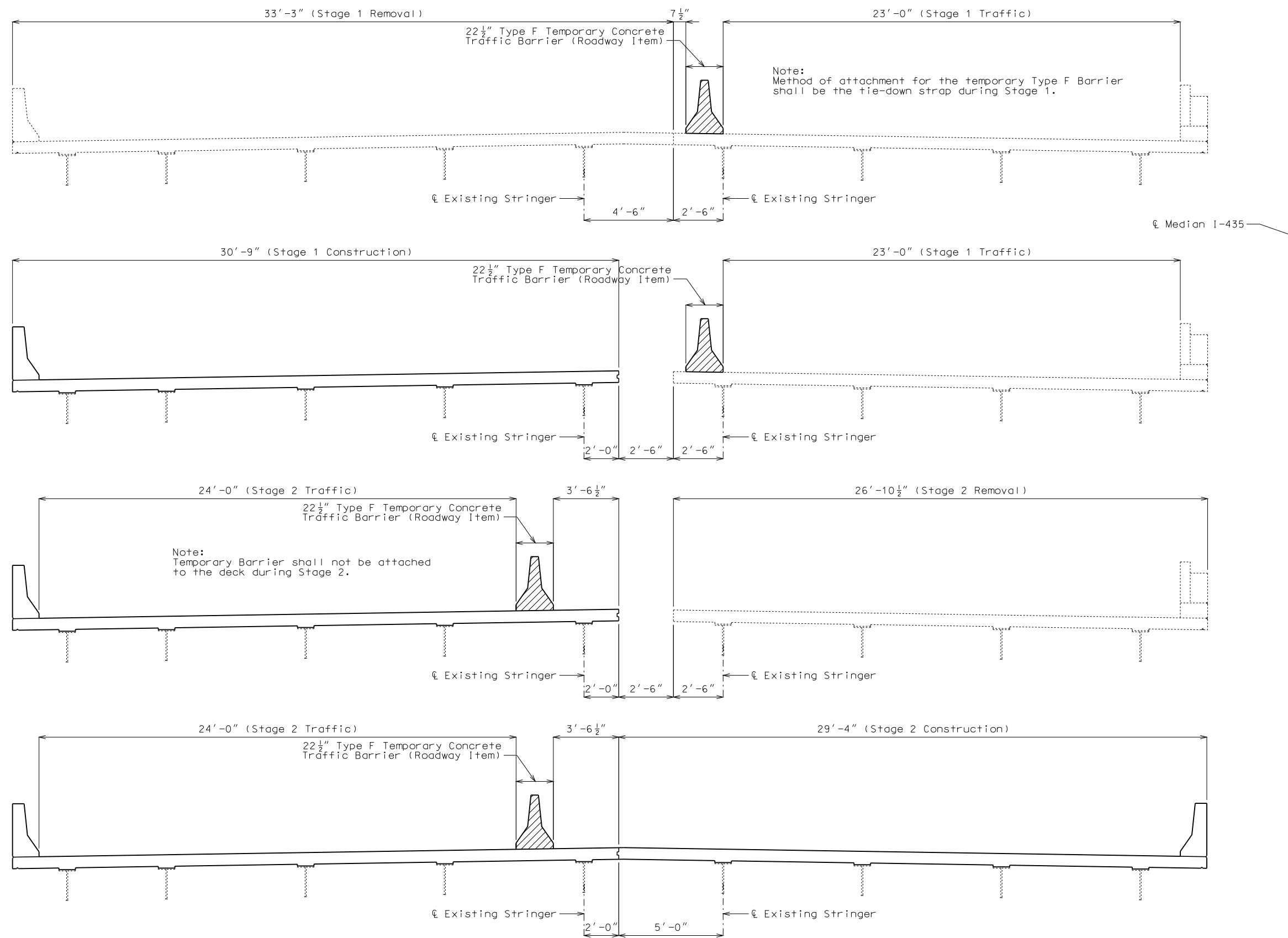
Item	Unit	Total
Temporary Shoring	lump sum	1
Removal of Existing Bridge Decks	sq. foot	10,732
Partial Removal of Substructure Concrete	lump sum	1
Removal of Cathodic Protection System	lump sum	1
Bridge Approach Slab (Major Road)	sq. yard	327
Slab on Steel	sq. yard	1188
* Safety Barrier Curb	linear foot	393
Mechanical Bar Splice	each	624
Slab Drain	each	14
Surface Preparation for Recoating Structural Steel	sq. foot	3200
Field Application of Inorganic Zinc Primer	sq. foot	3200
Intermediate Field Coat (System G)	sq. foot	3200
Finish Field Coat (System G)	sq. foot	1200
Non-Destructive Testing	linear foot	124
Vertical Drain at End Bents	each	1

\* Safety barrier curb shall be cast-in-place option or slip-form option.  
 Cost of any required excavation for bridge will be considered completely covered by the contract unit price for other items.

**REPAIRS TO BRIDGE: I-435 NBL OVER ROUTE 24**

STATE ROAD FROM MISSOURI RIVER TO RTE. I-70 ABOUT 3.4 MILES NORTH OF RTE. I-70 STA. 173+30.85± (MATCH EXISTING)

STD.	609.00
STD.	617.10
STD.	617.20
STD.	706.35



Note:  
Method of attachment for the temporary Type F Barrier shall be the tie-down strap during Stage 1.

Note:  
Temporary Barrier shall not be attached to the deck during Stage 2.

Note:  
Existing bolts in intermediate diaphragms and cross frames that connect stringers under different construction staged slab pours shall be removed and replaced before any slab pours. The new bolts shall be installed snug tight, then tightened after both adjacent slab pours are completed. Cost will be considered completely covered by contract unit price for Slab on Steel.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

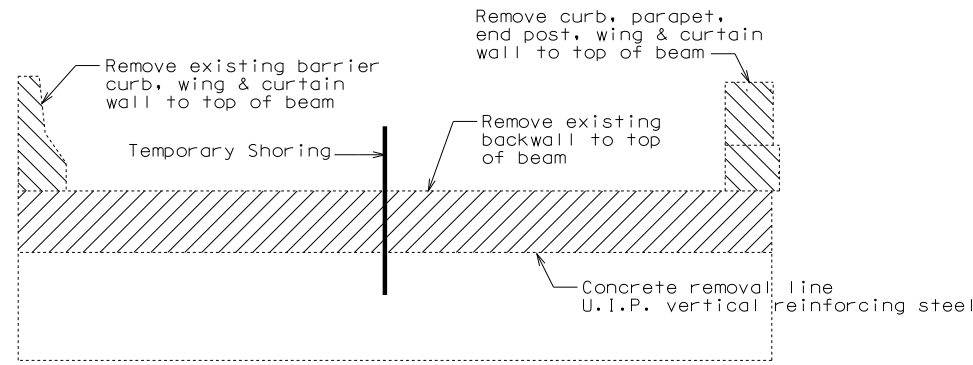
DATE PREPARED	3/19/2015	
ROUTE	I-435	STATE
DISTRICT	BR	SHEET NO.
		2
COUNTY	JACKSON	
JOB NO.	J413022B	
CONTRACT ID.		
PROJECT NO.		
BRIDGE NO.	A17504	

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

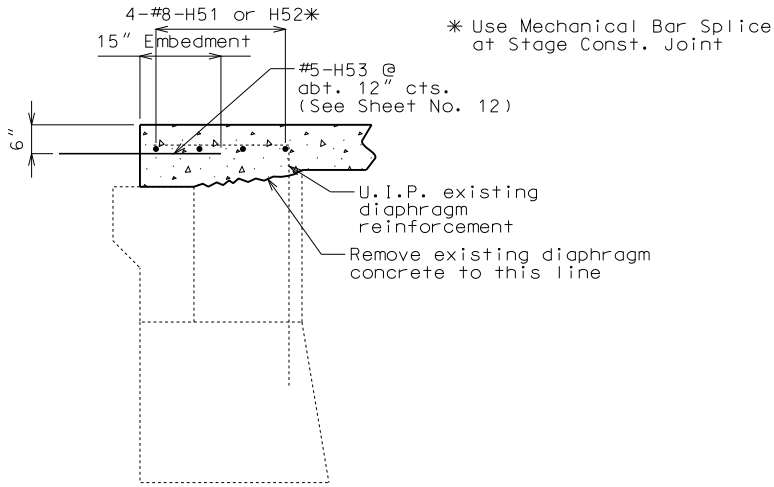
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
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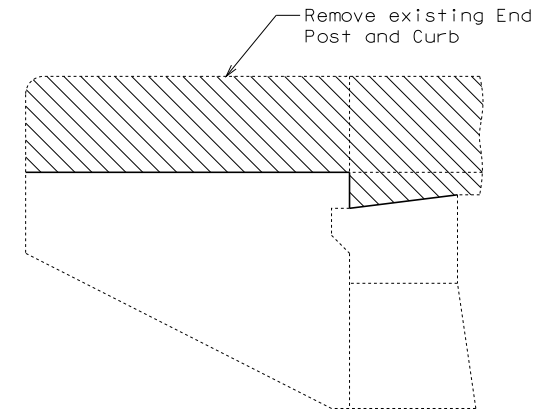


**DETAILS OF CONCRETE REMOVAL @ END BENT NO. 1**

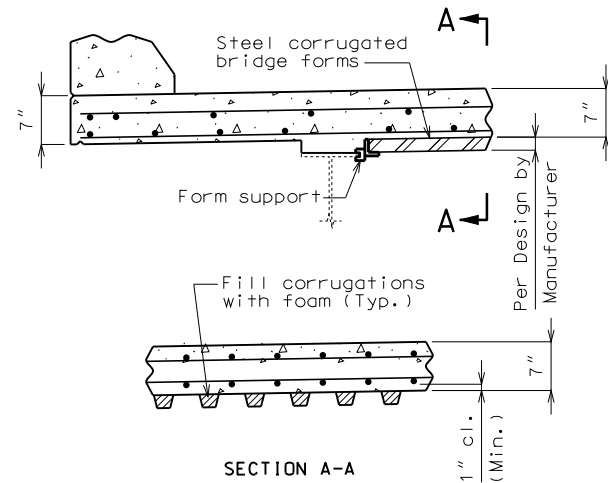
Note:  
The cost of concrete removal as shown will be considered completely covered by the contract unit price for Partial Removal of Substructure Concrete.



**TYPICAL SECTION THRU END BENT NO. 5**



**DETAILS OF CONCRETE REMOVAL @ END BENT NO. 5 (LEFT WING)**



**OPTIONAL STAY-IN-PLACE FORM DETAILS**

Notes:  
Corrugated steel bridge deck 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 girders, stringers or floorbeams 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 flanges of the girders, stringers or floorbeams will not be permitted. All steel fabrication and construction shall be in accordance with Sec's 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 girder loading.

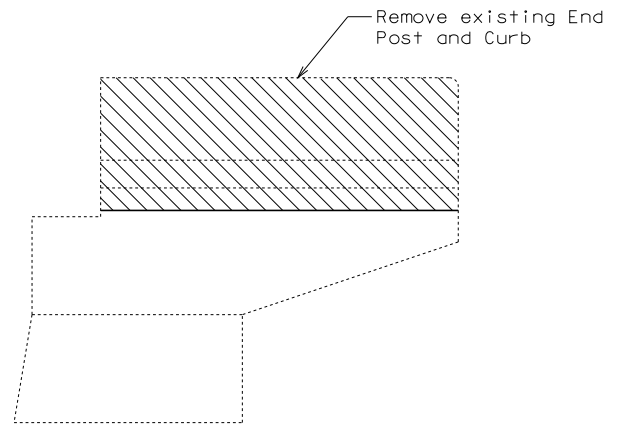
The contractor shall provide temporary bracing as necessary to prevent girders from rotating during slab pour. The cost for temporary bracing shall be considered completely covered by the contract unit price for Slab on Steel.

Slab shall be poured upgrade from end to end at a minimum rate of 25 cu. yd./ hr.

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

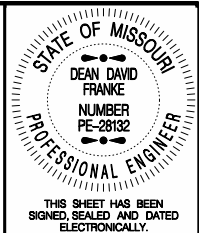
Slab is to be considered at a uniform depth as shown on the plans. Haunching will vary.

**Deflection Note:**  
The contractor shall determine dead load deflections and haunching based on field measurements and/or existing bridge plans and may be adjusted based on the difference between the new and existing dead load weights.



**DETAILS OF CONCRETE REMOVAL @ END BENT NO. 5 (RIGHT WING)**

Note:  
The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Bridge Decks.



DATE PREPARED  
1/22/2015  
ROUTE I-435 STATE MO  
DISTRICT BR SHEET NO. 3  
COUNTY JACKSON  
JOB NO. J413022B  
CONTRACT ID.  
PROJECT NO.

BRIDGE NO. A17504

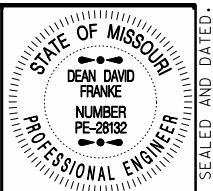
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ROUTE I-435 STATE MO

DISTRICT BR SHEET NO. 4

COUNTY JACKSON

JOB NO. J413022B

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A17504

DESCRIPTION

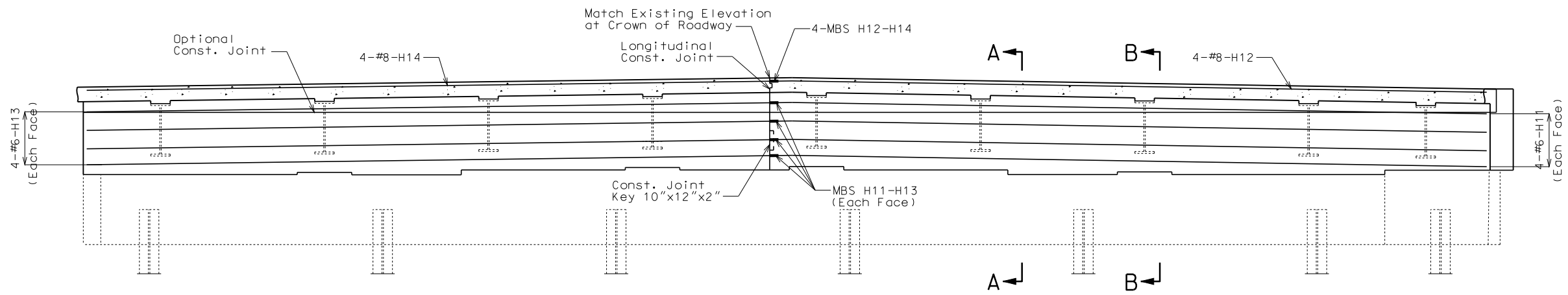
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102

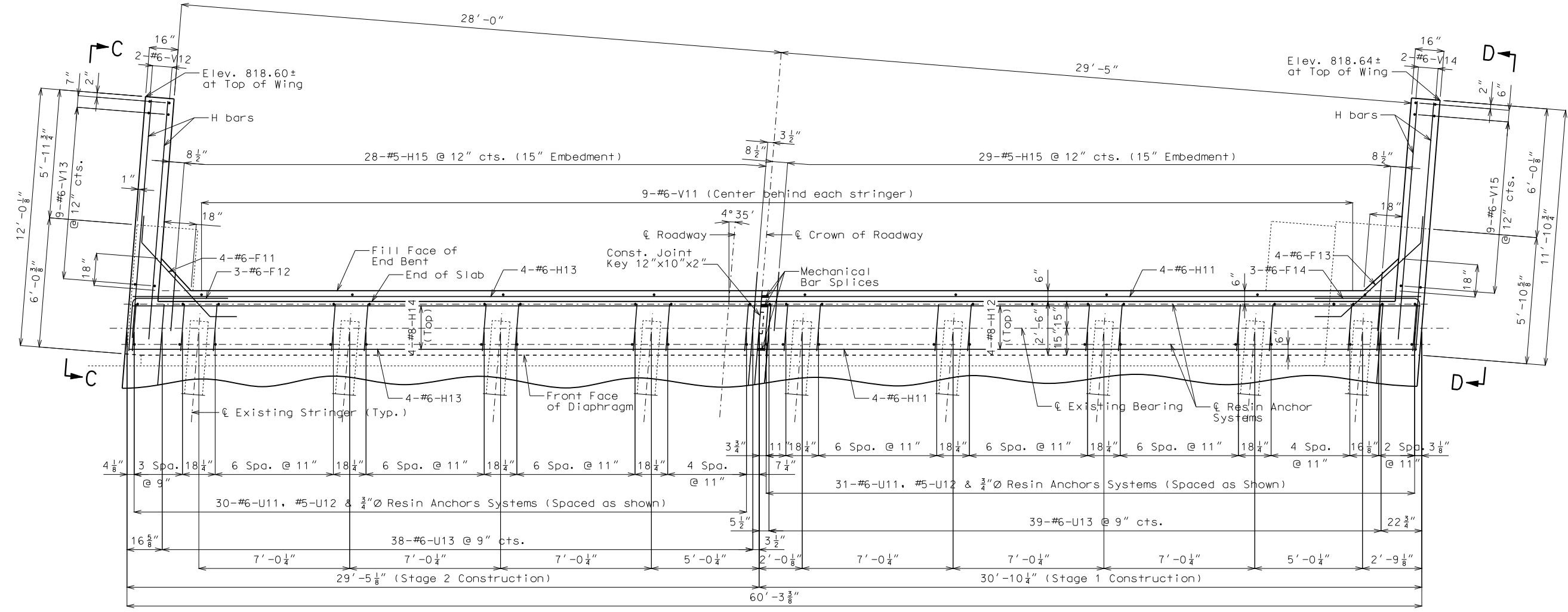
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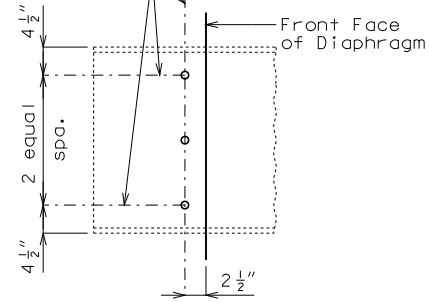
Note:  
For Sections A-A & B-B, Elevations C-C & D-D and Details and Notes for Resin Anchors Systems, see Sheet No. 5.

SECTION NEAR END BENT



PART PLAN  
DETAILS OF END BENT NO. 1

1 1/16" ∅ holes in each stringer.  
 Cost of field drilling holes in existing webs will be considered completely covered by the contract unit price for Slab on Steel



DETAIL OF WEB HOLES

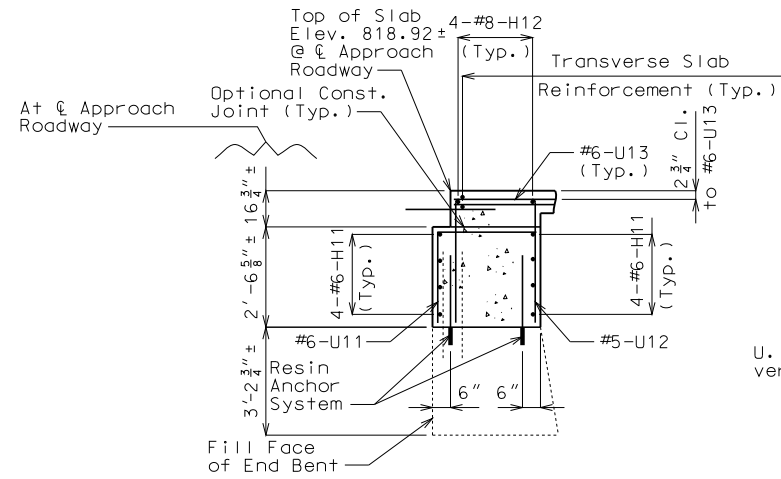
Notes:

For location of Sections A-A & B-B and Elevations C-C & D-D, see Sheet No. 4.

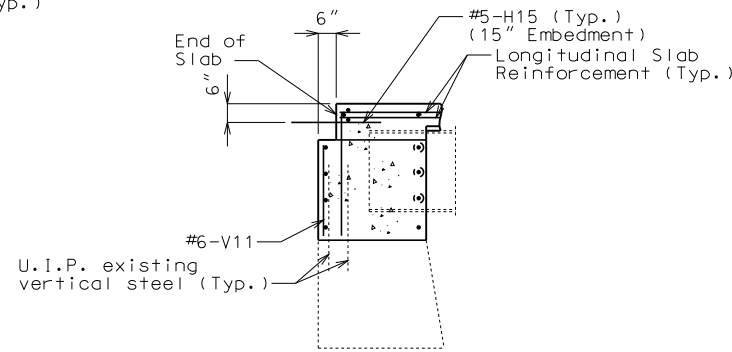
For reinforcement of the safety barrier curb, see Sheets No. 8 thru 11.

The #6-F11 & F13 bars shall be bent in the field to clear stringers.

All concrete in the end bent above bottom of wing and below top of slab shall be Class B-2.



SECTION A-A



SECTION B-B

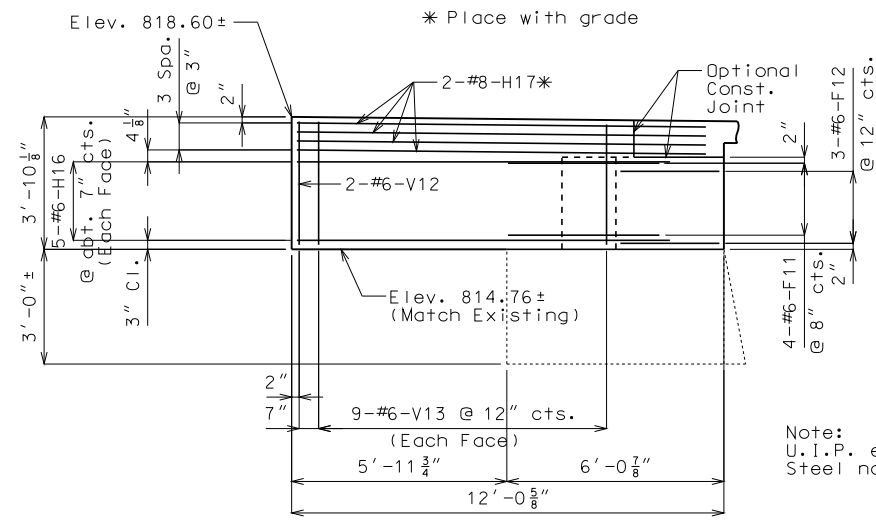
Notes:

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

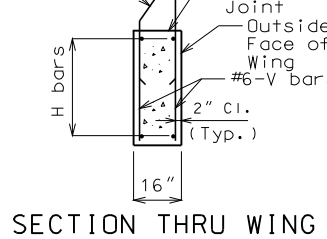
Cost of furnishing and installing the resin anchor systems, complete in place, will be considered completely covered by the contract unit price for Slab on Steel.

The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor systems 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 2'-0" long shall be substituted for the 3/4" ∅ threaded rod.

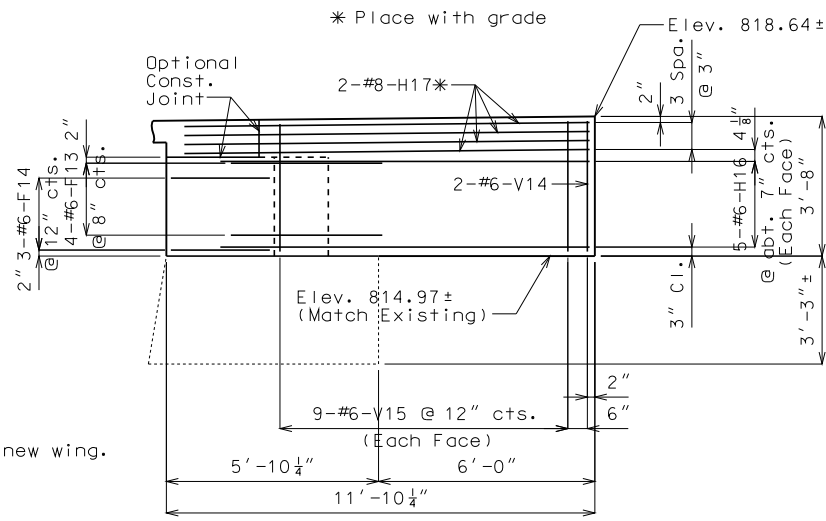


ELEVATION C-C



SECTION THRU WING

Note:  
 U.I.P. existing V-bars in beam into new wing. Steel not shown for clarity

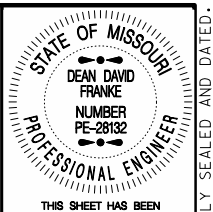


ELEVATION D-D

DETAILS OF END BENT NO. 1

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

Sheet No. 5 of 14

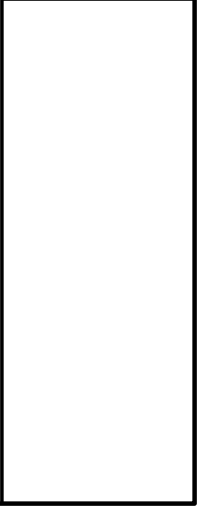


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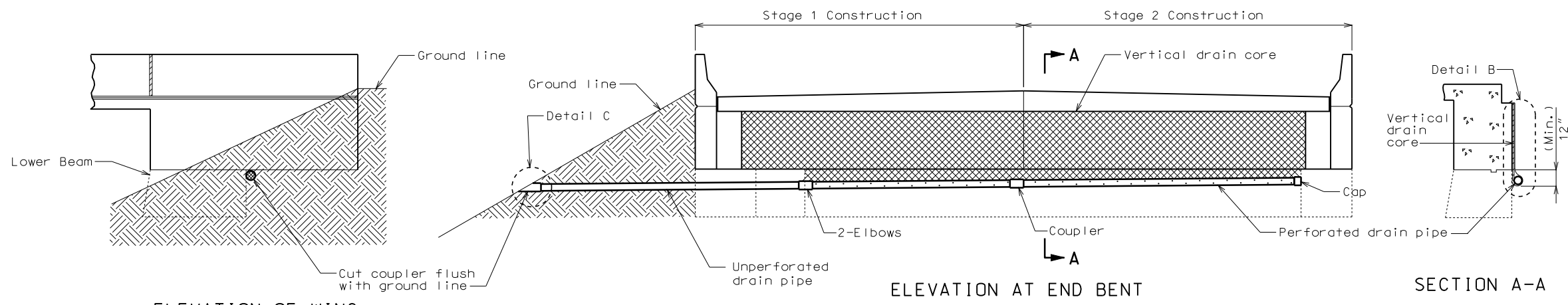
DATE PREPARED	1/15/2015
ROUTE	I-435
STATE	MO
DISTRICT	BR
SHEET NO.	5
COUNTY	JACKSON
JOB NO.	J413022B
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A17504

DATE	DESCRIPTION

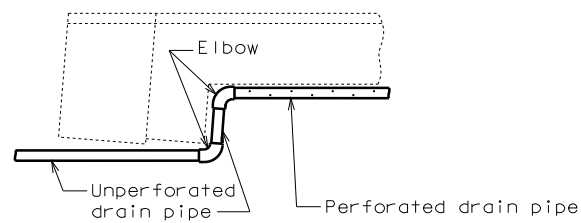
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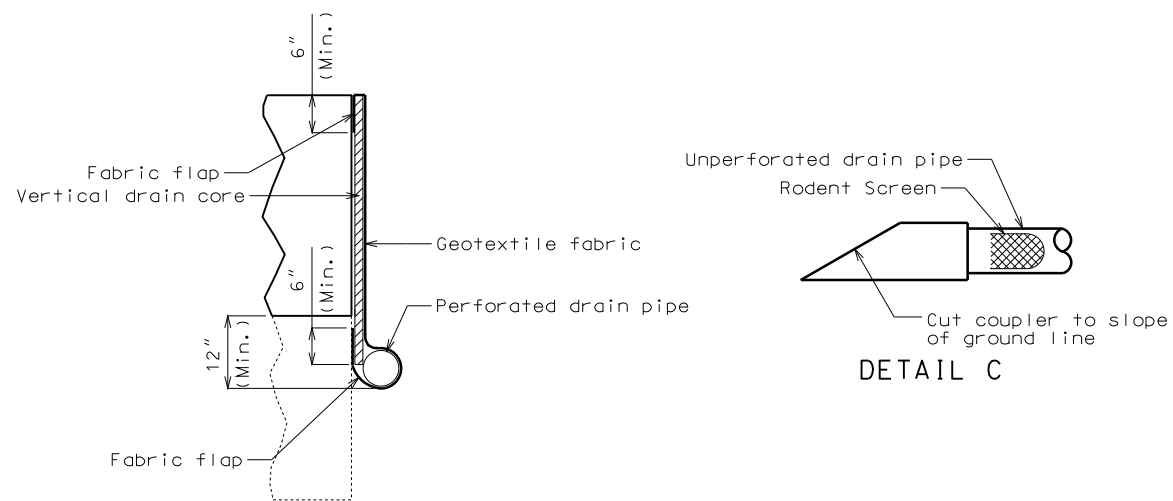
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ELEVATION OF WING



PART PLAN AT END BENT



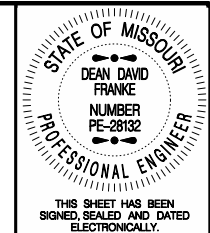
DETAIL B

DETAIL C

Note:  
 Drain pipe may be either 6" diameter corrugated metallic-coated steel pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

Place drain pipe at fill face of end bent and slope to lowest grade of ground line, also missing the bottom of wing of end bent by 1 1/2". (See elevation at end bent.)

Perforated pipe shall be placed at fill face side at the bottom of end bent and plain pipe shall be used where the vertical drain ends to the exit at ground line.



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ROUTE I-435 STATE MO

DISTRICT BR SHEET NO. 6

COUNTY JACKSON

JOB NO. J413022B

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A17504

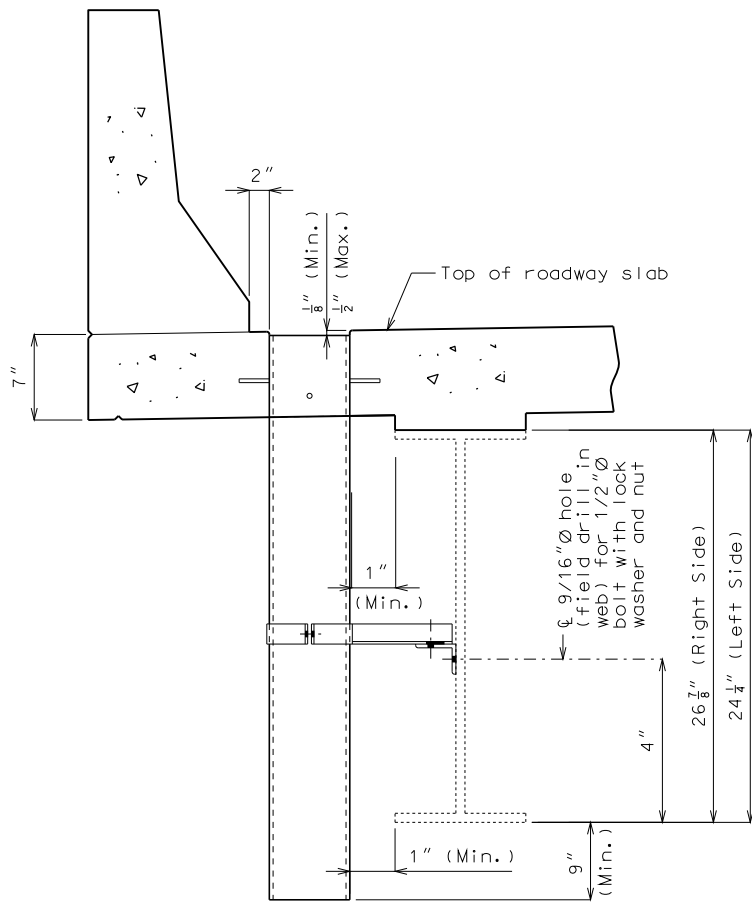
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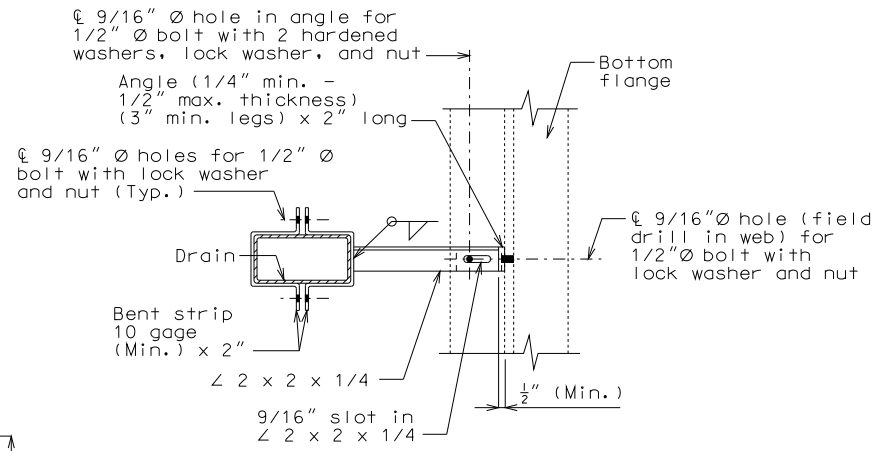
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VERTICAL DRAIN AT END BENT NO. 1

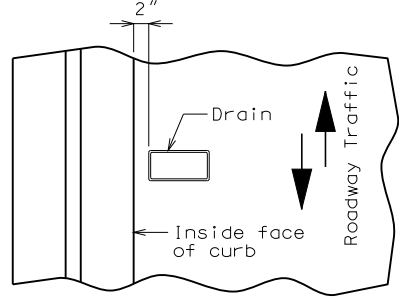
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PART SECTION NEAR DRAIN

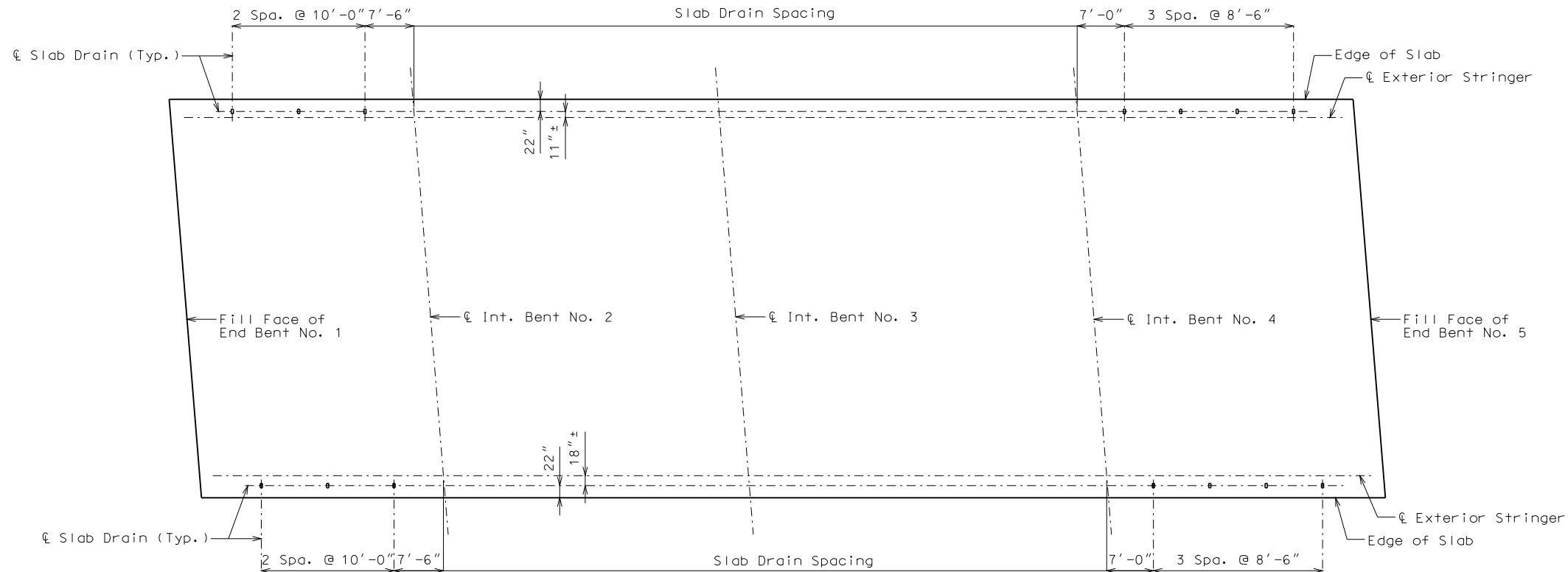


PART SECTION SHOWING BRACKET ASSEMBLY

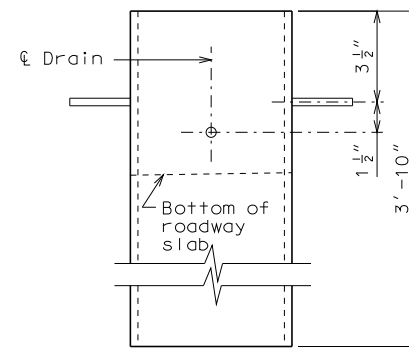


PART PLAN OF SLAB AT DRAIN

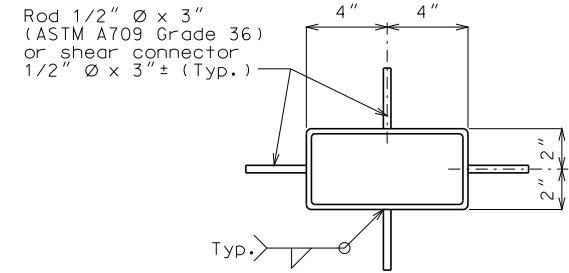
DETAILS OF DRAINS TRANSVERSE TO ROADWAY  
SLAB DRAIN DETAILS



PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



ELEVATION OF DRAIN



PLAN OF DRAIN

Notes:

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

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

Outside dimensions of drains are 8" x 4".

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

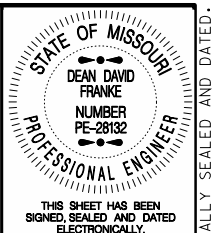
Reinforcing steel shall be shifted to clear drains.

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

All bolts, hardened washers, lock washers and nuts shall be galvanized in accordance with ASTM A153.

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

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



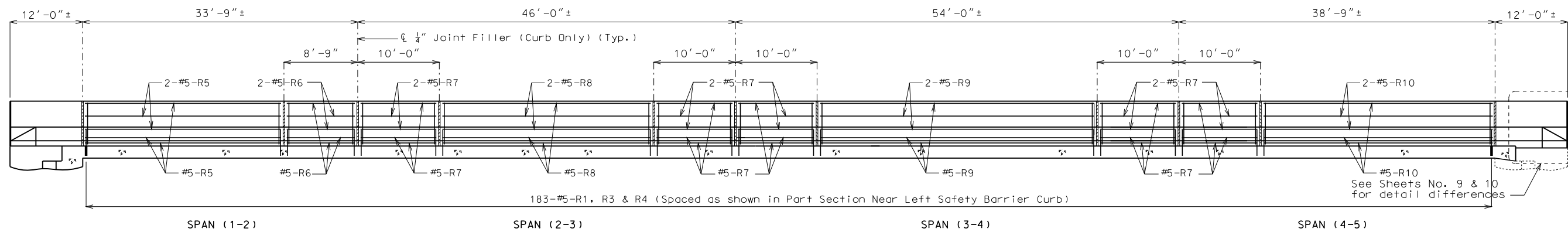
DATE PREPARED 1/15/2015	
ROUTE I-435	STATE MO
DISTRICT BR	SHEET NO. 7
COUNTY JACKSON	
JOB NO. J4130228	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A17504	

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

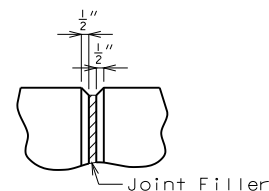
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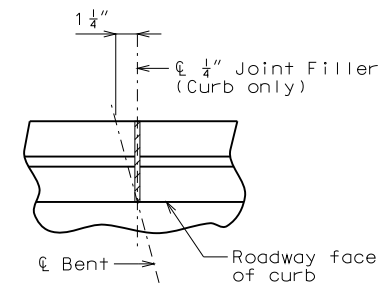


**SECTION NEAR LEFT SAFETY BARRIER CURB**

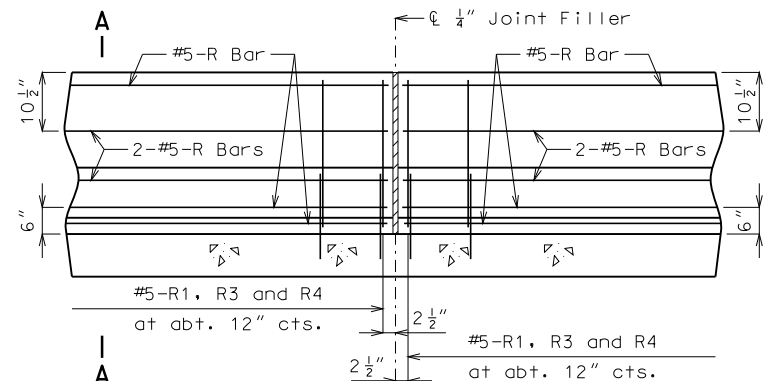
Note:  
Left Safety Barrier Curb shown, Right Safety Barrier Curb similar.  
Longitudinal dimensions are horizontal.



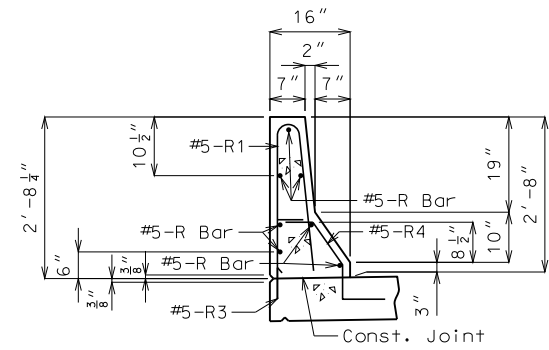
**FILLED JOINT DETAIL**



**PART PLAN SHOWING SAFETY BARRIER CURB JOINT**

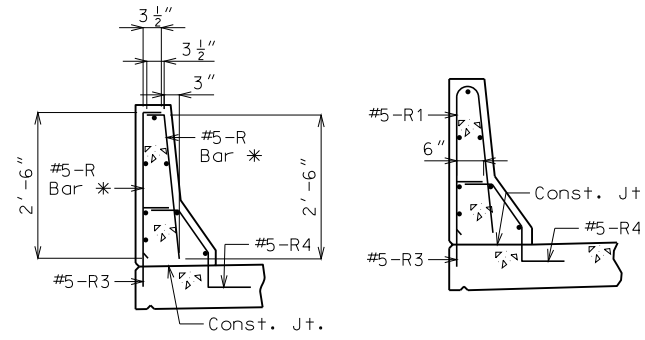


**PART ELEVATION OF SAFETY BARRIER CURB (CAST-IN-PLACE CONVENTIONAL FORMING)**



**SECTION A-A**

Use a minimum lap of 2'-11" for #5 horizontal safety barrier curb bars.  
The cross-sectional area above the slab = 2.27 sq. ft.



**R-BAR PERMISSIBLE ALTERNATE SHAPE**

\* 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**

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

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

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

Concrete in the safety barrier curb shall be Class B-1.

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

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec. 617. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Safety Barrier Curb.

STATE OF MISSOURI  
DEAN DAVID FRANK  
NUMBER PE-28132  
PROFESSIONAL ENGINEER  
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DATE PREPARED 1/15/2015	
ROUTE I-435	STATE MO
DISTRICT BR	SHEET NO. 8
COUNTY JACKSON	
JOB NO. J4130228	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A17504	

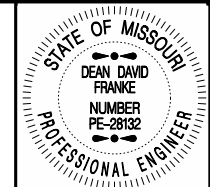
DATE	DESCRIPTION

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**DETAILS OF SAFETY BARRIER CURB**

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DISTRICT BR SHEET NO. 9

COUNTY JACKSON  
JOB NO. J413022B  
CONTRACT ID.

PROJECT NO.  
BRIDGE NO. A17504

DESCRIPTION

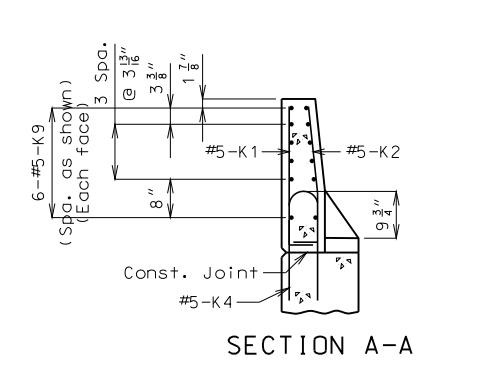
DATE

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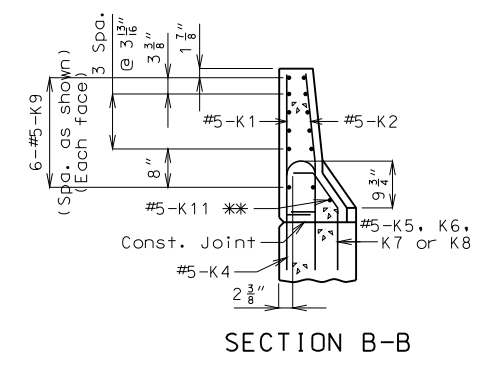


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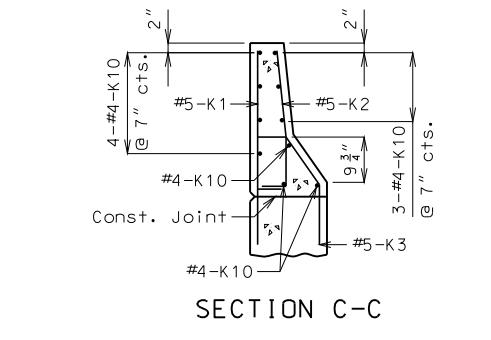
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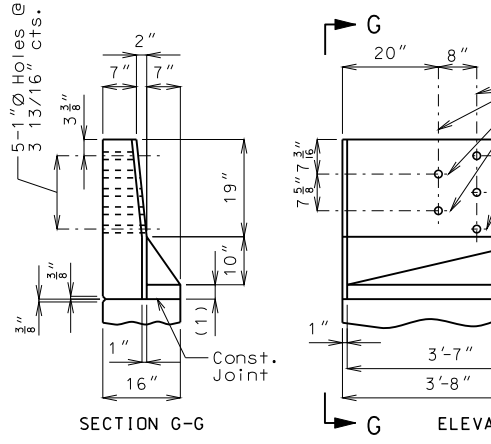
SECTION A-A



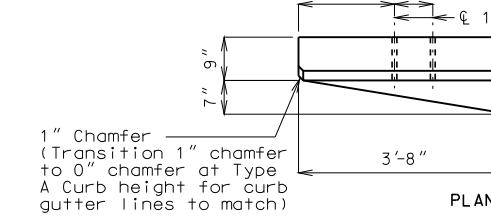
SECTION B-B



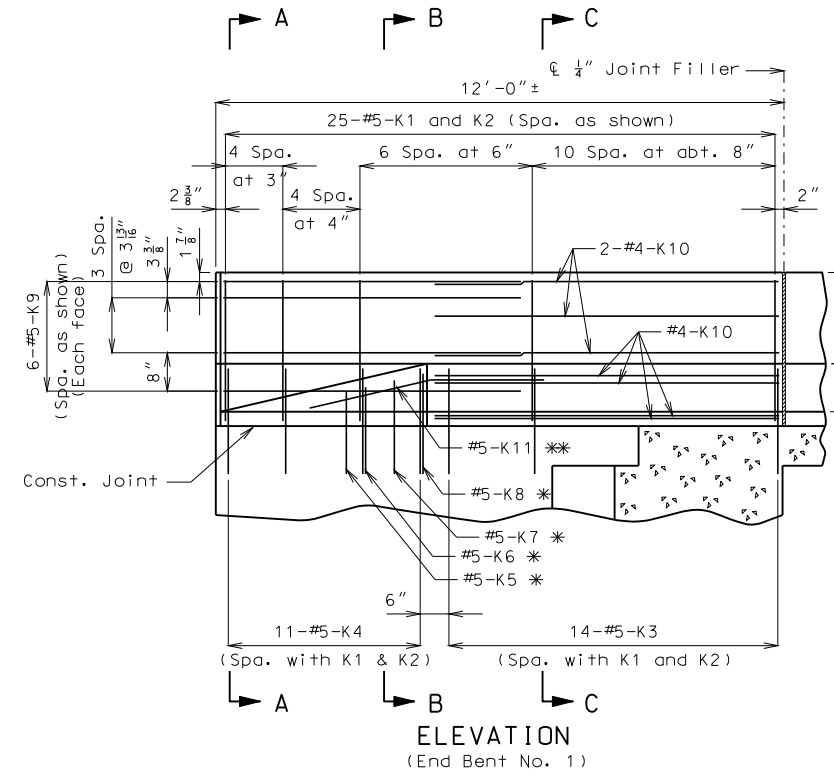
SECTION C-C



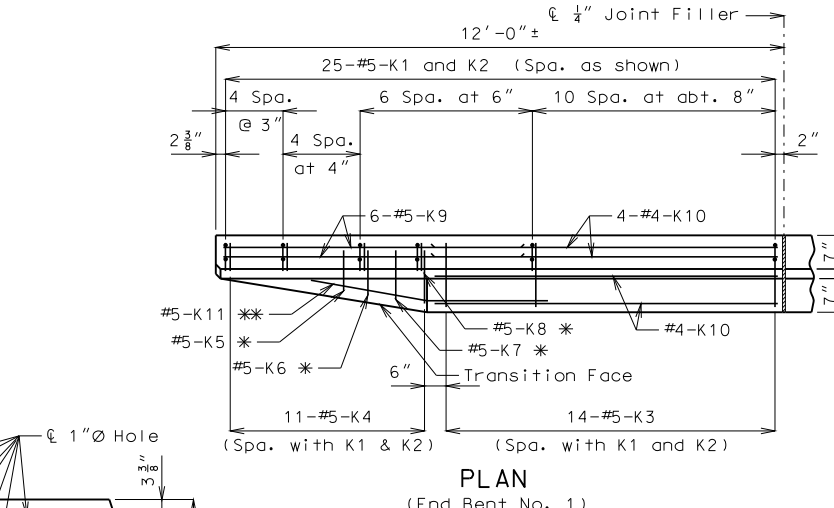
SECTION G-G



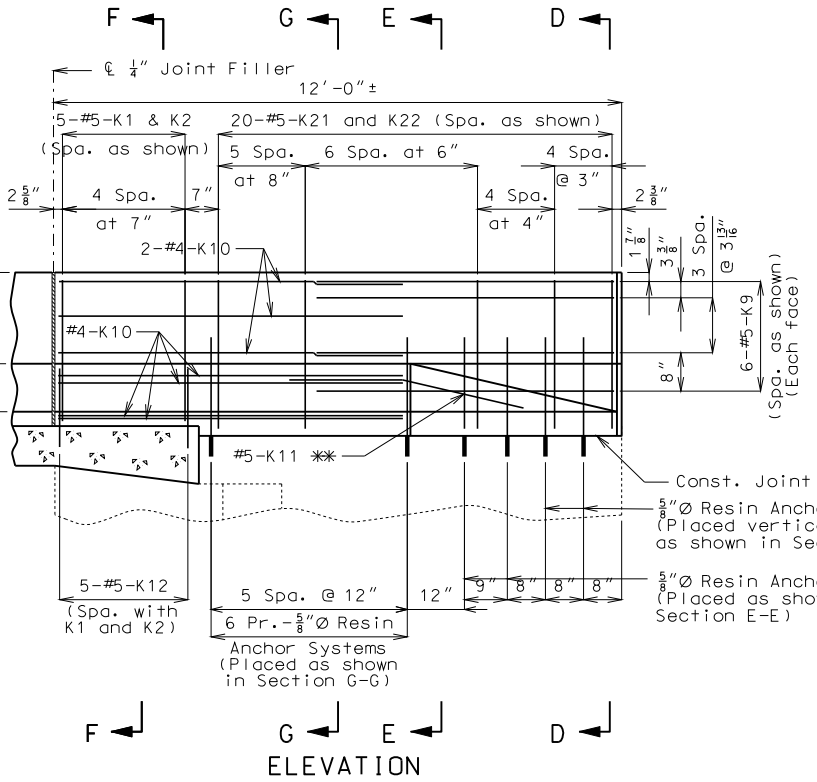
DETAILS OF GUARD RAIL ATTACHMENT



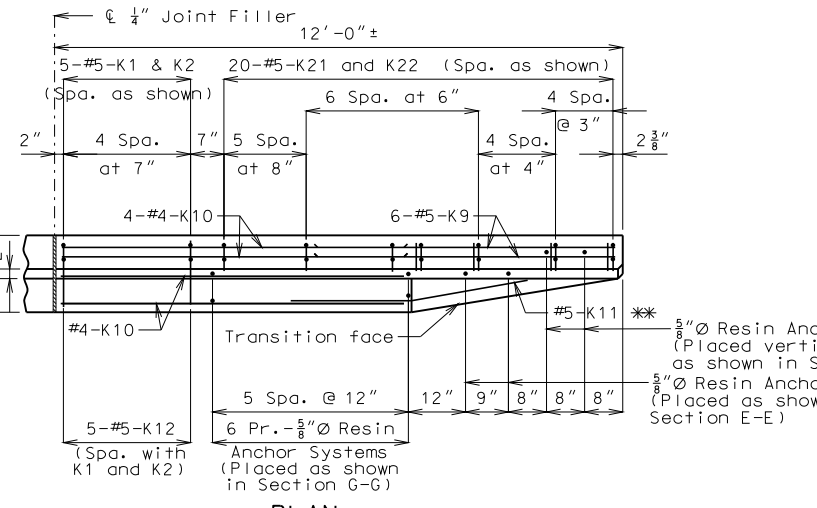
ELEVATION (End Bent No. 1)



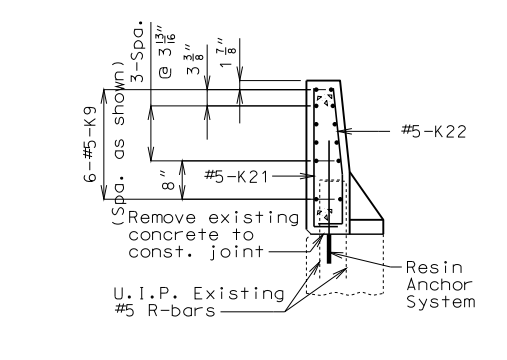
PLAN (End Bent No. 1)



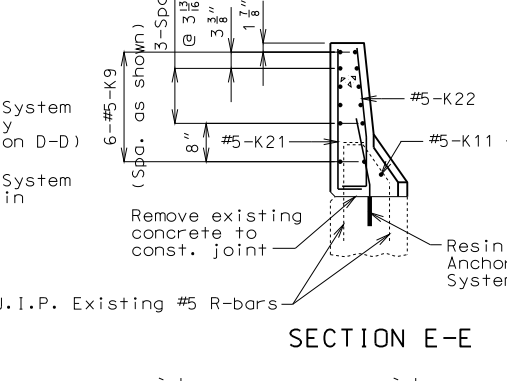
ELEVATION (End Bent No. 5)



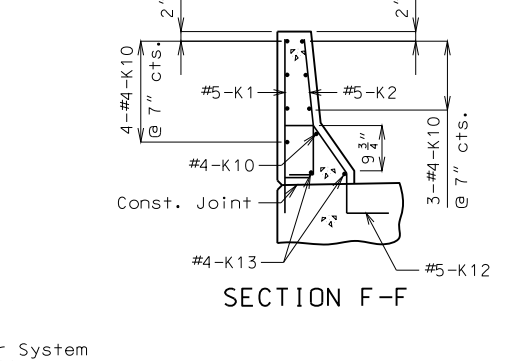
PLAN (End Bent No. 5)



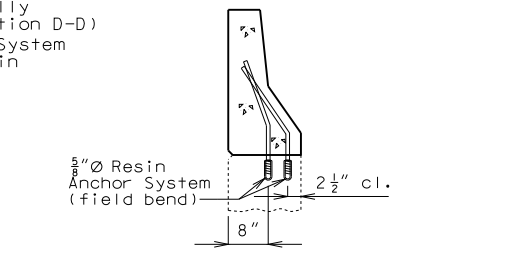
SECTION D-D



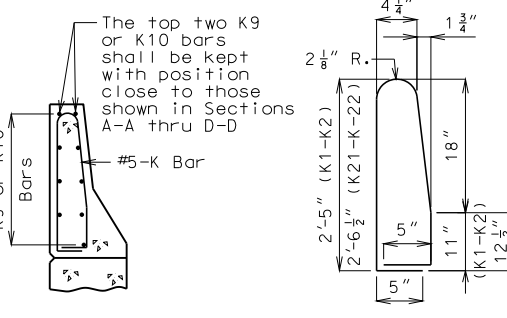
SECTION E-E



SECTION F-F



ANCHOR SYSTEMS AT SECTION G-G



K1-K2 & K21-K22 BAR PERMISSIBLE ALTERNATE SHAPE

(K3 or K4 thru K8 bars not shown for clarity)  
The K1 & K2 and K21 & K22 bar combination may be furnished as one bar as shown, at the contractor's option.

\* Spaced with #5-K4 bars.  
\*\* Fit bar to follow transition face of curb.

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 systems, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.  
The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor systems 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 #5 Grade 60 reinforcing bar 2'-3" long shall be substituted for the 5/8" diameter threaded rod.  
Use a minimum lap of 2'-0" between K9 and K10 bars.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Safety Barrier Curb.



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DATE PREPARED 1/15/2015

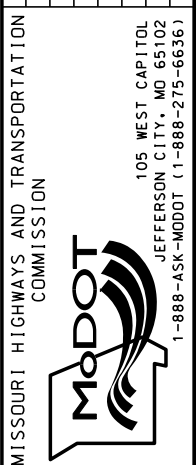
ROUTE I-435 STATE MO DISTRICT BR SHEET NO. 10

COUNTY JACKSON JOB NO. J4130228 CONTRACT ID.

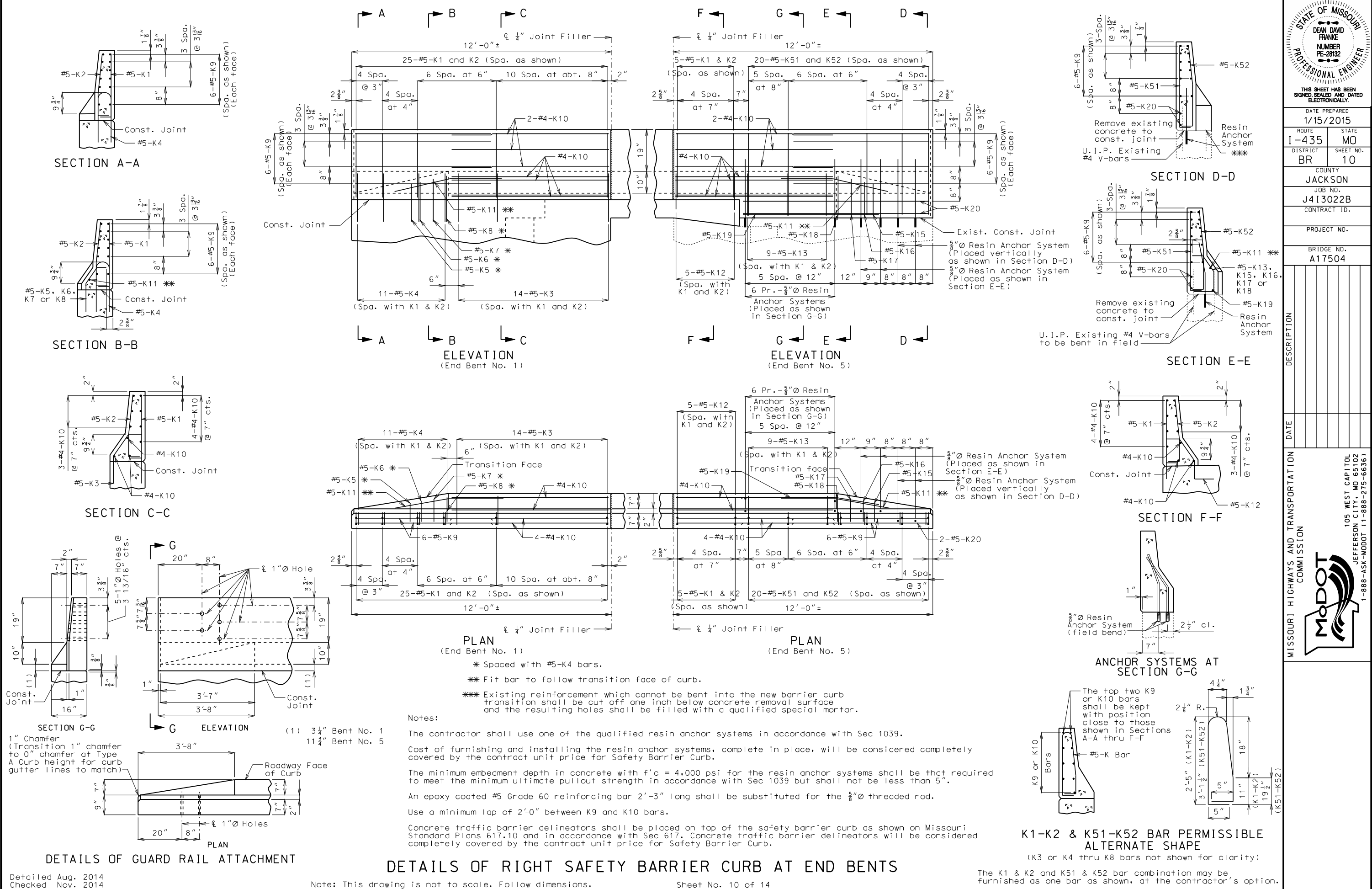
PROJECT NO. BRIDGE NO. A17504

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION



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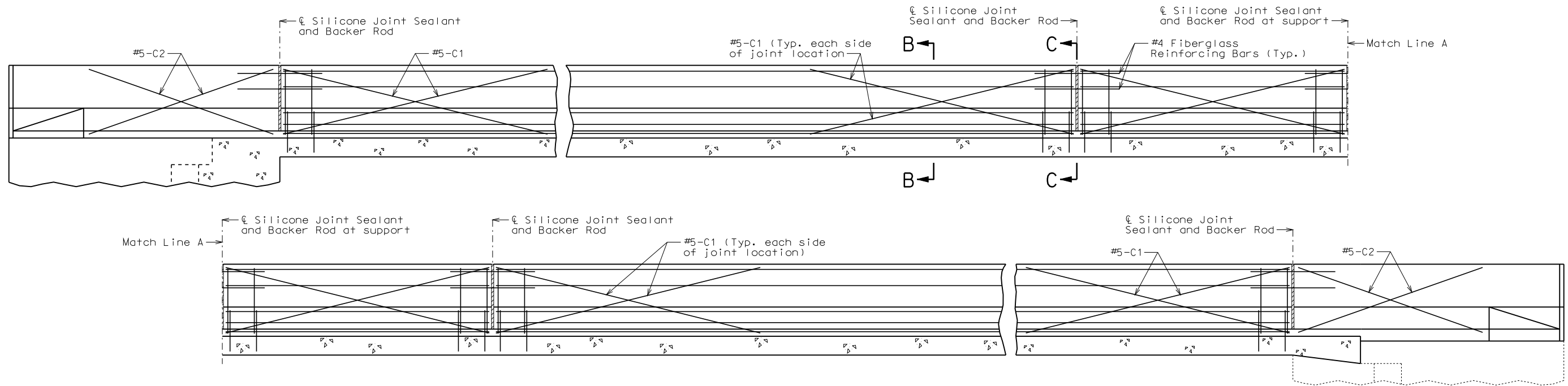


**K1-K2 & K51-K52 BAR PERMISSIBLE ALTERNATE SHAPE**

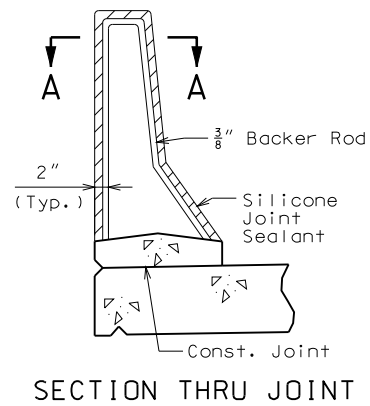
(K3 or K4 thru K8 bars not shown for clarity)  
The K1 & K2 and K51 & K52 bar combination may be furnished as one bar as shown, at the contractor's option.

- 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 systems, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.
  - The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor systems 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 #5 Grade 60 reinforcing bar 2'-3" long shall be substituted for the 3/8"Ø threaded rod.
  - Use a minimum lap of 2'-0" between K9 and K10 bars.
  - Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Safety Barrier Curb.

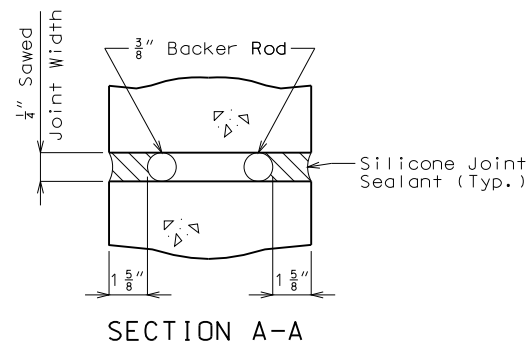
Detailed Aug. 2014  
Checked Nov. 2014



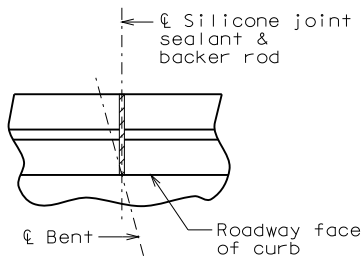
TYPICAL SECTION NEAR LEFT SAFETY BARRIER CURB AT SUPPORT LOCATIONS  
(Left safety barrier curb shown, right safety barrier curb similar.)



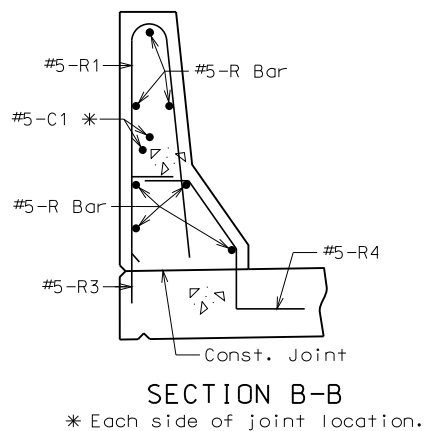
SECTION THRU JOINT



SECTION A-A

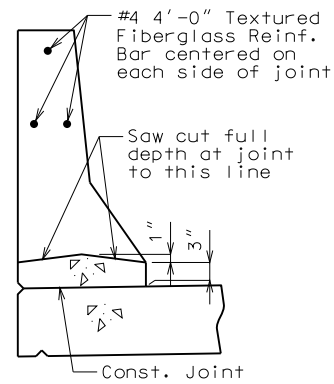


PART PLAN SHOWING SAFETY BARRIER CURB JOINT



SECTION B-B

\* Each side of joint location.



SECTION C-C

General Notes:

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

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

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

Concrete in the safety barrier curb shall be Class B-1.

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

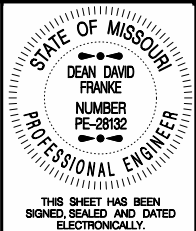
Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Safety Barrier Curb.

Joint sealant and backer rods shall be used on all slip-form barrier curbs instead of joint filler and shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

For slip-form option, all sides of the safety barrier curb shall have a vertically broomed finish and the curb top shall have a transversely broomed finish.

C bars (slip-form option only) shall be used in addition to cast-in-place conventional forming reinforcement for bridge safety barrier curb.

Cost of silicone joint sealant and backer rod, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.



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DATE PREPARED: 1/15/2015  
ROUTE: I-435 STATE: MO  
DISTRICT: BR SHEET NO.: 11  
COUNTY: JACKSON  
JOB NO.: J413022B  
CONTRACT ID.

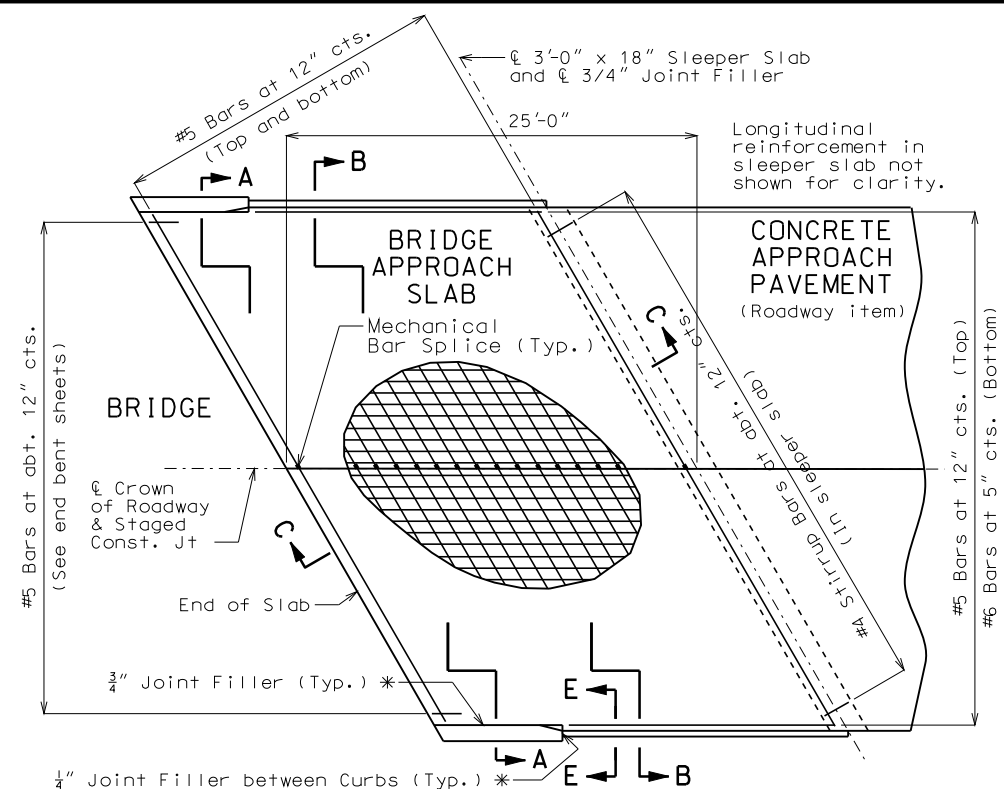
PROJECT NO.  
BRIDGE NO.: A17504

DATE	DESCRIPTION

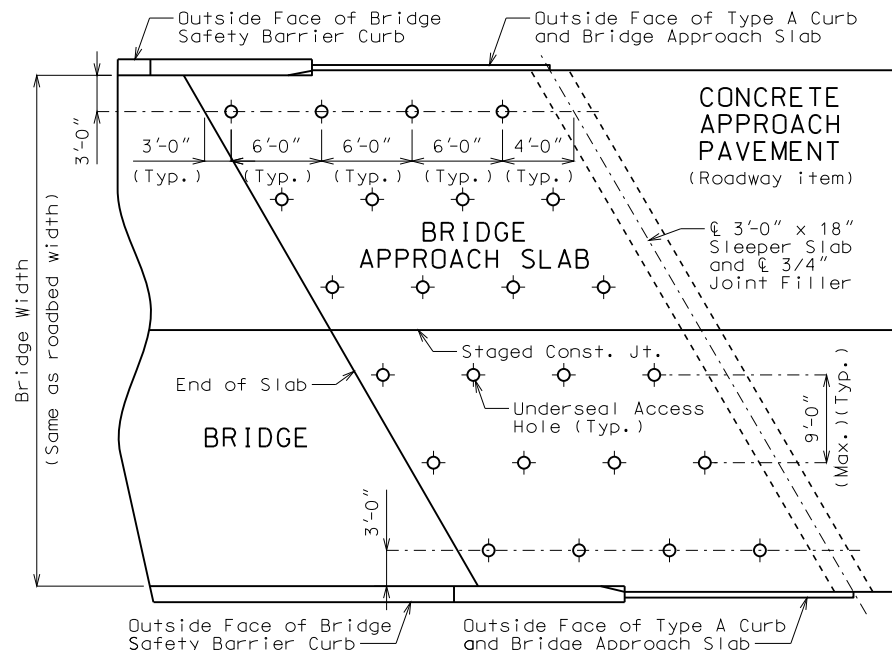
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
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JEFFERSON CITY, MO 65102  
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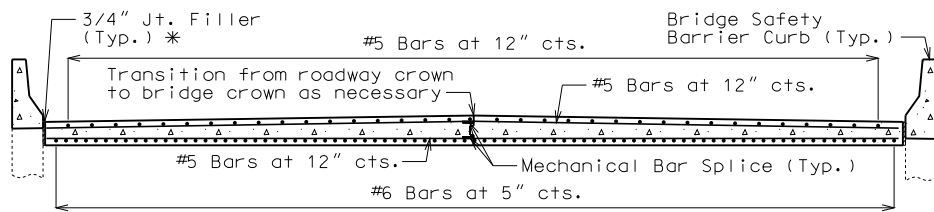




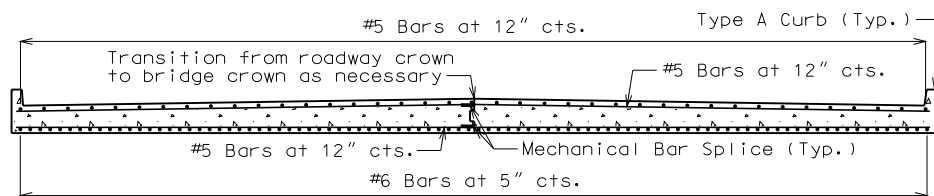
PART PLAN SHOWING REINFORCEMENT



PART PLAN SHOWING UNDERSEAL ACCESS HOLES

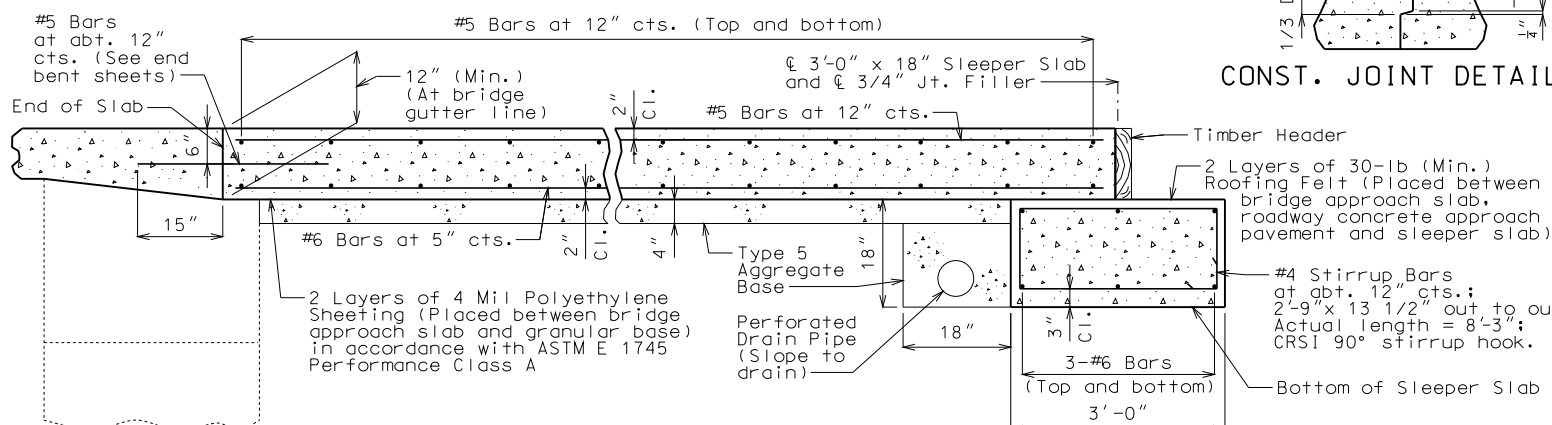


SECTION A-A



SECTION B-B

With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.



SECTION C-C DETAILS OF BRIDGE APPROACH SLAB (MAJOR ROAD)

(End Bent No. 5 shown, End Bent No. 1 similar)

General Notes:

All concrete for the bridge approach slab and sleeper slab shall be in accordance with Sec 503 ( $f'c = 4,000$  psi).

The reinforcing steel in the bridge approach slab and the sleeper slab shall be epoxy coated Grade 60 with  $f_y = 60,000$  psi.

Drain pipe may be either 6" diameter corrugated metallic-coated pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

Minimum clearance to reinforcing steel shall be  $1\frac{1}{2}$ ", unless otherwise shown.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by lap splicing the #5 bars 25".

Mechanical bar splices shall be in accordance with Sec 710. (Estimated 56 splices per slab)

All joint filler shall be in accordance with Sec 1057 for preformed fiber expansion joint filler except as noted.

The contractor shall pour and satisfactorily finish the bridge before pouring the bridge approach slabs.

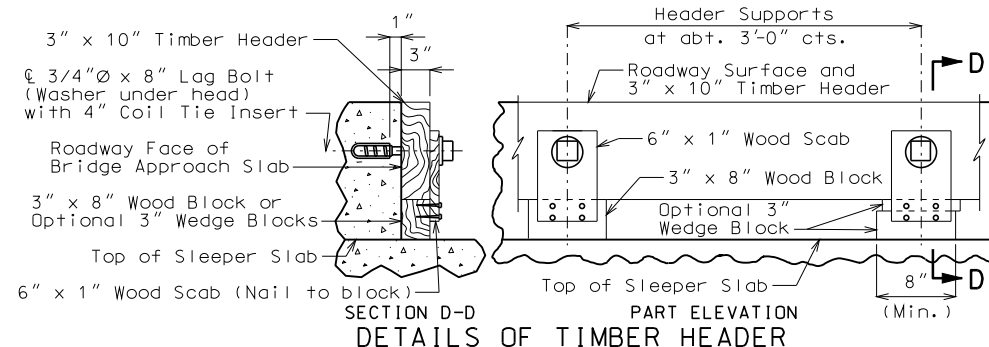
Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge.

For Concrete Approach Pavement details, see roadway plans.

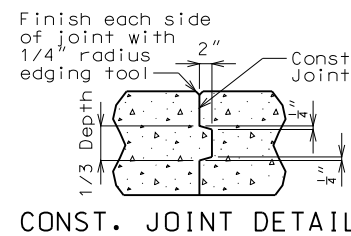
See Missouri Standard Plans Drawing 609.00 for details of Type A Curb.

Payment for furnishing all materials, labor and excavation necessary to construct the approach slab, including the timber header, sleeper slab, underdrain, Type 5 aggregate base, joint filler and all other appurtenances and incidental work as shown on this sheet, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab (Major Road) per square yard.

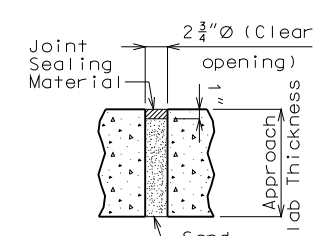
\* Seal joint between vertical face of approach slab and wing with "Silicone Joint Sealant for Saw Cut and Formed Joints" in accordance with Sec 717.



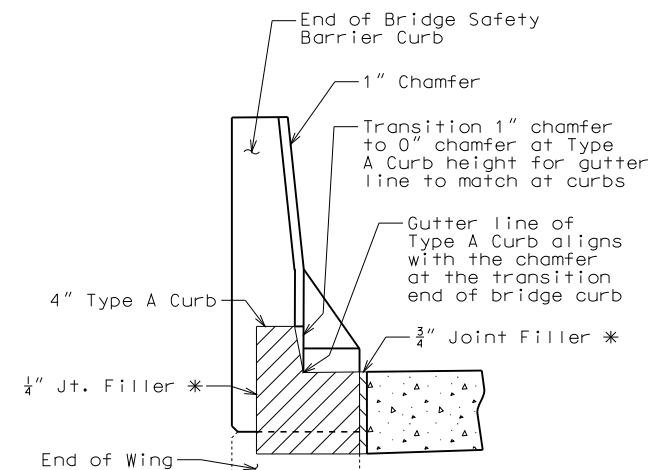
Remove timber header when concrete pavement is placed.



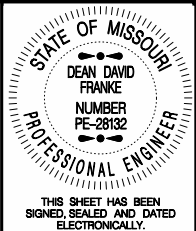
CONST. JOINT DETAIL



TYPICAL UNDERSEAL ACCESS HOLE DETAIL



SECTION E-E (Between curbs)



DATE PREPARED 1/15/2015	
ROUTE I-435	STATE MO
DISTRICT BR	SHEET NO. 12
COUNTY JACKSON	
JOB NO. J4130228	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A17504	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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



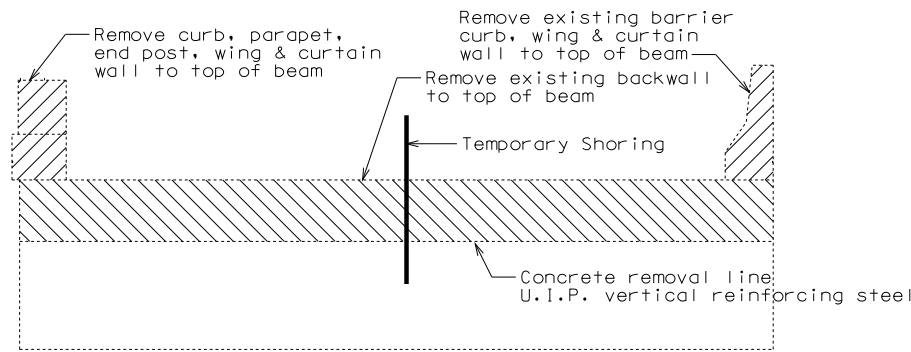
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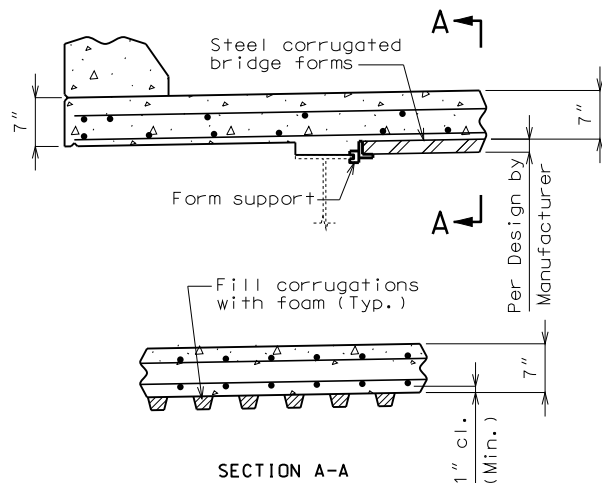






DETAILS OF CONCRETE REMOVAL @ END BENT NO. 1

Note:  
The cost of concrete removal as shown will be considered completely covered by the contract unit price for Partial Removal of Substructure Concrete.



OPTIONAL STAY-IN-PLACE FORM DETAILS

Notes:  
Corrugated steel bridge deck 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 girders, stringers or floorbeams 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 flanges of the girders, stringers or floorbeams will not be permitted. All steel fabrication and construction shall be in accordance with Sec's 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 girder loading.

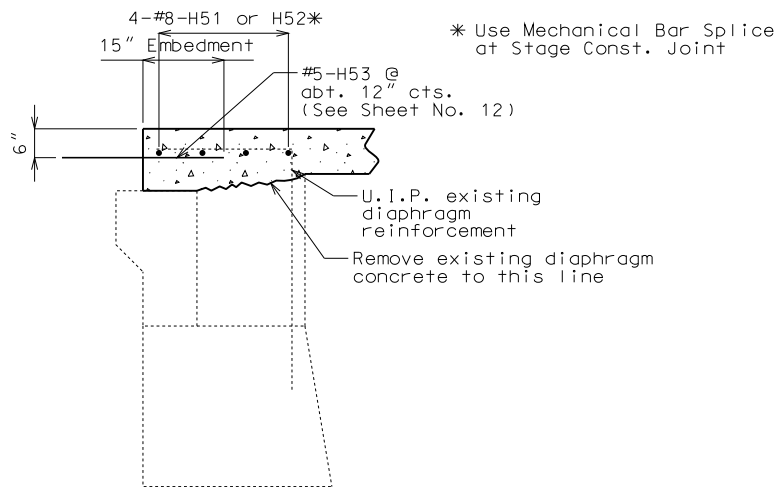
The contractor shall provide temporary bracing as necessary to prevent girders from rotating during slab pour. The cost for temporary bracing shall be considered completely covered by the contract unit price for Slab on Steel.

Slab shall be poured upgrade from end to end at a minimum rate of 25 cu. yd./ hr.

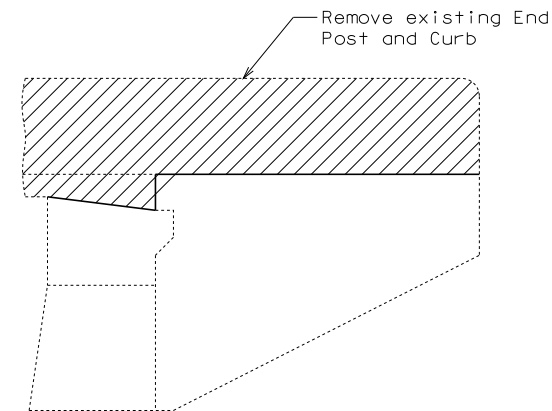
Alternate pour sequences may be submitted to the engineer for approval. Keyed construction joints shall be provided between pours.

Slab is to be considered at a uniform depth as shown on the plans. Haunching will vary.

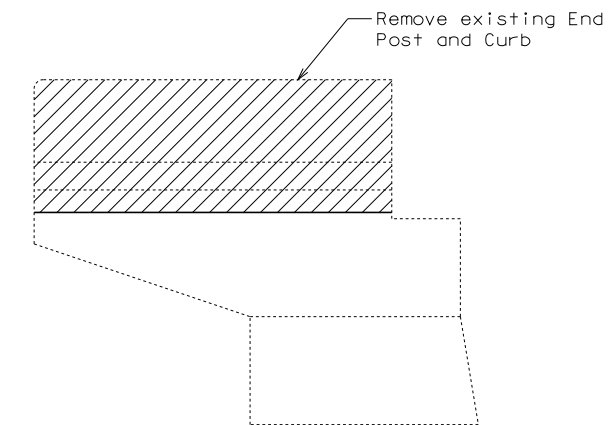
Deflection Note:  
The contractor shall determine dead load deflections and haunching based on field measurements and/or existing bridge plans and may be adjusted based on the difference between the new and existing dead load weights.



TYPICAL SECTION THRU END BENT NO. 5



DETAILS OF CONCRETE REMOVAL @ END BENT NO. 5 (RIGHT WING)



DETAILS OF CONCRETE REMOVAL @ END BENT NO. 5 (LEFT WING)

Note:  
The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Bridge Decks.

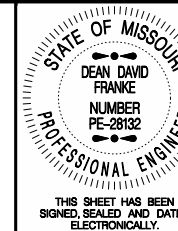
Structural Steel Protective Coating:

Coating Limit: All stringers within 10' of front face of the end bents and all the structural steel of the exterior stringers, including bearings, stiffeners, connection plates and miscellaneous structural items, shall be recoated with System G in accordance with Sec 1081.

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

Prime Coat: The cost of the prime coat will be considered completely covered by the contract unit price per sq. foot for "Field Application of Inorganic Zinc Primer". Tint of the prime coat for System G shall be similar to the color of the field coat to be used.

Field Coat: The color of the field coat shall be Gray (Federal Standard #26373). The cost of the intermediate field coat will be considered completely covered by the contract unit price per sq. foot for "Intermediate Field Coat (System G)". The cost of the finish field coat will be considered completely covered by the contract unit price per sq. foot for "Finish Field Coat (System G)".



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DATE PREPARED 1/22/2015

ROUTE I-435 STATE MO

DISTRICT BR SHEET NO. 3

COUNTY JACKSON

JOB NO. J413022B

CONTRACT ID.

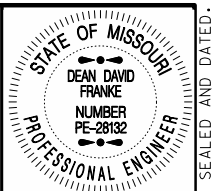
PROJECT NO.

BRIDGE NO. A17505

DESCRIPTION	DATE

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1-888-ASK-MODOT (1-888-275-6636)



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DATE PREPARED  
1/15/2015

ROUTE I-435 STATE MO

DISTRICT BR SHEET NO. 4

COUNTY JACKSON

JOB NO. J4130228

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A17505

DESCRIPTION

DATE

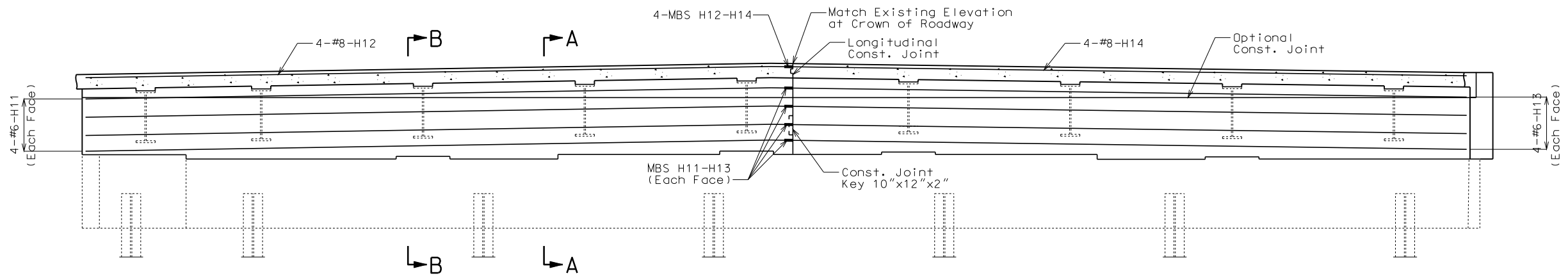
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

105 WEST CAPITOL JEFFERSON CITY, MO 65102

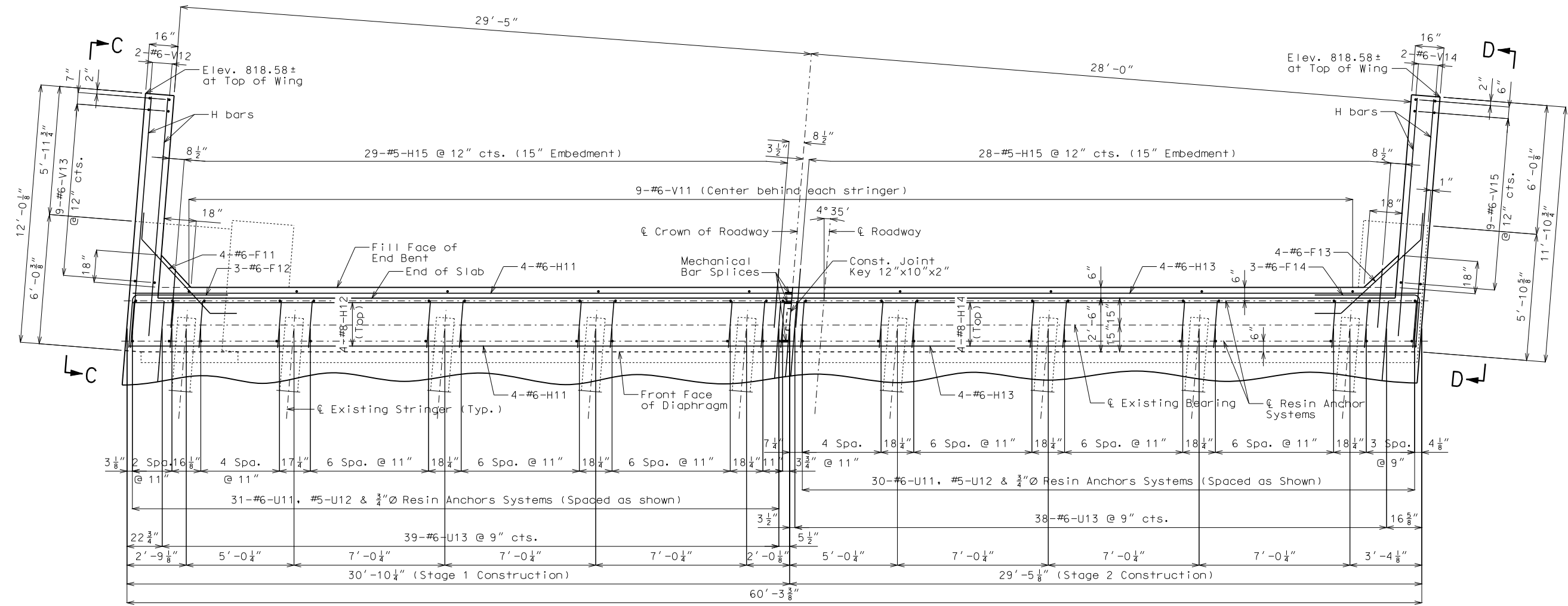
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SECTION NEAR END BENT

Note:  
For Sections A-A & B-B, Elevations C-C & D-D and Details and Notes for Resin Anchors Systems, see Sheet No. 5.



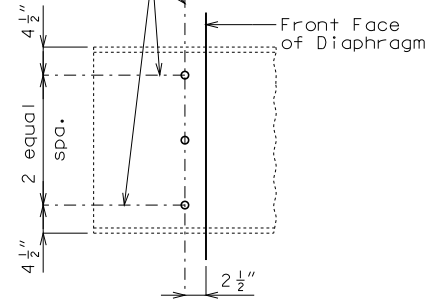
PART PLAN  
DETAILS OF END BENT NO. 1

Detailed Aug. 2014  
Checked Oct. 2014

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

Sheet No. 4 of 14

∅ 1 1/16" holes in each stringer.  
Cost of field drilling holes in existing webs will be considered completely covered by the contract unit price for Slab on Steel



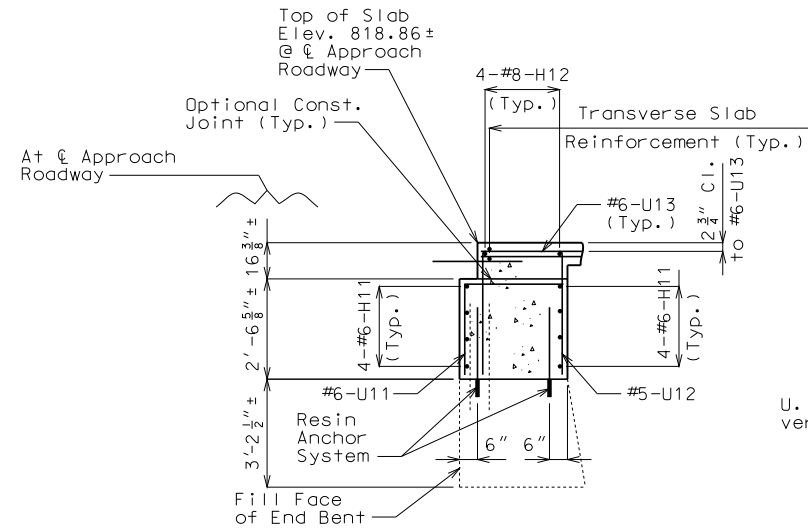
Notes:

For location of Sections A-A & B-B and Elevations C-C & D-D, see Sheet No. 4.

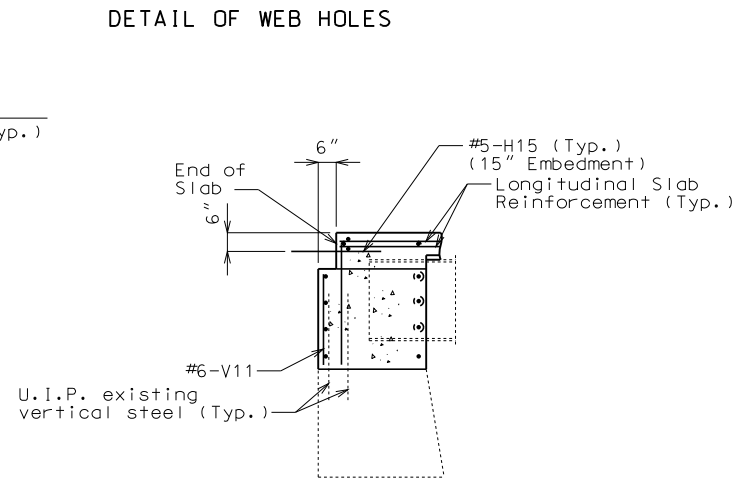
For reinforcement of the safety barrier curb, see Sheets No. 8 thru 11.

The #6-F11 & F13 bars shall be bent in the field to clear stringers.

All concrete in the end bent above bottom of wing and below top of slab shall be Class B-2.



SECTION A-A



DETAIL OF WEB HOLES

SECTION B-B

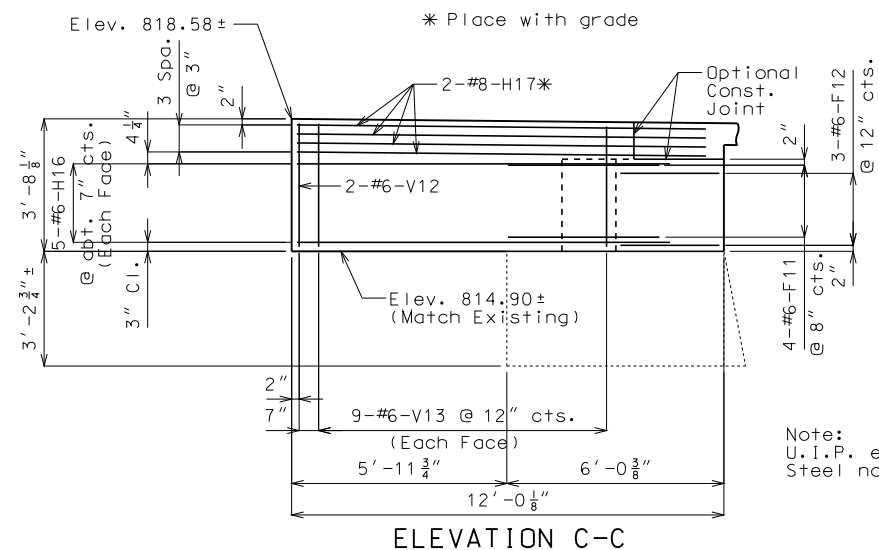
Notes:

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

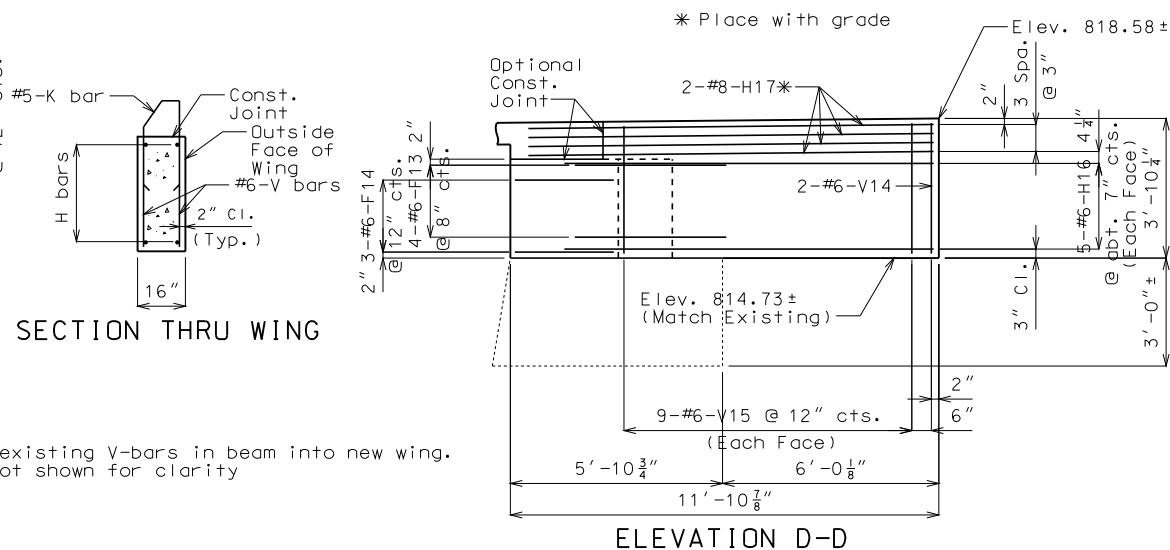
Cost of furnishing and installing the resin anchor systems, complete in place, will be considered completely covered by the contract unit price for Slab on Steel.

The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor systems 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 2'-0" long shall be substituted for the 3/4"∅ threaded rod.



ELEVATION C-C



SECTION THRU WING

ELEVATION D-D

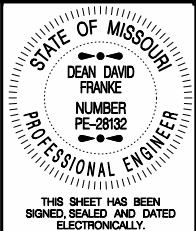
DETAILS OF END BENT NO. 1

Note:  
U.I.P. existing V-bars in beam into new wing.  
Steel not shown for clarity

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

Sheet No. 5 of 14

Detailed Aug. 2014  
Checked Oct. 2014



DATE PREPARED 1/15/2015	
ROUTE I-435	STATE MO
DISTRICT BR	SHEET NO. 5
COUNTY JACKSON	
JOB NO. J413022B	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A17505	

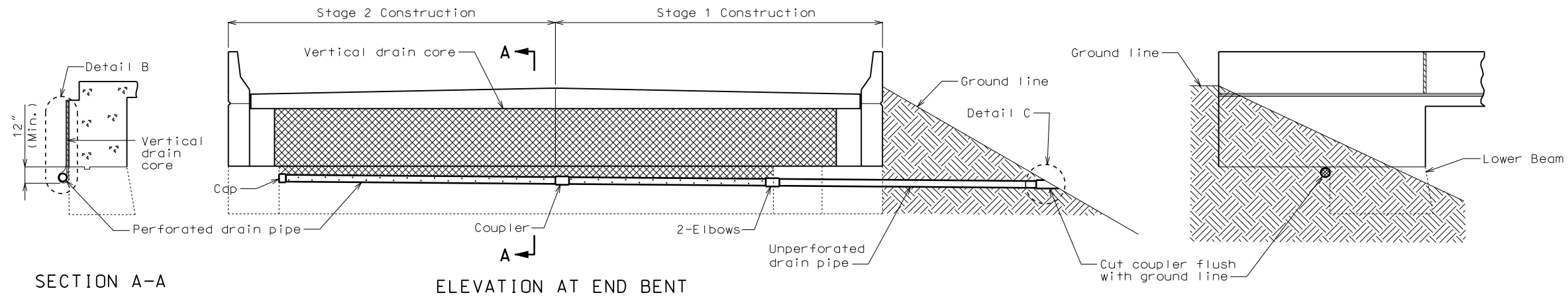
DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

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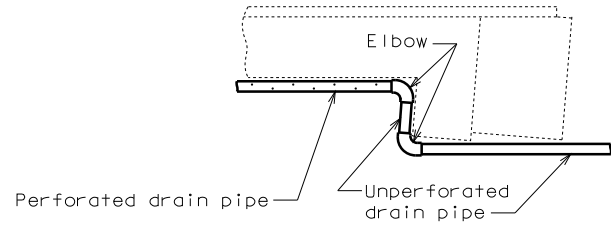




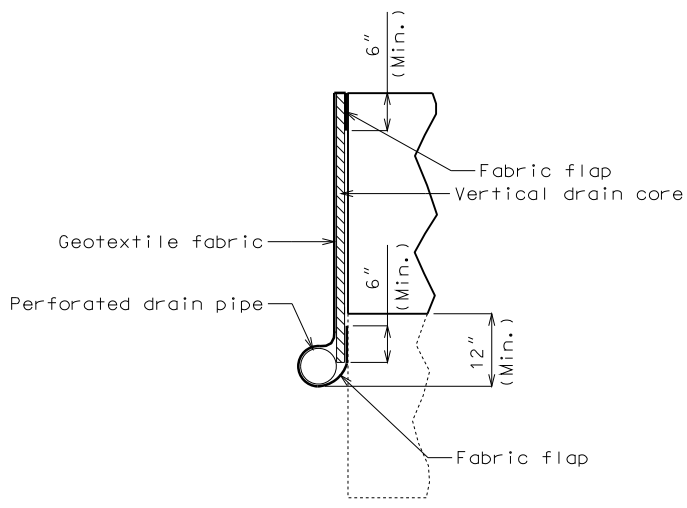
SECTION A-A

ELEVATION AT END BENT

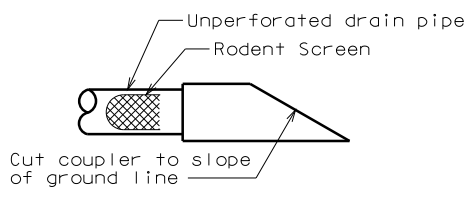
ELEVATION OF WING



PART PLAN AT END BENT



DETAIL B



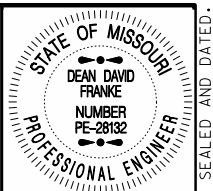
DETAIL C

Note:  
 Drain pipe may be either 6" diameter corrugated metallic-coated steel pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

Place drain pipe at fill face of end bent and slope to lowest grade of ground line, also missing the bottom of wing of end bent by 1 1/2". (See elevation at end bent.)

Perforated pipe shall be placed at fill face side at the bottom of end bent and plain pipe shall be used where the vertical drain ends to the exit at ground line.

VERTICAL DRAIN AT END BENT NO. 1



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DATE PREPARED  
 1/22/2015

ROUTE I-435 STATE MO  
 DISTRICT BR SHEET NO. 6

COUNTY JACKSON  
 JOB NO. J413022B  
 CONTRACT ID.

PROJECT NO.

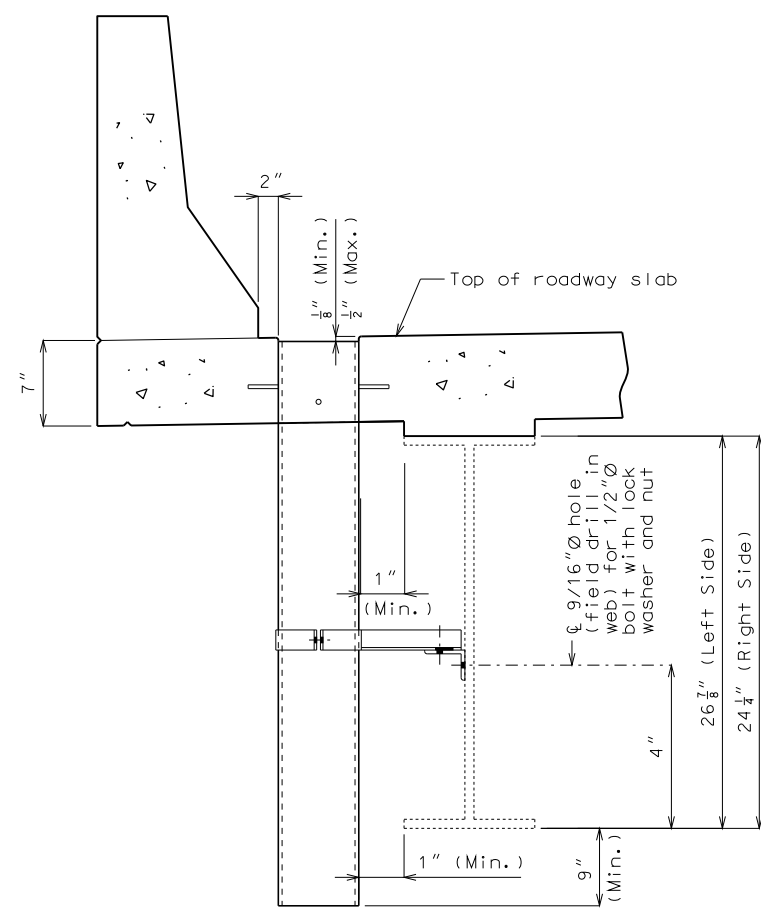
BRIDGE NO. A17505

DATE	DESCRIPTION

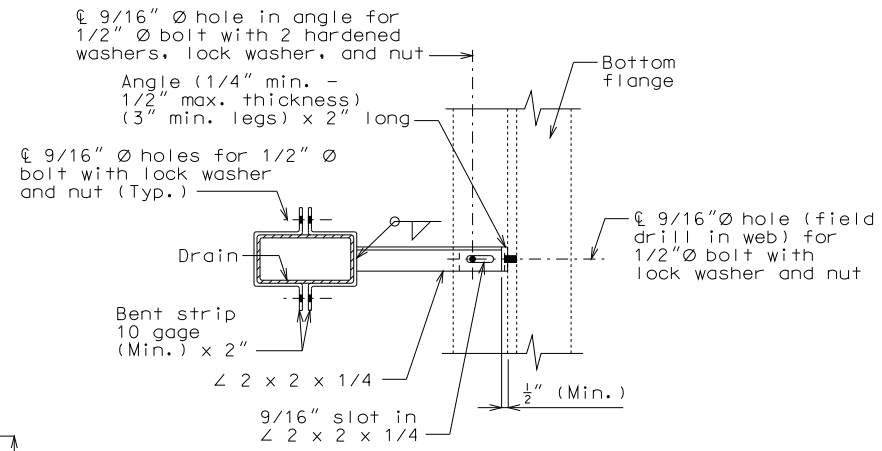
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

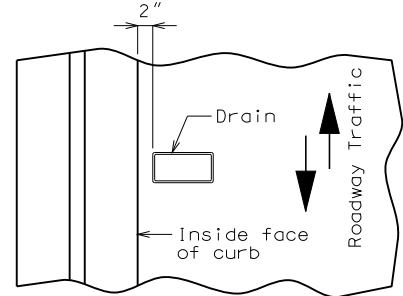
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



PART SECTION NEAR DRAIN

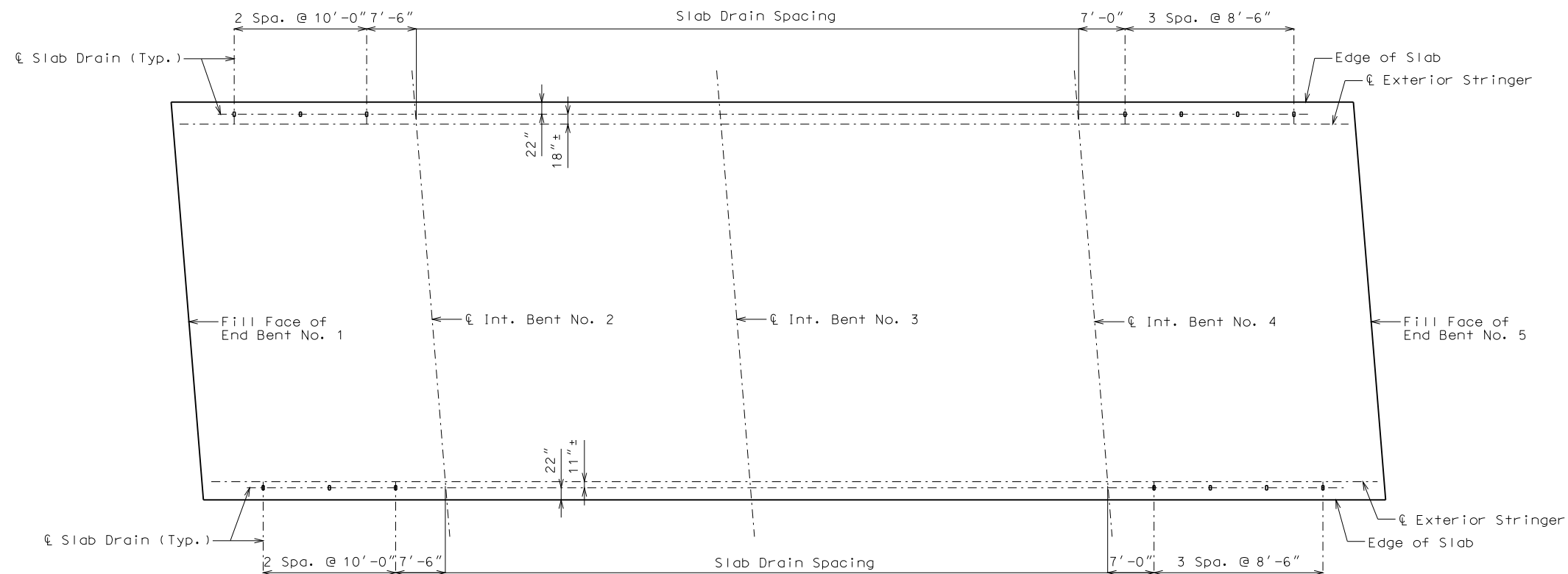


PART SECTION SHOWING BRACKET ASSEMBLY

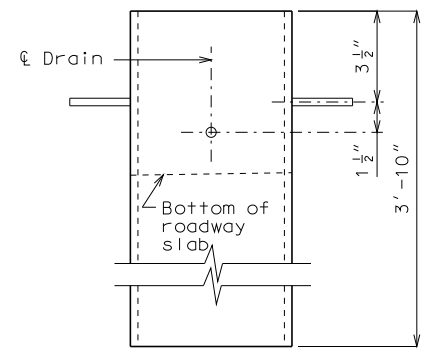


PART PLAN OF SLAB AT DRAIN

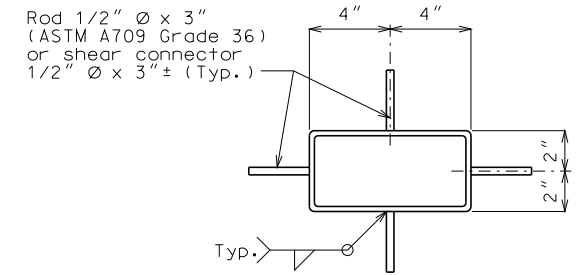
DETAILS OF DRAINS TRANSVERSE TO ROADWAY  
SLAB DRAIN DETAILS



PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



ELEVATION OF DRAIN



PLAN OF DRAIN

Notes:

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

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

Outside dimensions of drains are 8" x 4".

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

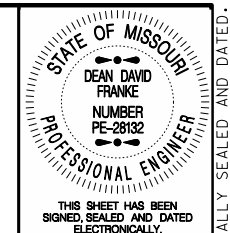
Reinforcing steel shall be shifted to clear drains.

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

All bolts, hardened washers, lock washers and nuts shall be galvanized in accordance with ASTM A153.

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

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



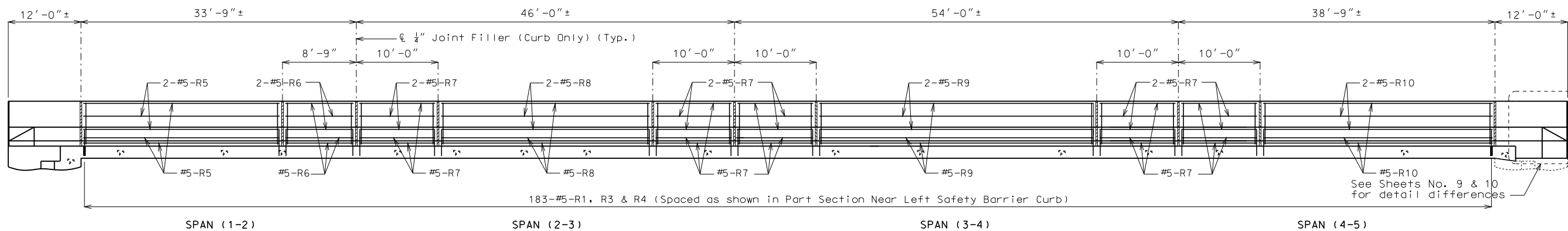
DATE PREPARED 1/15/2015	
ROUTE I-435	STATE MO
DISTRICT BR	SHEET NO. 7
COUNTY JACKSON	
JOB NO. J4130228	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A17505	

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

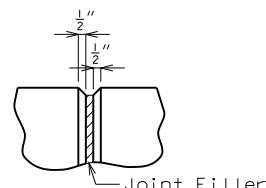
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



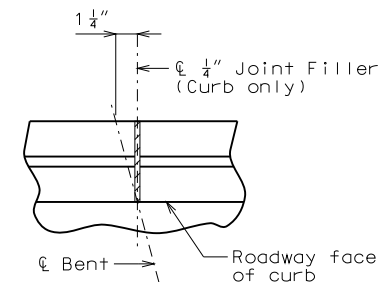
SECTION NEAR LEFT SAFETY BARRIER CURB

Note:  
Left Safety Barrier Curb shown, Right Safety Barrier Curb similar.

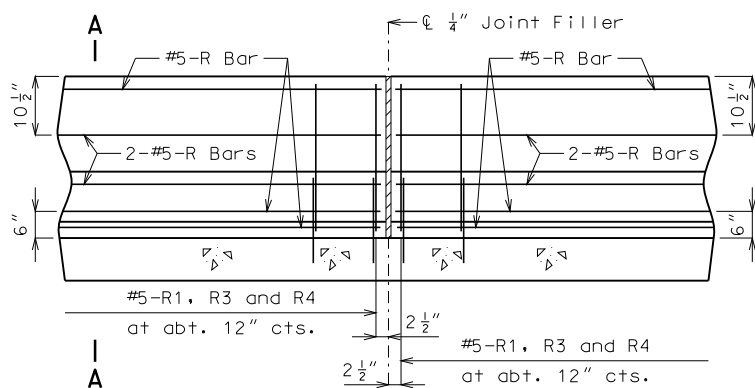
Longitudinal dimensions are horizontal.



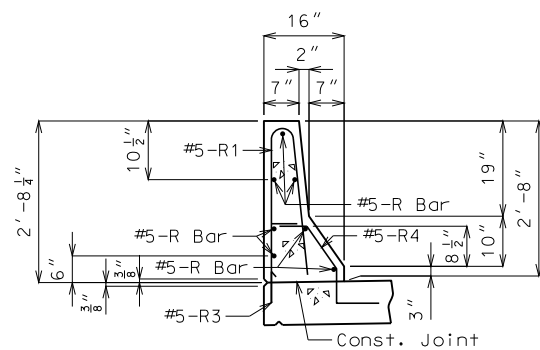
FILLED JOINT DETAIL



PART PLAN SHOWING SAFETY BARRIER CURB JOINT



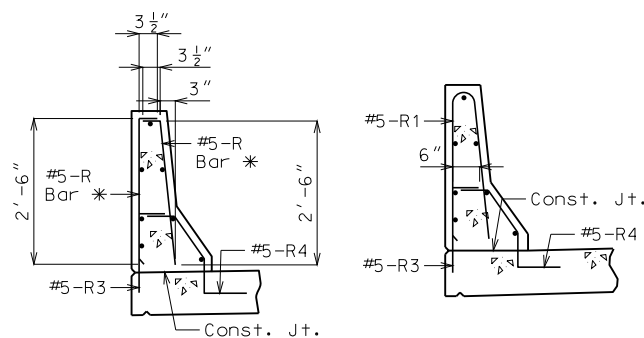
PART ELEVATION OF SAFETY BARRIER CURB (CAST-IN-PLACE CONVENTIONAL FORMING)



SECTION A-A

Use a minimum lap of 2'-11" for #5 horizontal safety barrier curb bars.

The cross-sectional area above the slab = 2.27 sq. ft.



R-BAR PERMISSIBLE ALTERNATE SHAPE

\* 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

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

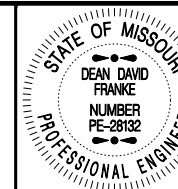
All exposed edges of safety barrier curb shall have either a 1/2-inch radius or a 3/8-inch bevel, unless otherwise noted.

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

Concrete in the safety barrier curb shall be Class B-1.

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

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec. 617. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Safety Barrier Curb.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
1/15/2015

ROUTE I-435 STATE MO

DISTRICT BR SHEET NO. 8

COUNTY JACKSON

JOB NO. J4130228

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A17505

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.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/22/2015

ROUTE I-435 STATE MO

DISTRICT BR SHEET NO. 9

COUNTY JACKSON

JOB NO. J413022B

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A17505

DESCRIPTION

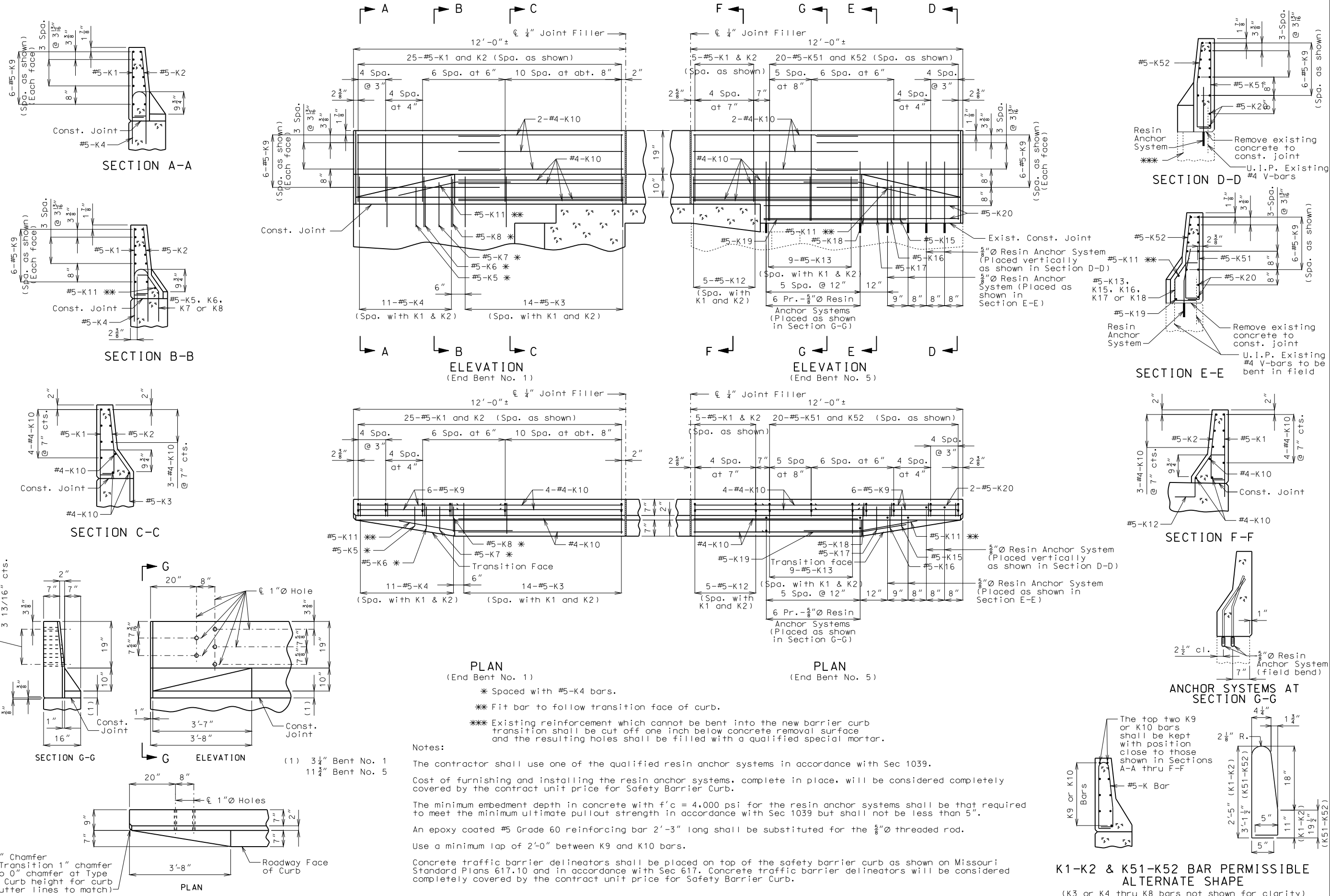
DATE

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.



**PLAN (End Bent No. 1)**

- \* Spaced with #5-K4 bars.
- \*\* Fit bar to follow transition face of curb.
- \*\*\* Existing reinforcement which cannot be bent into the new barrier curb transition shall be cut off one inch below concrete removal surface and the resulting holes shall be filled with a qualified special mortar.

**PLAN (End Bent No. 5)**

**Notes:**

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

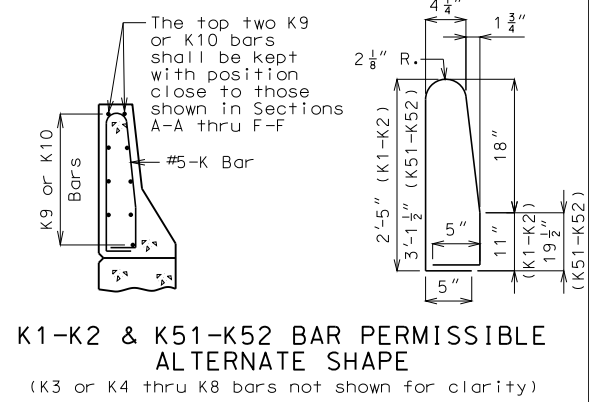
Cost of furnishing and installing the resin anchor systems, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.

The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor systems 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 #5 Grade 60 reinforcing bar 2'-3" long shall be substituted for the 5/8"Ø threaded rod.

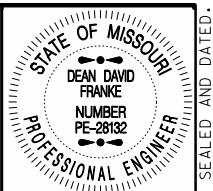
Use a minimum lap of 2'-0" between K9 and K10 bars.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Safety Barrier Curb.



**K1-K2 & K51-K52 BAR PERMISSIBLE ALTERNATE SHAPE**  
(K3 or K4 thru K8 bars not shown for clarity)

The K1 & K2 and K51 & K52 bar combination may be furnished as one bar as shown, at the contractor's option.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/22/2015

ROUTE I-435 STATE MO

DISTRICT BR SHEET NO. 10

COUNTY JACKSON

JOB NO. J413022B

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A17505

DESCRIPTION

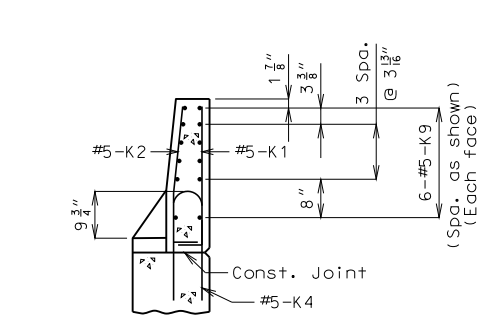
DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

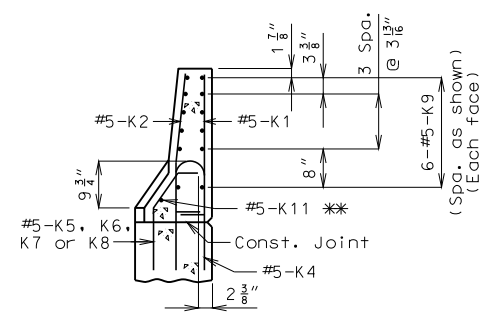
105 WEST CAPITOL JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

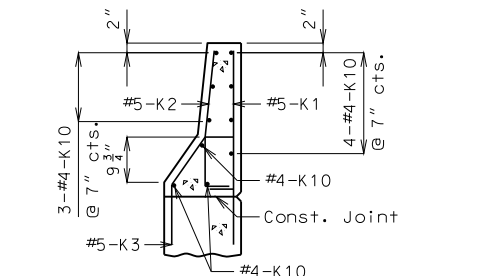
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



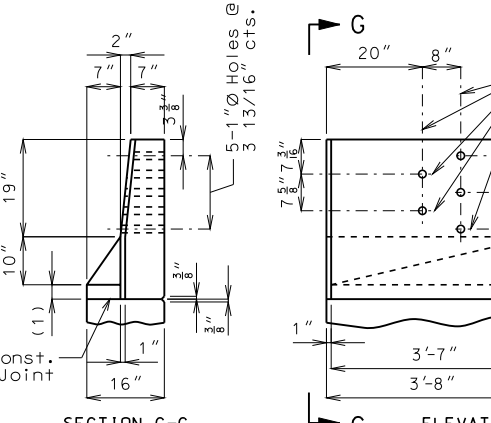
SECTION A-A



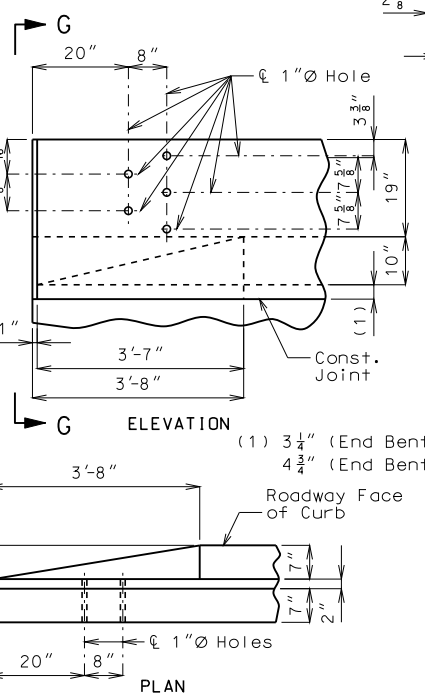
SECTION B-B



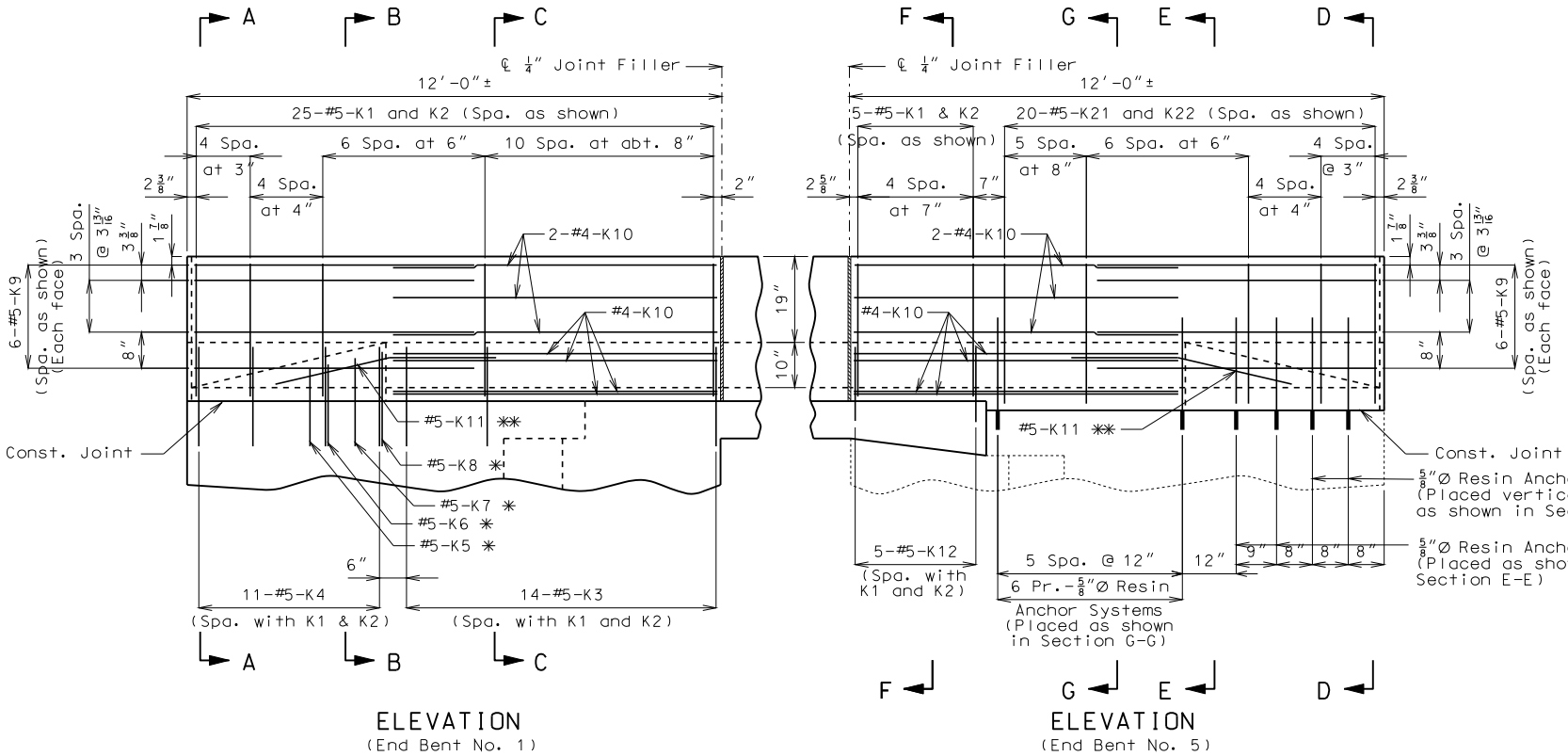
SECTION C-C



SECTION G-G

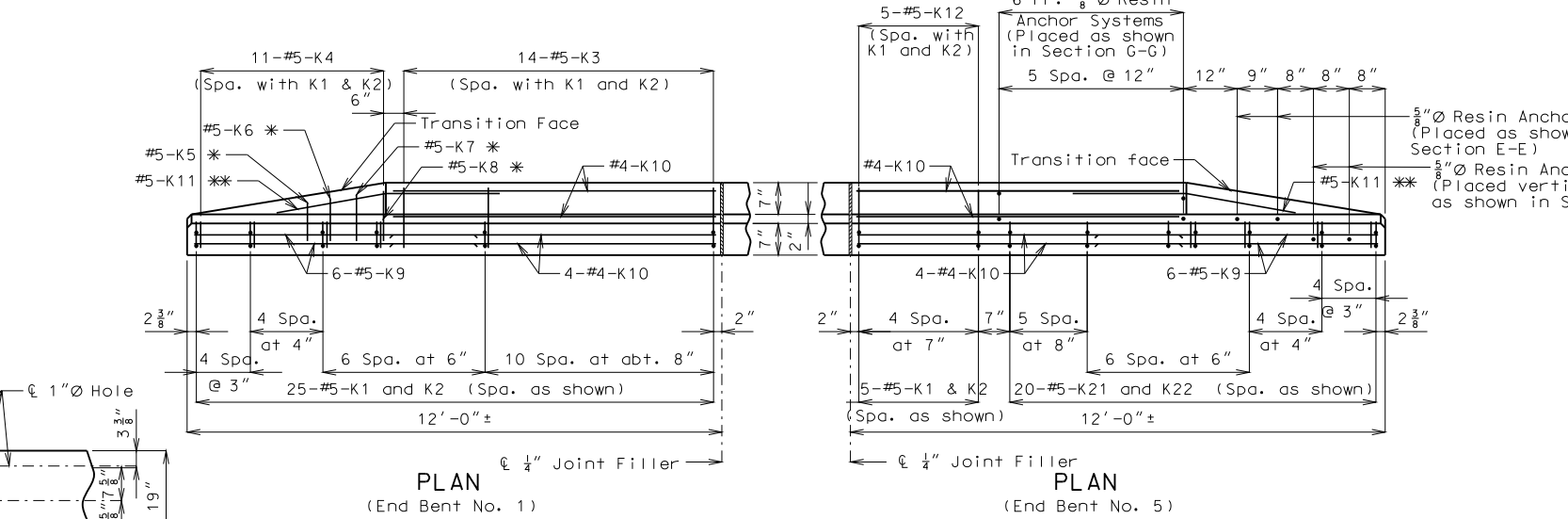


DETAILS OF GUARD RAIL ATTACHMENT



ELEVATION (End Bent No. 1)

ELEVATION (End Bent No. 5)



PLAN (End Bent No. 1)

PLAN (End Bent No. 5)

Notes:

- \* Spaced with #5-K4 bars.
- \*\* Fit bar to follow transition face of curb.

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

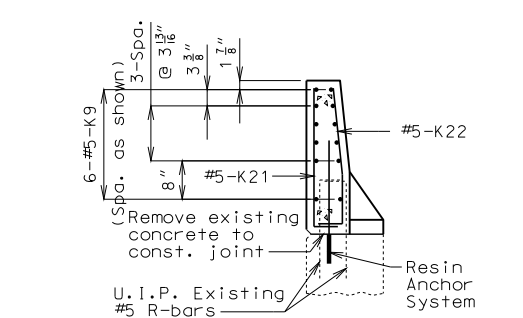
Cost of furnishing and installing the resin anchor systems, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.

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

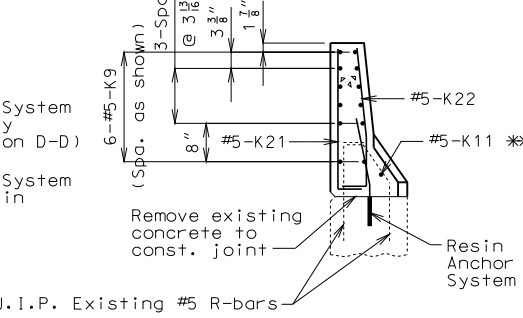
An epoxy coated #5 Grade 60 reinforcing bar 2'-3" long shall be substituted for the  $\frac{3}{8}$ "  $\varnothing$  threaded rod.

Use a minimum lap of 2'-0" between K9 and K10 bars.

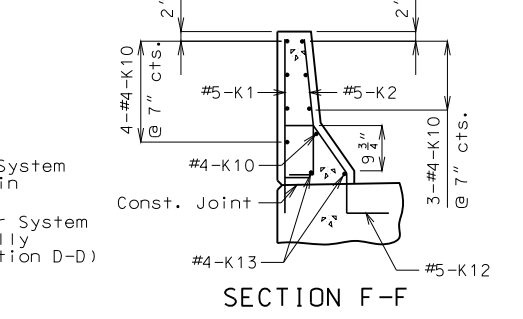
Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Safety Barrier Curb.



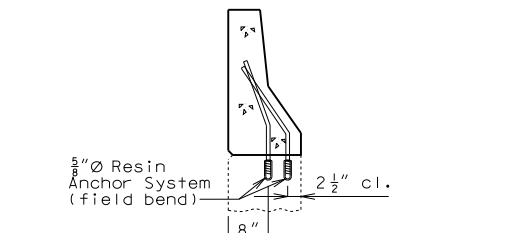
SECTION D-D



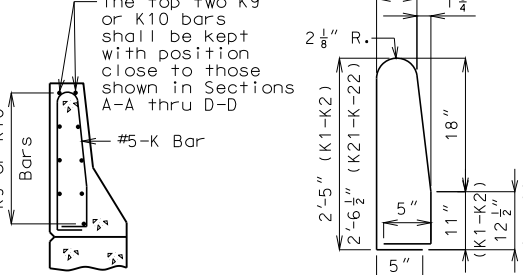
SECTION E-E



SECTION F-F



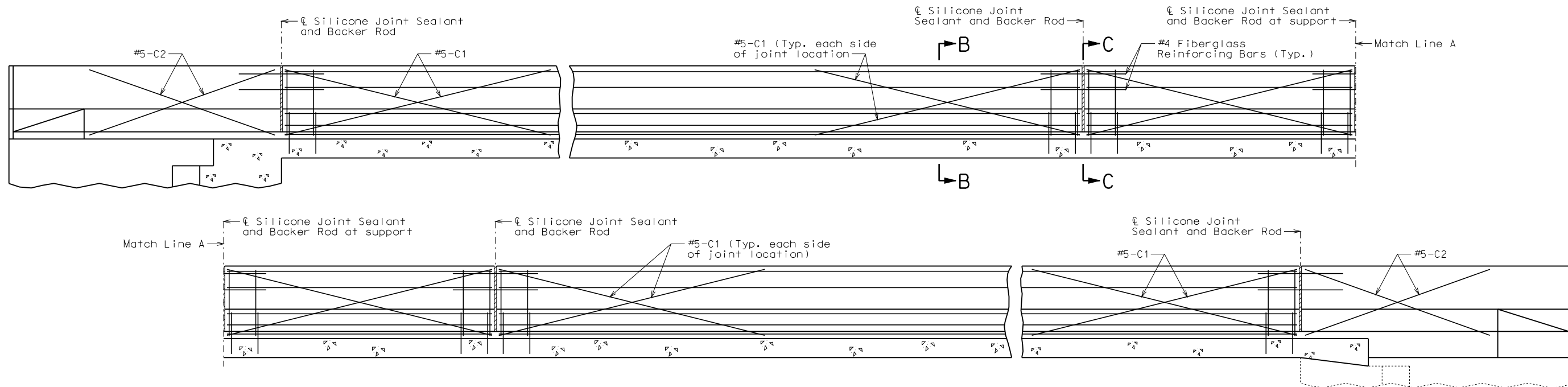
ANCHOR SYSTEMS AT SECTION G-G



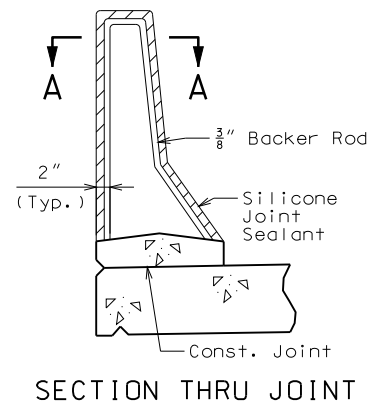
K1-K2 & K21-K22 BAR PERMISSIBLE ALTERNATE SHAPE

(K3 or K4 thru K8 bars not shown for clarity)

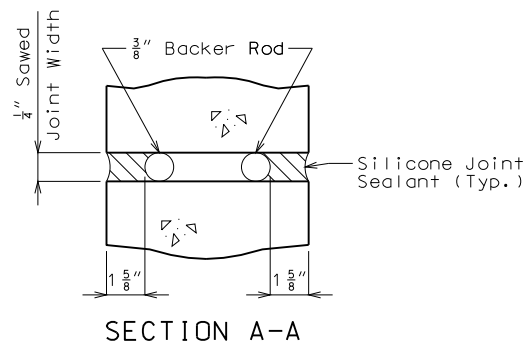
The K1 & K2 and K21 & K22 bar combination may be furnished as one bar as shown, at the contractor's option.



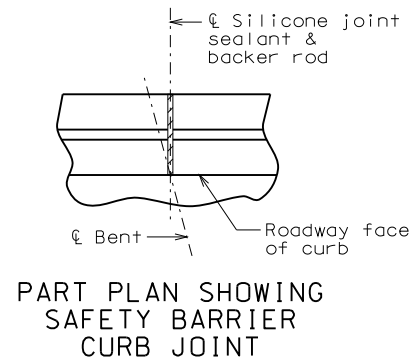
TYPICAL SECTION NEAR LEFT SAFETY BARRIER CURB AT SUPPORT LOCATIONS  
(Left safety barrier curb shown, right safety barrier curb similar.)



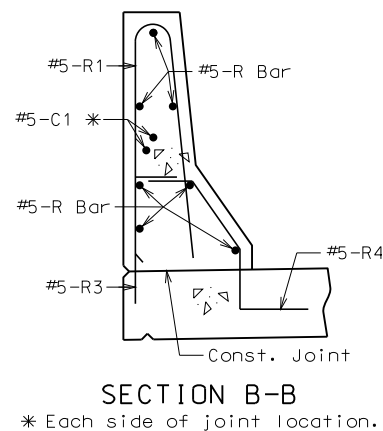
SECTION THRU JOINT



SECTION A-A

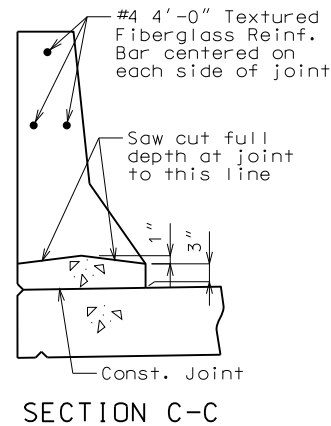


PART PLAN SHOWING SAFETY BARRIER CURB JOINT



SECTION B-B

\* Each side of joint location.

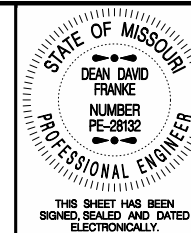


SECTION C-C

**General Notes:**

- Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.
- All exposed edges of safety barrier curb shall have either a 1/2-inch radius or a 3/8-inch bevel, unless otherwise noted.
- Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb per linear foot.
- Concrete in the safety barrier curb shall be Class B-1.
- Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.
- Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Safety Barrier Curb.
- Joint sealant and backer rods shall be used on all slip-form barrier curbs instead of joint filler and shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.
- For slip-form option, all sides of the safety barrier curb shall have a vertically broomed finish and the curb top shall have a transversely broomed finish.
- C bars (slip-form option only) shall be used in addition to cast-in-place conventional forming reinforcement for bridge safety barrier curb.
- Cost of silicone joint sealant and backer rod, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.

**OPTIONAL SLIP-FORM SAFETY BARRIER CURB**



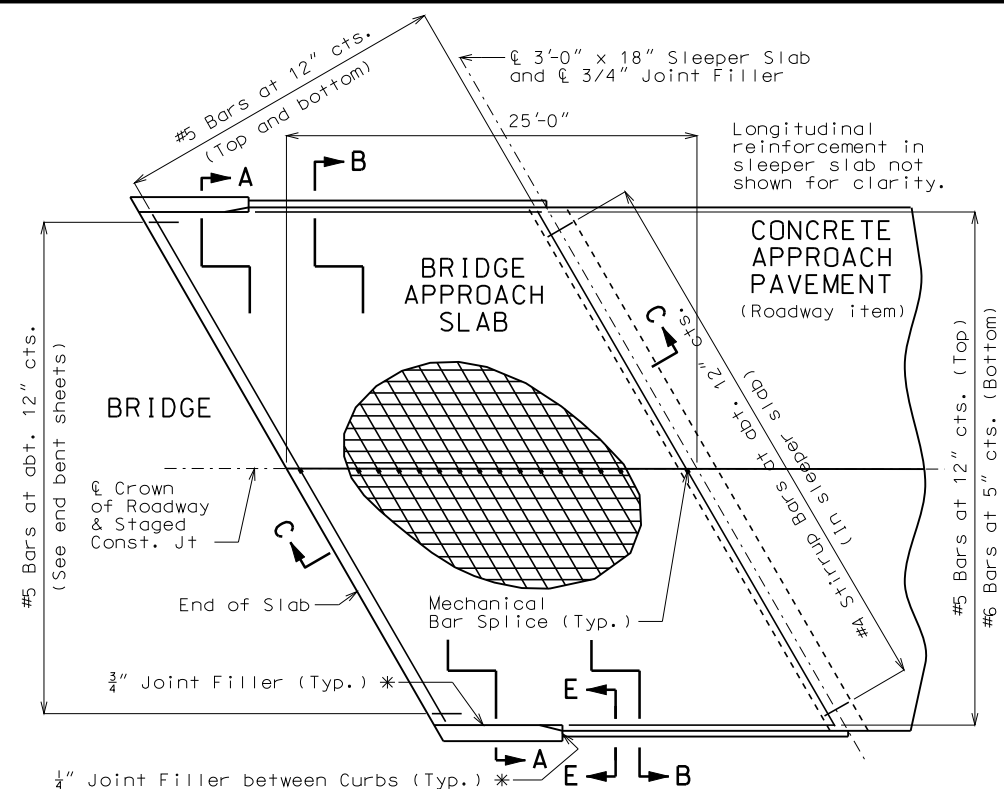
DATE PREPARED  
1/15/2015  
ROUTE I-435 STATE MO  
DISTRICT BR SHEET NO. 11  
COUNTY JACKSON  
JOB NO. J413022B  
CONTRACT ID.

PROJECT NO.  
BRIDGE NO. A17505

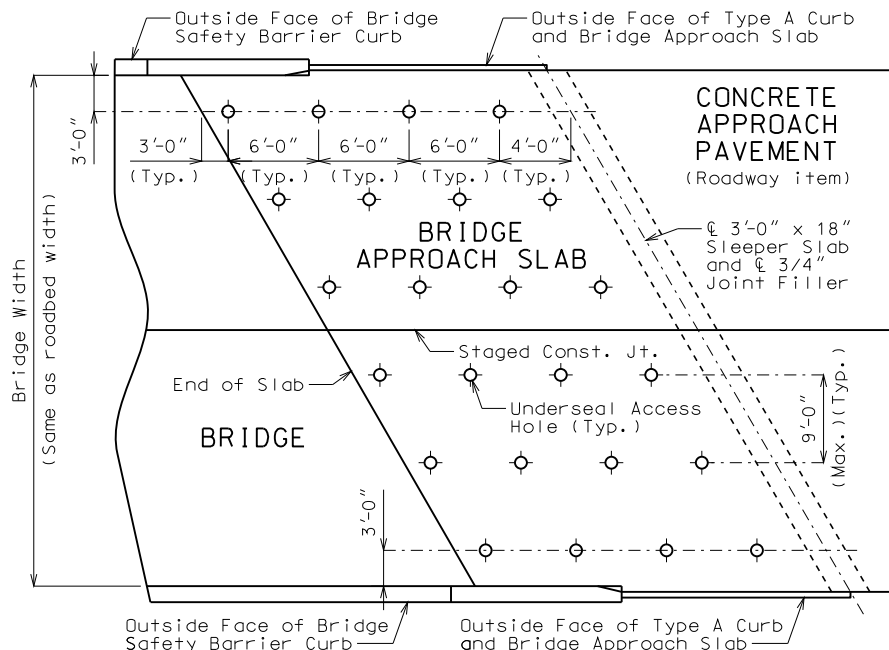
DATE	DESCRIPTION

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

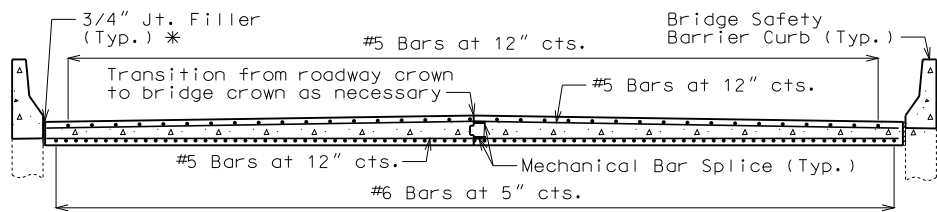
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



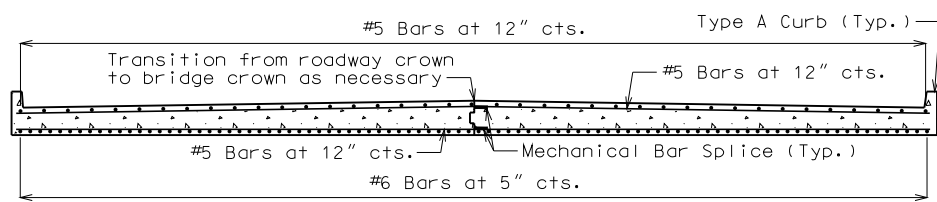
PART PLAN SHOWING REINFORCEMENT



PART PLAN SHOWING UNDERSEAL ACCESS HOLES

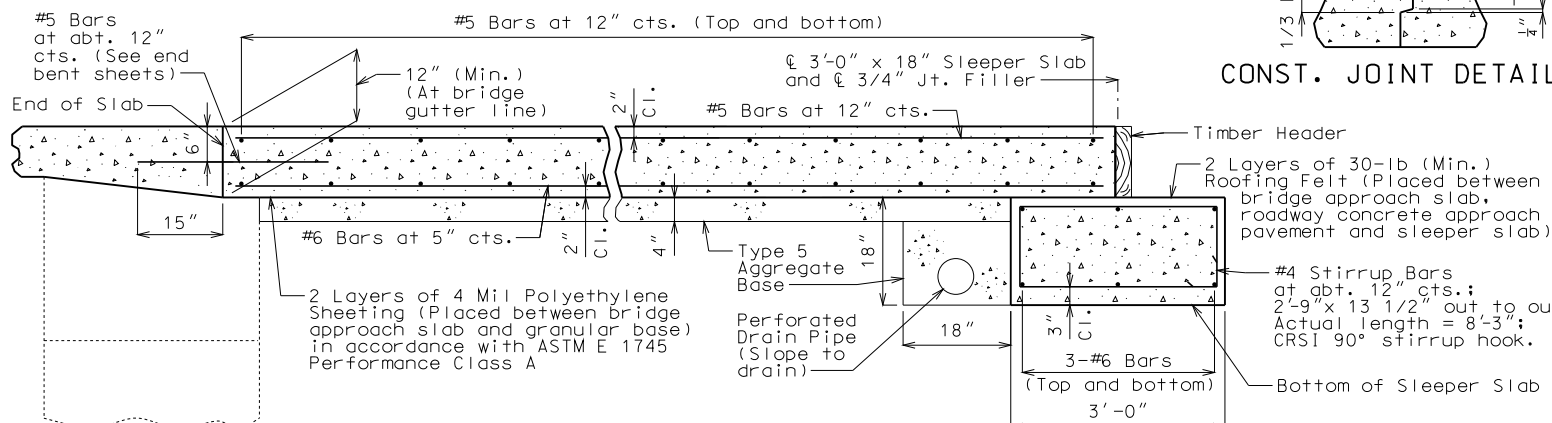


SECTION A-A

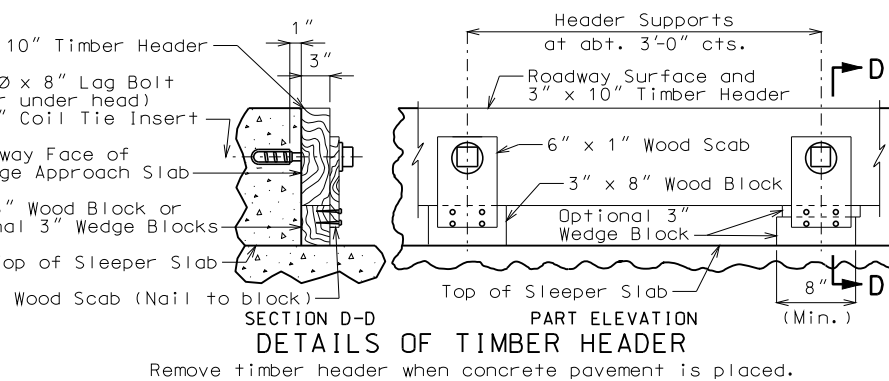


SECTION B-B

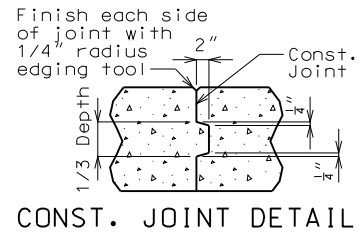
With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.



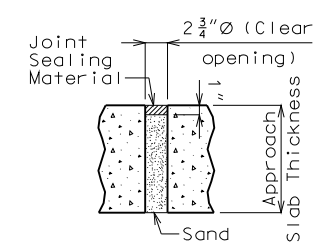
SECTION C-C DETAILS OF BRIDGE APPROACH SLAB (MAJOR ROAD)



Remove timber header when concrete pavement is placed.



CONST. JOINT DETAIL



TYPICAL UNDERSEAL ACCESS HOLE DETAIL

**General Notes:**

All concrete for the bridge approach slab and sleeper slab shall be in accordance with Sec 503 ( $f'c = 4,000$  psi).

The reinforcing steel in the bridge approach slab and the sleeper slab shall be epoxy coated Grade 60 with  $f_y = 60,000$  psi.

Drain pipe may be either 6" diameter corrugated metallic-coated pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

Minimum clearance to reinforcing steel shall be  $1\frac{1}{2}$ ", unless otherwise shown.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by lap splicing the #5 bars 25".

Mechanical bar splices shall be in accordance with Sec 710. (Estimated 56 splices per slab)

All joint filler shall be in accordance with Sec 1057 for preformed fiber expansion joint filler except as noted.

The contractor shall pour and satisfactorily finish the bridge before pouring the bridge approach slabs.

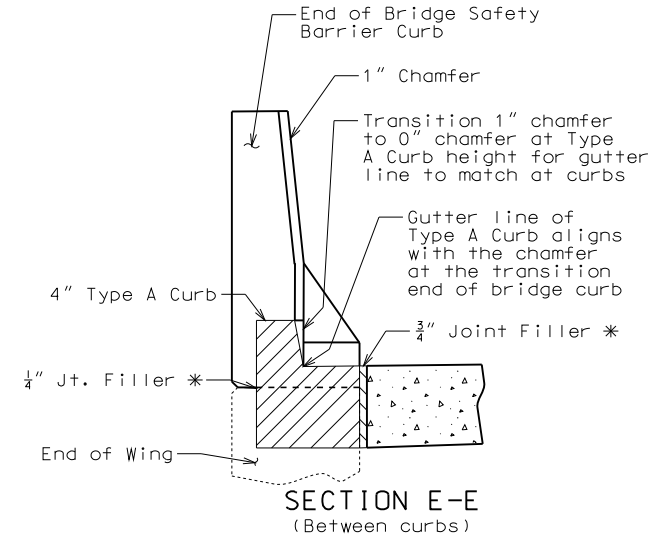
Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge.

For Concrete Approach Pavement details, see roadway plans.

See Missouri Standard Plans Drawing 609.00 for details of Type A Curb.

Payment for furnishing all materials, labor and excavation necessary to construct the approach slab, including the timber header, sleeper slab, underdrain, Type 5 aggregate base, joint filler and all other appurtenances and incidental work as shown on this sheet, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab (Major Road) per square yard.

\* Seal joint between vertical face of approach slab and wing with "Silicone Joint Sealant for Saw Cut and Formed Joints" in accordance with Sec 717.



SECTION E-E (Between curbs)

STATE OF MISSOURI  
DEAN DAVID FRANKE  
NUMBER PE-28132  
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 1/15/2015

ROUTE: I-435 STATE: MO

DISTRICT: BR SHEET NO.: 12

COUNTY: JACKSON

JOB NO.: J4130228

CONTRACT ID:

PROJECT NO.:

BRIDGE NO.: A17505

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

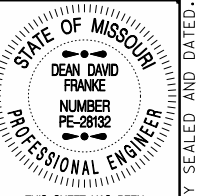
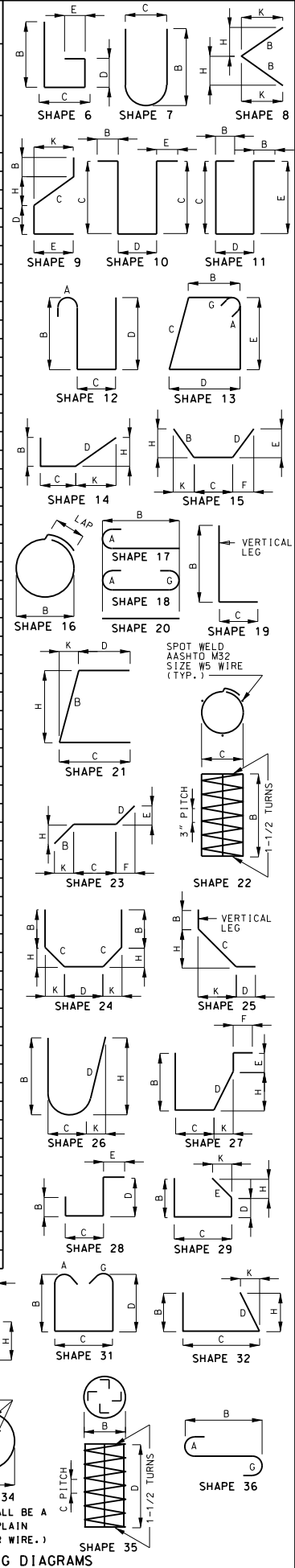
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

BILL OF REINFORCING STEEL

Table with columns: NO. REQ'D., MARK NO., LOCATION, DIMENSIONS (B, C, D, E, F, H, K), NOMINAL LENGTH, ACTUAL LENGTH, WEIGHT. Includes rows for SUPERSTR, END BT NO 1, WING BRACE, DIAPHRAGM, SLAB, and various reinforcement details.

BILL OF REINFORCING STEEL

Table with columns: NO. REQ'D., MARK NO., LOCATION, DIMENSIONS (B, C, D, E, F, H, K), NOMINAL LENGTH, ACTUAL LENGTH, WEIGHT. Includes rows for BARRIER CURB, SLIP FORM, and various reinforcement details.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

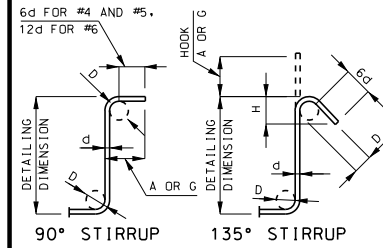
DATE PREPARED: 1/15/2015. ROUTE I-435, STATE MO, DISTRICT BR, SHEET NO. 13, COUNTY JACKSON, JOB NO. J4130228, CONTRACT ID.

PROJECT NO. BRIDGE NO. A17505

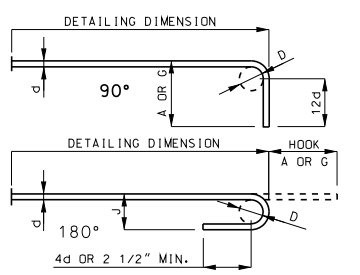
Table with columns: DESCRIPTION, DATE.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION. 105 WEST CAPITOL, JEFFERSON CITY, MO 65102. 1-888-ASK-MODOT (1-888-273-6636)

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



STIRRUP HOOK DIMENSIONS table for Grades 40-50-60 KSI, listing bar sizes (#3, #4, #5, #6) and hook dimensions for 90 and 135 degree hooks.



END HOOK DIMENSIONS table for All Grades, listing bar sizes (#3 to #14) and hook dimensions for 180 and 90 degree hooks.

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

Detailed Nov. 2014 Checked Nov. 2014

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

Sheet No. 13 of 14

BENDING DIAGRAMS

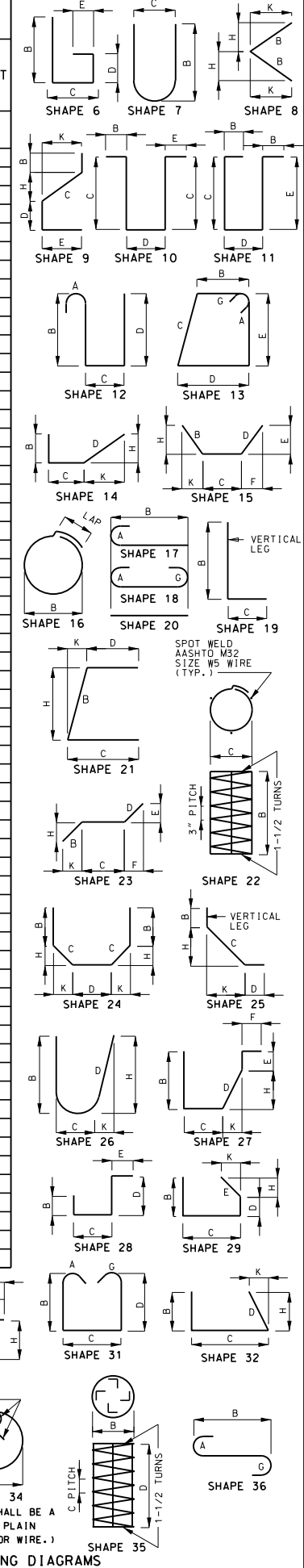


### BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS								NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT		
									B	C	D	E	F	H	K						
SIZE	MARK								FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	LBS.
		Safety Barrier Curb		E																	218
4				E																	7571
5				E																	7789
		TOTAL																			7789
		Slip Form Option		E																	586
5				E																	586
		TOTAL																			586

### BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS								NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT		
									B	C	D	E	F	H	K						
SIZE	MARK								FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	LBS.



**STATE OF MISSOURI**  
 DEAN DAVID FRANK  
 NUMBER PE-28132  
 PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 1/15/2015

ROUTE: I-435 STATE: MO

DISTRICT: BR SHEET NO.: 14

COUNTY: JACKSON

JOB NO.: J413022B

CONTRACT ID.: \_\_\_\_\_

PROJECT NO.: \_\_\_\_\_

BRIDGE NO.: A17505

DESCRIPTION: \_\_\_\_\_

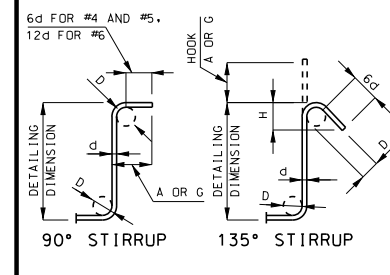
DATE: \_\_\_\_\_

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

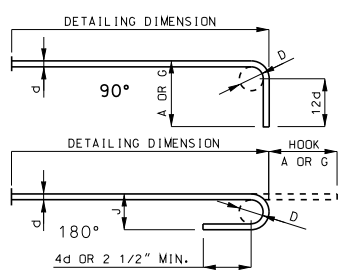
**MoDOT**

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



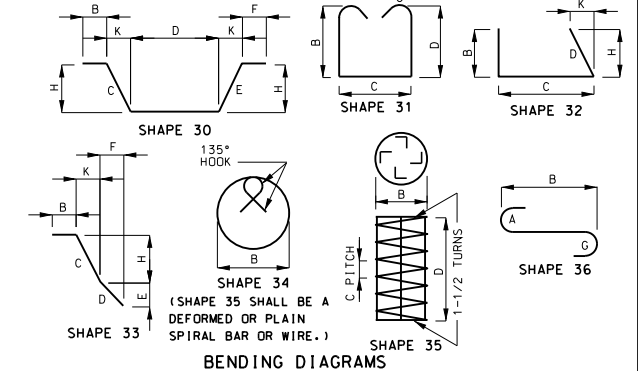
STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK		135° HOOK
		HOOK A OR G	HOOK A OR G	APPROX. H
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"

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



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

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



Detailed Nov. 2014  
 Checked Nov. 2014

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

**DESIGN DESIGNATION**

A.A.D.T. - 2015 = VARIES  
 A.A.D.T. - 2035 = VARIES  
 D.H.V. = VARIES  
 T = VARIES  
 V = VARIES  
 D = VARIES

FUNCTIONAL CLASSIFICATION-INTERSTATE

**NO RIGHT OF WAY ACQUISITION**

**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
 PLANS FOR PROPOSED  
 STATE HIGHWAY  
 JACKSON COUNTY**

**INDEX OF SHEETS**

DESCRIPTION	SHEET NUMBER
TITLE SHEET	1
TYPICAL SECTIONS (TS)	---
QUANTITIES (QU)	---
PLAN-PROFILE (PP)	---
RIGHT OF WAY (RW)	---
REFERENCE POINTS (RP)	---
COORDINATE POINTS (CP)	---
SPECIAL SHEETS (SS)	---
TRAFFIC CONTROL SHEETS (TC)	---
EROSION CONTROL SHEETS (EC)	---
LIGHTING (LT)	---
SIGNALS (SG)	---
SIGNING (SN)	---
PAVEMENT MARKING (PM)	---
CULVERT SECTIONS (CS)	---
BRIDGE DRAWINGS (B)	
BR. A16834	1-7
BR. A16856	1-5
BR. A16866	1-7
BR. A22494	1-6



Digitally signed 6/16/2015

DATE PREPARED  
6/16/2015

ROUTE STATE  
I-435 MO

DISTRICT SHEET NO.  
K-C 1

COUNTY  
JACKSON

JOB NO.  
J413028B

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)

MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

Burns & McDonnell Engineering Co., Inc.

9400 Ward Parkway  
Kansas City, Missouri 64114  
816-333-9400

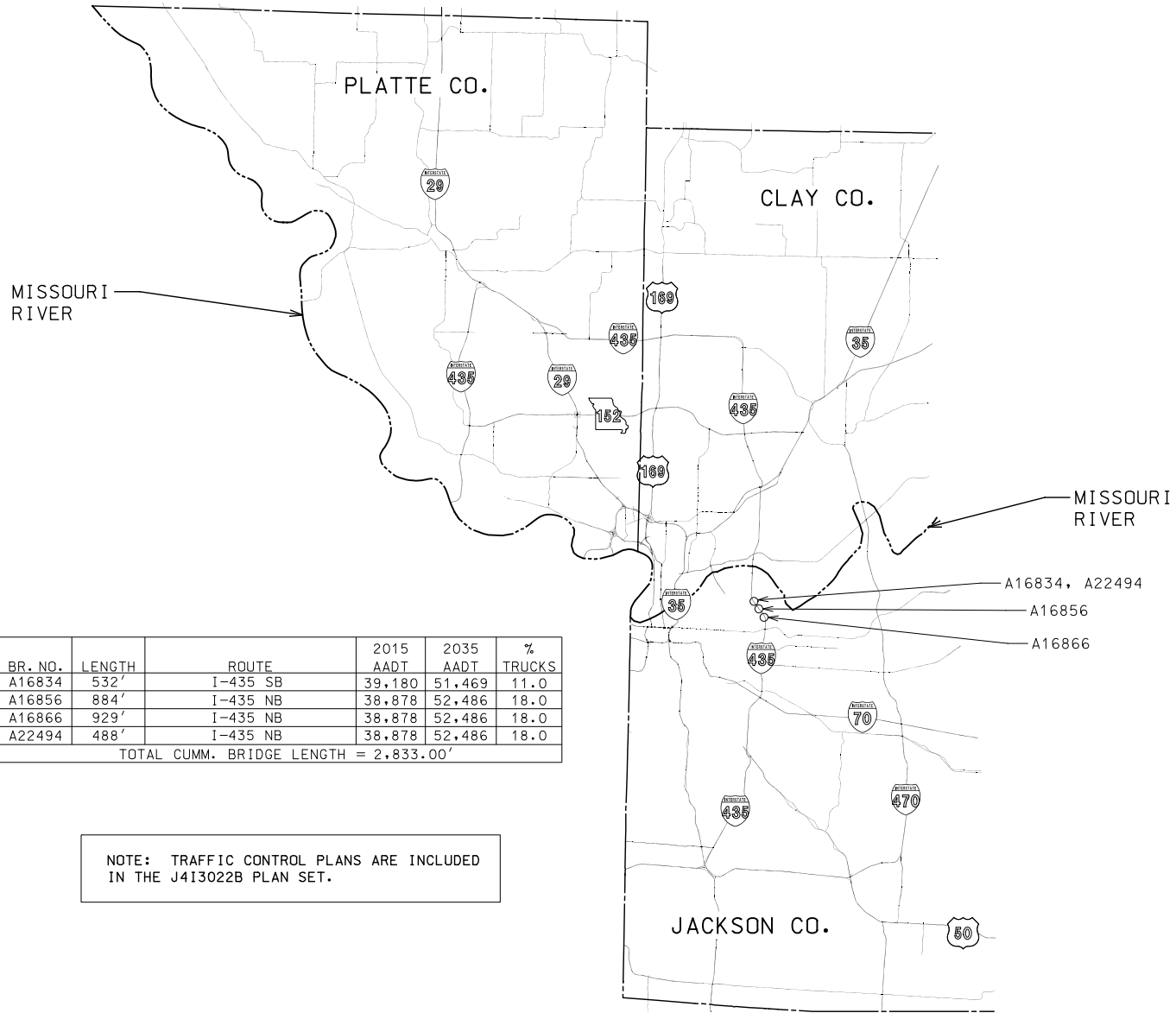
Certificate of Authority  
No. : 000165

BM&D Project No. 80028

Burns & McDonnell  
SINCE 1898

REV.

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



BR. NO.	LENGTH	ROUTE	2015 AADT	2035 AADT	% TRUCKS
A16834	532'	I-435 SB	39,180	51,469	11.0
A16856	884'	I-435 NB	38,878	52,486	18.0
A16866	929'	I-435 NB	38,878	52,486	18.0
A22494	488'	I-435 NB	38,878	52,486	18.0
TOTAL CUMM. BRIDGE LENGTH = 2,833.00'					

NOTE: TRAFFIC CONTROL PLANS ARE INCLUDED IN THE J413022B PLAN SET.

PROJECT LIMITS: VARIOUS BRIDGES

BRIDGE REPAIR & JOINT REPLACEMENTS



SCALE IN MILES

MOBILIZATION				
SHEET NO.	BRIDGE NO.	ROUTE	LOCATION	DESCRIPTION
VAR.	VAR.	VAR.	VAR.	1 LUMP SUM
			TOTAL & PAY	1 LUMP SUM

**CONVENTIONAL SYMBOLS  
 (USED IN PLANS)**

	EXISTING	NEW
BUILDINGS AND STRUCTURES	[Symbol]	[Symbol]
GUARD RAIL	[Symbol]	[Symbol]
CONCRETE RIGHT-OF-WAY MARKER	[Symbol]	[Symbol]
STEEL RIGHT-OF-WAY MARKER	[Symbol]	[Symbol]
LOCATION SURVEY MARKER	[Symbol]	[Symbol]
UTILITIES		
FIBER OPTICS	-FO-	-FO-
OVERHEAD TELEPHONE	-O-	-O-
UNDERGROUND TELEPHONE	-T-	-T-
OVERHEAD POWER	-P-	-P-
UNDERGROUND POWER	-G-	-G-
GAS	-W-	-W-
WATER	[Symbol]	[Symbol]
MANHOLE	[Symbol]	[Symbol]
FIRE HYDRANT	[Symbol]	[Symbol]
WATER VALVE	[Symbol]	[Symbol]
WATER METER	[Symbol]	[Symbol]
DROP INLET	[Symbol]	[Symbol]
DITCH BLOCK	[Symbol]	[Symbol]
GROUND MOUNTED SIGN	[Symbol]	[Symbol]
LIGHT POLE	[Symbol]	[Symbol]
H-FRAME POWER POLE	[Symbol]	[Symbol]
TELEPHONE PEDESTAL	[Symbol]	[Symbol]
FENCE		
CHAIN LINK	[Symbol]	[Symbol]
WOVEN WIRE	[Symbol]	[Symbol]
GATE POST	[Symbol]	[Symbol]
BENCHMARK	[Symbol]	[Symbol]

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

SEC/SUR 30 TWP 50N RGE 32W

U.I.P. and Rehabilitate Existing (75'-113'-113'-100'-77'-4')  
Continuous Comp. Plate Girder Spans and (50') Simple Comp.  
Wide Flange Beam Span



Professional Engineer  
Amanda Renee Bush  
PE-2008019529

DATE PREPARED  
6-12-2015

ROUTE I-435 STATE MO

DISTRICT BR SHEET NO. 1

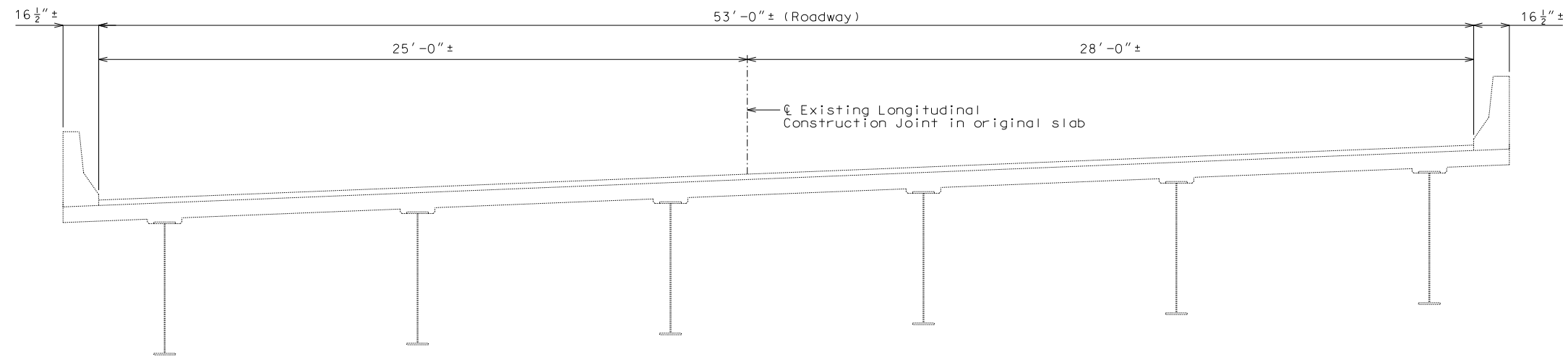
COUNTY JACKSON

JOB NO. J413028B

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A16834



TYPICAL SECTION THRU SLAB

General Notes:

Design Specifications:

2002 - AASHTO LFD (17th Edition) Standard Specifications  
Bridge Deck Rating = 7

Design Loading:

HS20-44 and Alt. Military (1965)  
15#/S.F. Future Wearing Surface  
Earth 120#/C.F.  
Fatigue Stress: A.W.S. D2.0-66 Formulae 5b, 15b & 16b

Design Unit Stresses:

Class B-1 Concrete (Superstructure and Safety Barrier Curb)  $f'c = 4,000$  psi  
Reinforcing Steel (Grade 60)  $f_y = 60,000$  psi

Reinforcing Steel:

Minimum clearance to reinforcing steel shall be  $1\frac{1}{2}$ ", unless otherwise shown.

Miscellaneous:

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

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

Contractor shall verify all dimensions in field before ordering new material.

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.

Traffic Handling:

Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

Joint Filler:

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

Estimated Quantities		
Item		Total
Removal of Exist. Expansion Joints & Adjacent Concrete	linear foot	116
Remove and Replace Barrier Curb	linear foot	14
Class B-1 Concrete	cu. yard	27.0
Reinforcing Steel (Epoxy Coated)	pound	3090

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

Leigh & O'Kane, LLC  
Structural Engineers  
MO State Certificate of Authority #001644  
9201 Ward Parkway, Suite 301  
Kansas City, MO 64114  
816-444-3144 P  
816-444-9655 F  
www.leok.com

REPAIRS TO BRIDGE: I-435 SB  
OVER CANADIAN PACIFIC RAILROAD

STATE ROAD RTE. I-435 FROM RTE. 24 TO MISSOURI RIVER  
IN KANSAS CITY  
STA. 92+27.34± (MATCH EXISTING)

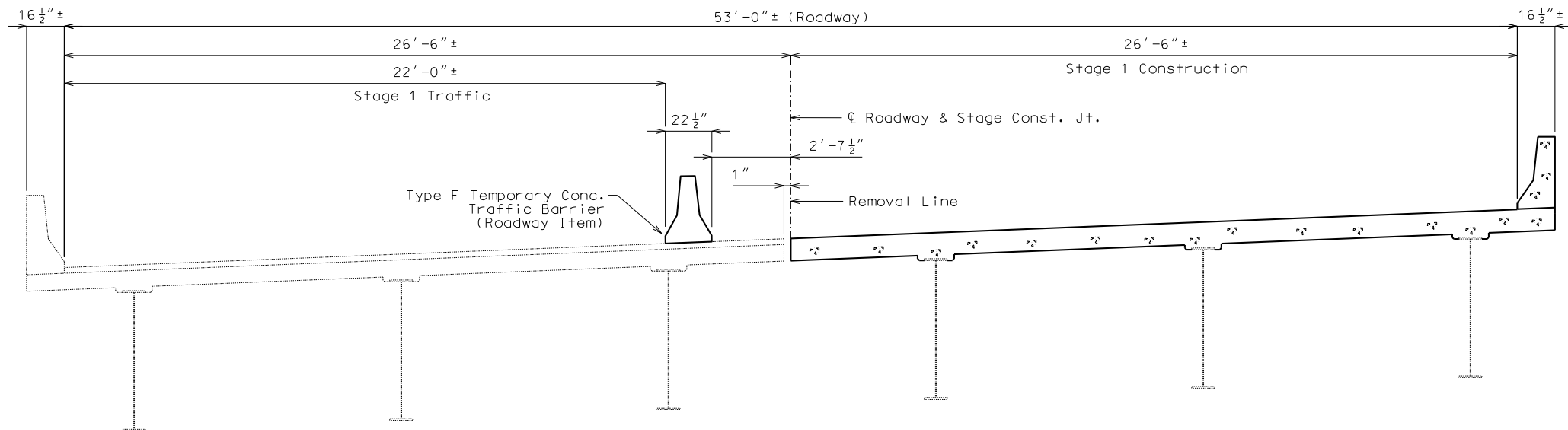
STD. 617.20  
STD. 706.35

DETAILED: APR 2014  
CHECKED: APR 2014

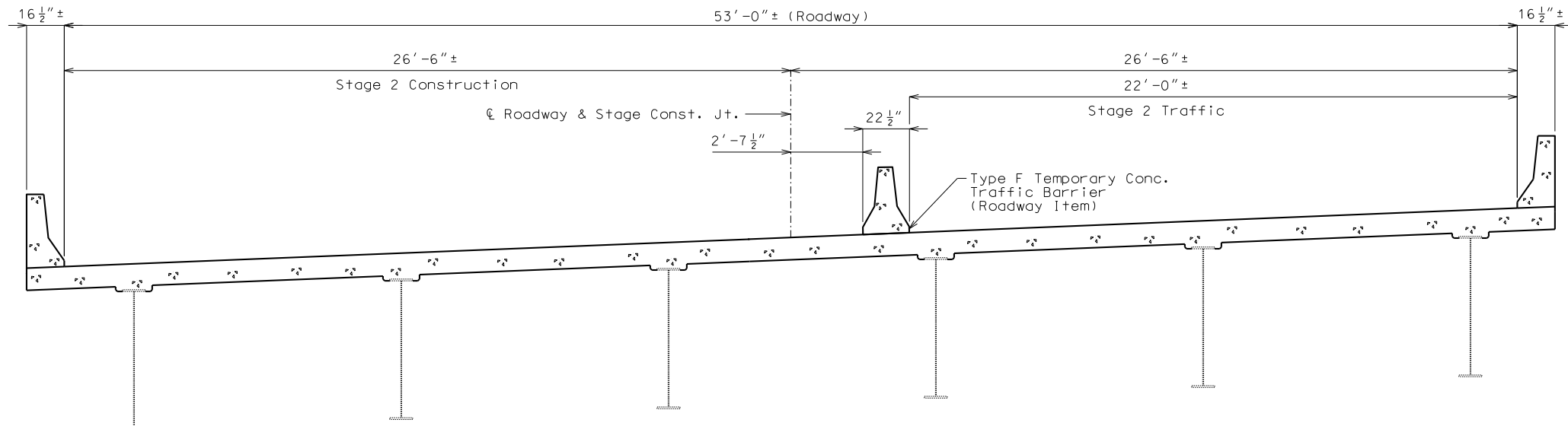
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 7

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**STAGE 1 CONSTRUCTION**  
(Looking Upstation)



**STAGE 2 CONSTRUCTION**  
(Looking Upstation)

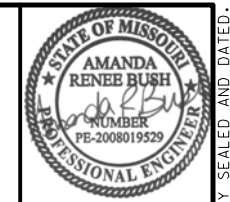
**DETAILS OF STAGE CONSTRUCTION FOR JOINT REPLACEMENT**

DETAILED: APR 2014  
CHECKED: APR 2014

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

Sheet No. 2 of 7

Notes:  
Temporary Barrier shall not be attached to Bridge.



Professional Engineer  
Amanda Renee Bush  
PE-2008019529

DATE PREPARED  
6-12-2015

ROUTE I-435 STATE MO

DISTRICT BR SHEET NO. 2

COUNTY JACKSON

JOB NO. J413028B

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A16834

DATE	DESCRIPTION

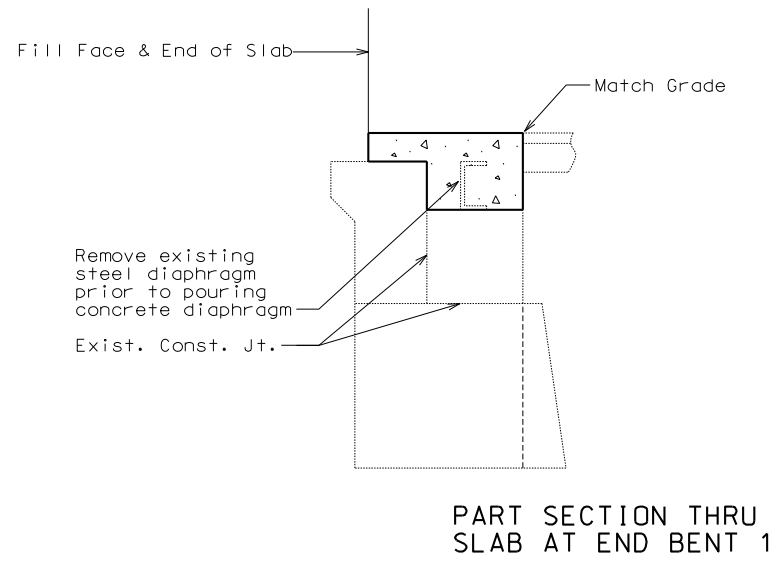
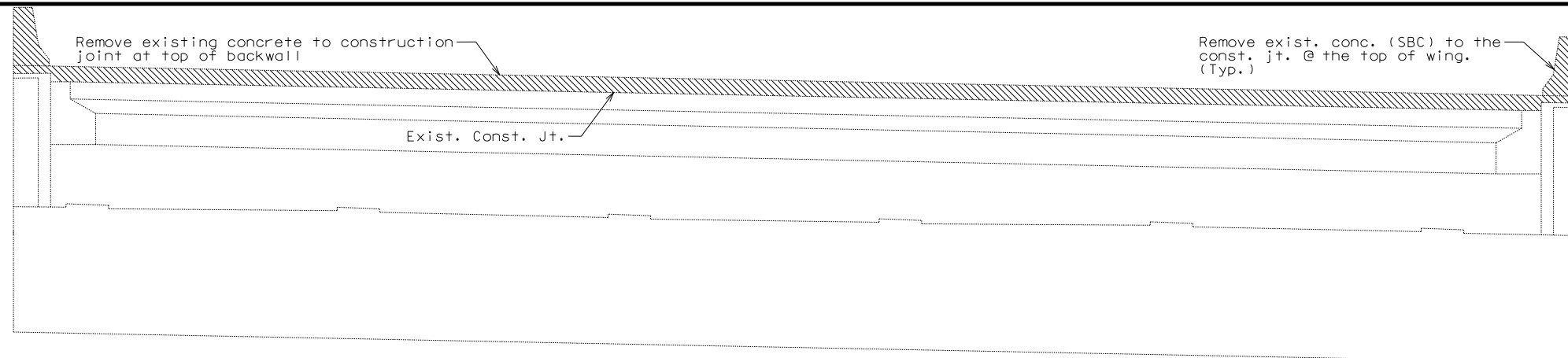
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

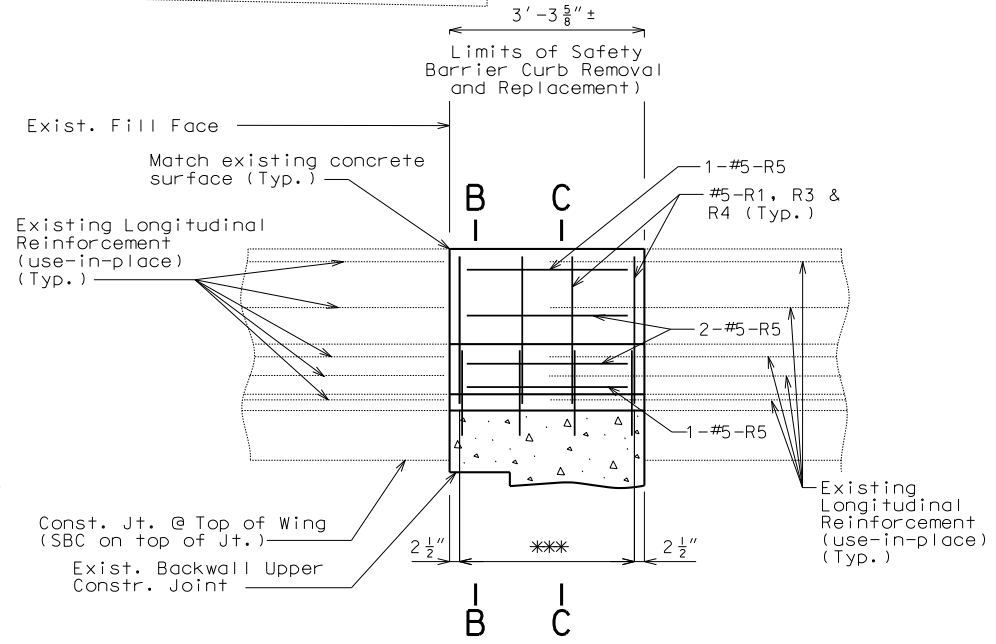
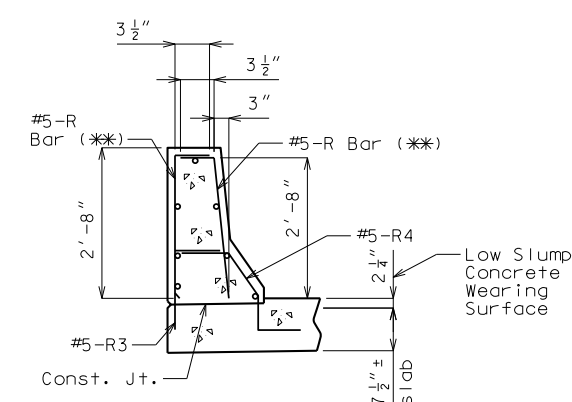
Leigh & O'Kane, LLC  
Structural Engineers  
MO State Certificate of Authority #001644  
9201 Ward Parkway, Suite 301  
Kansas City, MO 64114  
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**DETAILS OF CONCRETE REMOVAL AT END BENT 1**  
(Looking Backstation)



**Notes:**

The cost of concrete removal, except that of safety barriers as shown, will be considered completely covered by the contract unit price for Removal of Existing Expansion Joints and Adjacent Concrete.

Steel end diaphragms shall be removed prior to slab pour. The cost of this work will be considered completely covered by the contract unit price for Removal of Existing Expansion Joints and Adjacent Concrete.

Payment for curb removal and all new concrete and reinforcement for safety barrier curb replacement, complete-in-place, will be completely covered by the contract unit price for Remove and Replace Barrier Curb per linear foot.

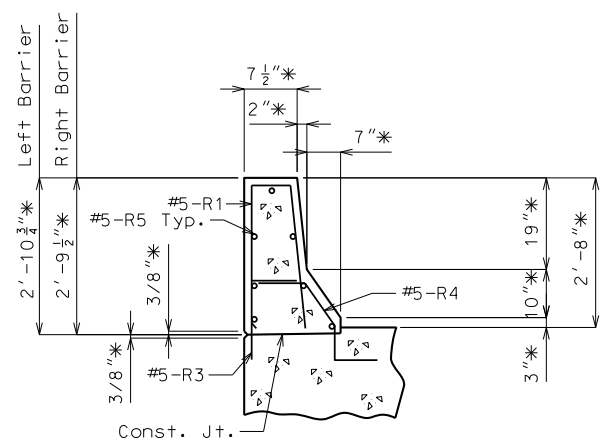
The exposed and accessible surfaces of the existing structural steel and bearings that will be encased in concrete shall be cleaned with a minimum of SSPC-SP-2 surface preparation before concrete is poured. Payment for cleaning steel to be encased in concrete will be considered completely covered by the contract unit price for Class B-1 Concrete.

The contractor shall use a mechanical bar splice for #6-H1 & #6-H2 bars at the specified location. The total bar lengths for bars indicated in the bill of reinforcing steel are determined based on the end of the bars being located flush to the face of the construction joint. No additional payment will be made for any additional bar lengths required for the mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 except that no measurement will be made for mechanical bar splice and will be considered completely covered by the contract unit price for the Reinforcing Steel (Epoxy Coated).

All exposed edges of new barrier curbs shall match existing curbs.

Concrete in new integral bent, the safety barrier curb, and slab shall be Class B-1.

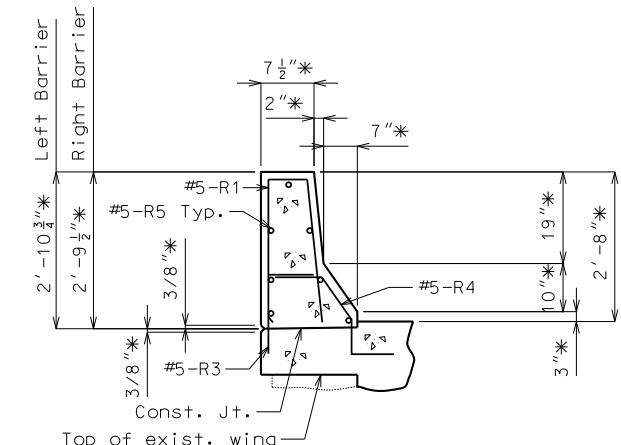
**R-BAR PERMISSIBLE ALTERNATE SHAPE**  
(\*\*) The R1 bar may be separated into two bars as shown, at the contractor's option. (All dimensions are out to out.)



**PART SECTION C-C**  
\* Match existing.

**PART ELEVATION OF LEFT SAFETY BARRIER CURB**  
(Left barrier curb shown, right barrier curb similar)

\*\*\* 4-#5-R1, #5-R3 and #5-R4, equally spaced.

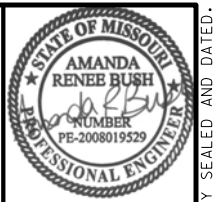


**PART SECTION B-B**  
\* Match existing.

**DIAPHRAGM & BARRIER DETAILS AT END BENT 1**

DETAILED: APR 2014  
CHECKED: APR 2014

Note: This drawing is not to scale. Follow dimensions. Sheet No. 3 of 7



DATE PREPARED 6-12-2015	
ROUTE I-435	STATE MO
DISTRICT BR	SHEET NO. 3
COUNTY JACKSON	
JOB NO. J413028B	
CONTRACT ID.	

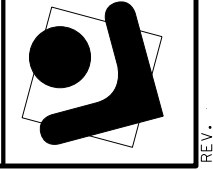
PROJECT NO.
BRIDGE NO. A16834

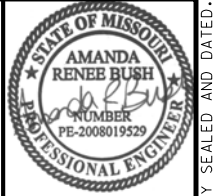
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

**Leigh & O'Kane, LLC**  
Structural Engineers  
MO State Certificate of Authority #001644  
9201 Ward Parkway, Suite 301  
Kansas City, MO 64114  
816-444-3144 P  
816-444-9655 F  
www.leighok.com





Professional Engineer  
Amanda Renee Bush  
PE-2008019529

DATE PREPARED  
**6-12-2015**

ROUTE  
**I-435**

STATE  
**MO**

DISTRICT  
**BR**

SHEET NO.  
**4**

COUNTY  
**JACKSON**

JOB NO.  
**J413028B**

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
**A16834**

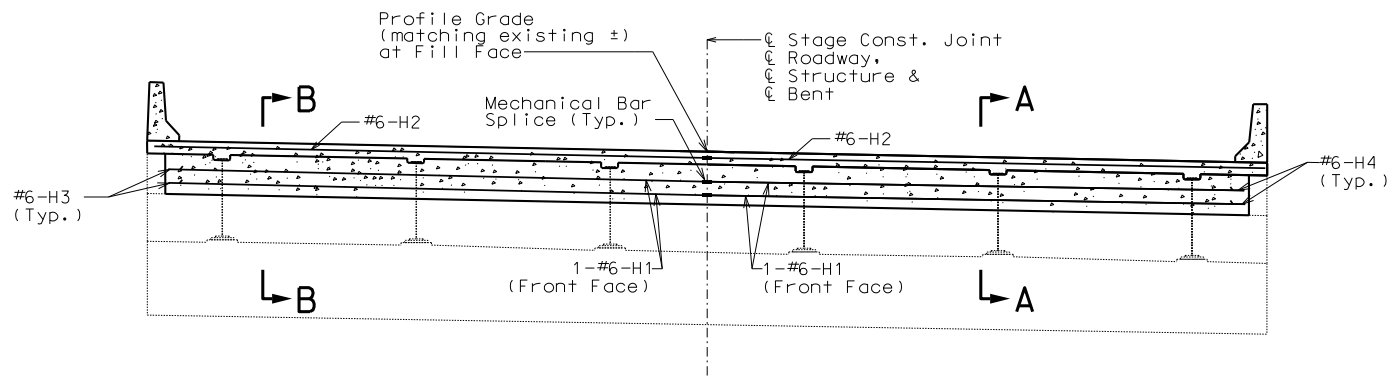
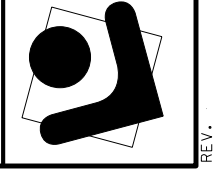
DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

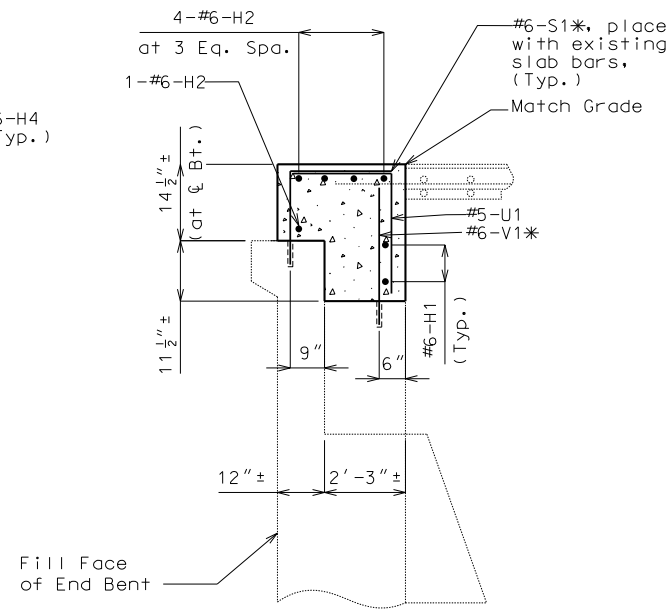
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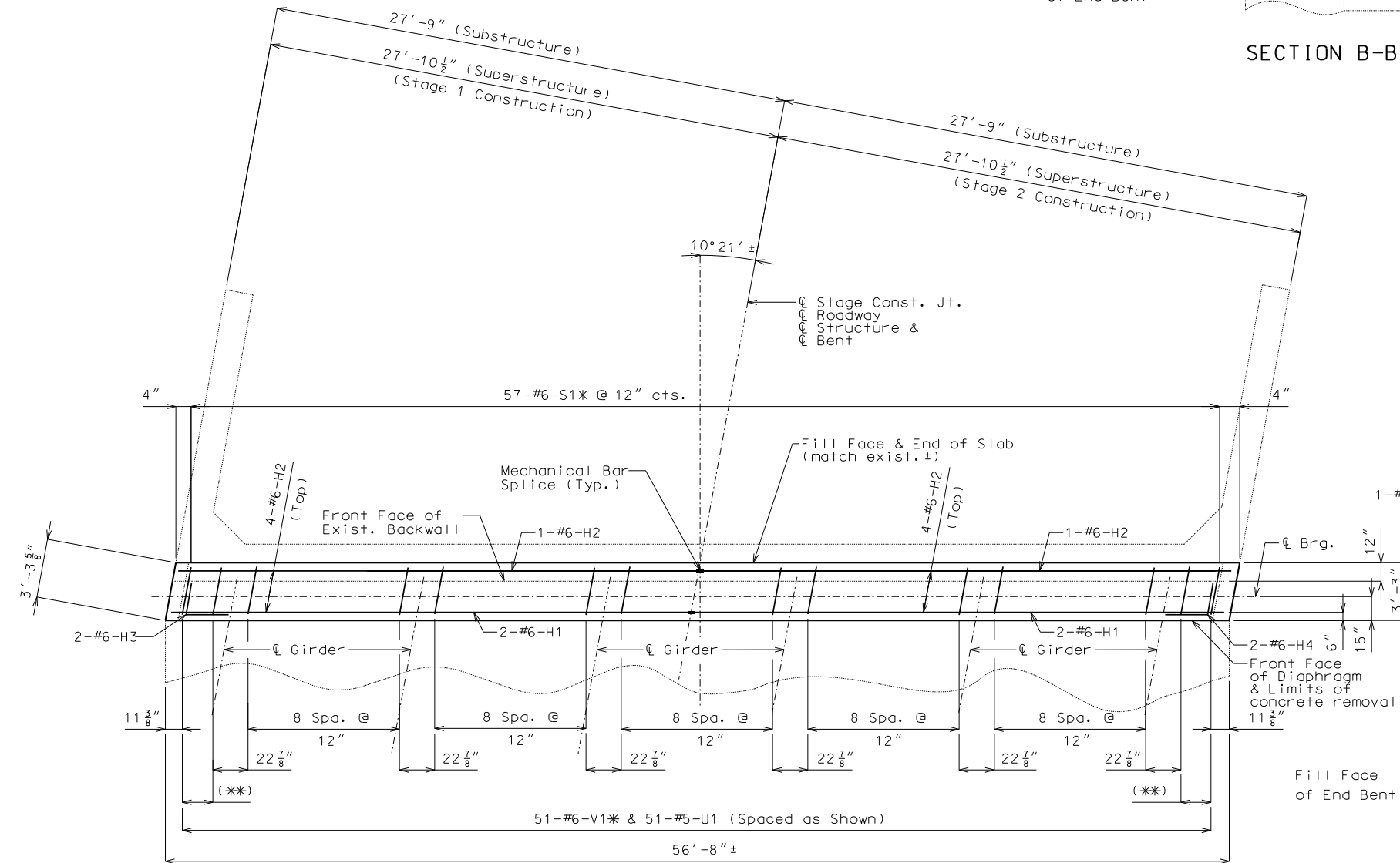
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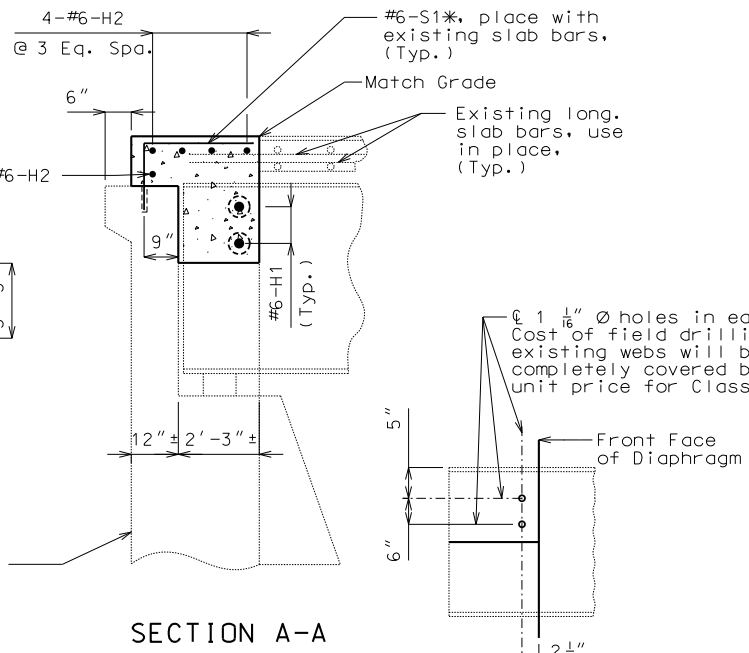
**SECTION NEAR END BENT 1**  
(Looking Backstation)



**SECTION B-B**



**PART PLAN**



**SECTION A-A**

**DETAIL OF WEB HOLES AT END BENT**

**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 systems, complete-in-place, will be considered completely covered by the contract unit price for Class B-1 Concrete.

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".

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-2 surface preparation before concrete is poured. Payment for cleaning steel to be encased in concrete will be considered completely covered by the contract unit price for Class B-1 Concrete.

The contractor shall use a mechanical bar splice for #6-H1 & #6-H2 bars at the specified location. The total bar lengths for bars indicated in the bill of reinforcing steel are determined based on the end of the bars being located flush to the face of the construction joint. No additional payment will be made for any additional bar lengths required for the mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 except that no measurement will be made for mechanical bar splice and will be considered completely covered by the contract unit price for the reinforcing steel.

All concrete in the end bent shall be Class B-1.

Payment for diaphragm and slab concrete, complete in place, will be considered completely covered by the contract unit price for Class B-1 Concrete.

Payment for furnishing and installing diaphragm and slab reinforcing steel, complete in place, will be considered completely covered by the contract unit price for Reinforcing Steel (Epoxy Coated).

\* Resin anchors drilled into Top of Diaphragm and Backwall. Use manufacturer's recommended embedment length (5" min.).

\*\* 2 Spa. @ 10"

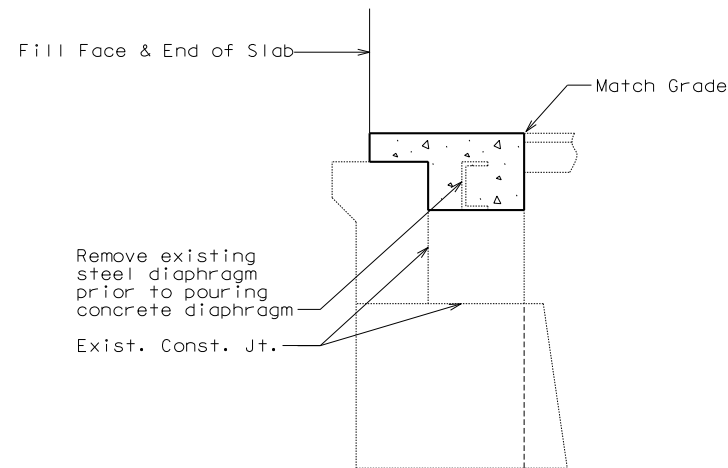
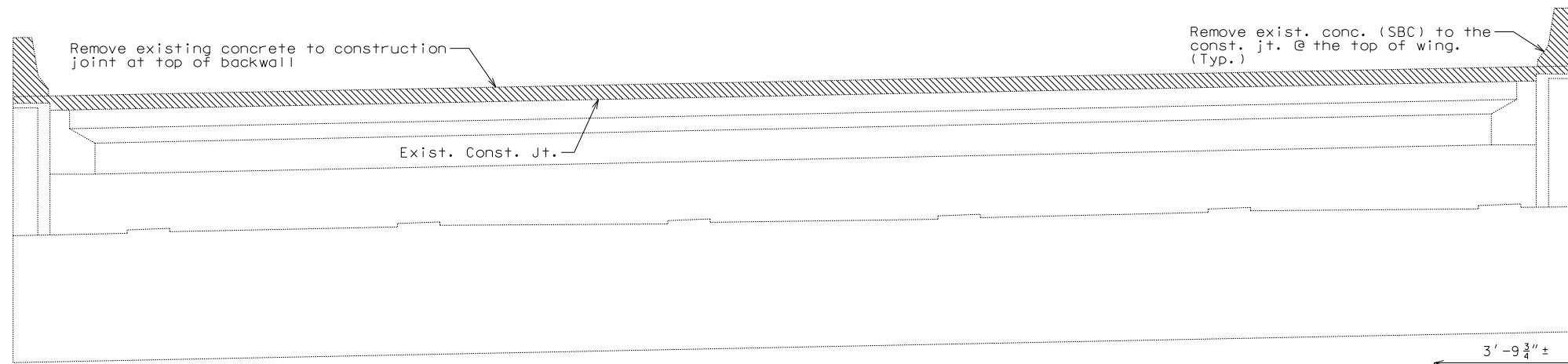
Cost of field drilling holes in existing webs will be considered completely covered by the contract unit price for Class B-1 Concrete.

DETAILED: APR 2014  
CHECKED: APR 2014

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

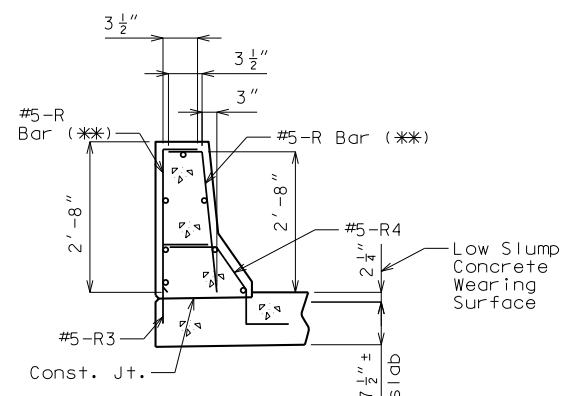
Sheet No. 4 of 7

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



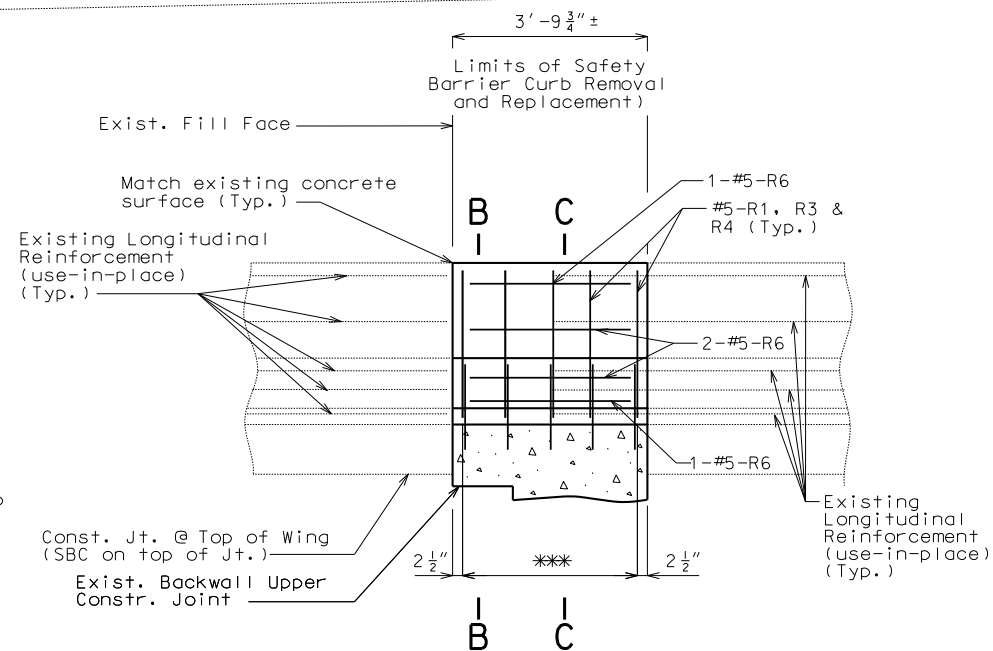
PART SECTION THRU SLAB AT END BENT 7

DETAILS OF CONCRETE REMOVAL AT END BENT 7  
(Looking Upstation)



R-BAR PERMISSIBLE ALTERNATE SHAPE

(\*\*) The R1 bar may be separated into two bars as shown, at the contractor's option. (All dimensions are out to out.)



PART ELEVATION OF LEFT SAFETY BARRIER CURB

(Left barrier curb shown, right barrier curb similar)

\*\*\* 5-#5-R1, #5-R3 and #5-R4, equally spaced.

Notes:

The cost of concrete removal, except that of safety barriers as shown, will be considered completely covered by the contract unit price for Removal of Existing Expansion Joints and Adjacent Concrete.

Steel end diaphragms shall be removed prior to slab pour. The cost of this work will be considered completely covered by the contract unit price for Removal of Existing Expansion Joints and Adjacent Concrete.

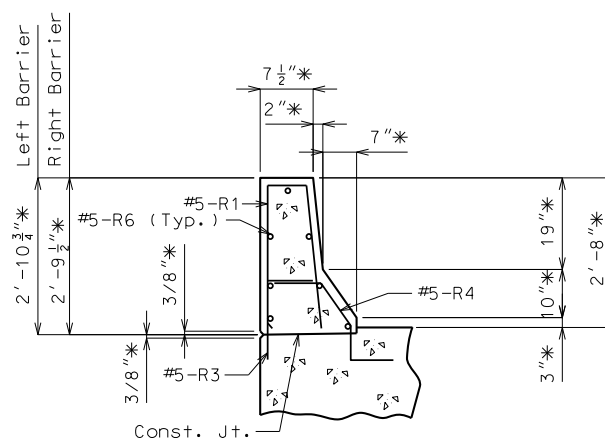
Payment for curb removal and all new concrete and reinforcement for safety barrier curb replacement, complete-in-place, will be completely covered by the contract unit price for Remove and Replace Barrier Curb per linear foot.

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-2 surface preparation before concrete is poured. Payment for cleaning steel to be encased in concrete will be considered completely covered by the contract unit price for Class B-1 Concrete.

The contractor shall use a mechanical bar splice for #6-H5 & #6-H6 bars at the specified location. The total bar lengths for bars indicated in the bill of reinforcing steel are determined based on the end of the bars being located flush to the face of the construction joint. No additional payment will be made for any additional bar lengths required for the mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 except that no measurement will be made for mechanical bar splice and will be considered completely covered by the contract unit price for the Reinforcing Steel (Epoxy Coated).

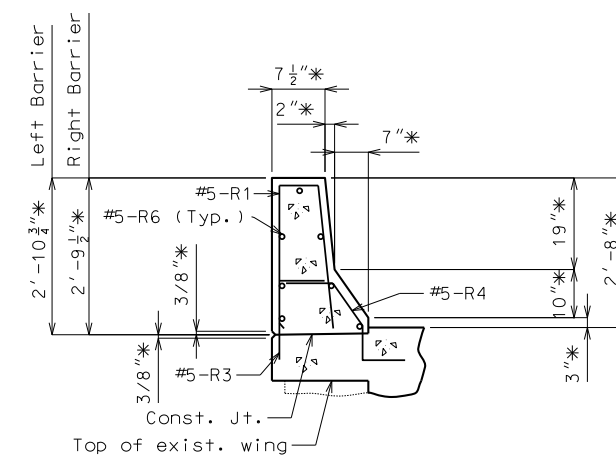
All exposed edges of new barrier curbs shall match existing curbs.

Concrete in new integral bent, the safety barrier curb, and slab shall be Class B-1.



PART SECTION C-C

\* Match existing.



PART SECTION B-B

\* Match existing.

DIAPHRAGM & BARRIER DETAILS AT END BENT 7

DETAILED: APR 2014  
CHECKED: APR 2014

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

Sheet No. 5 of 7



Professional Engineer  
Amanda Renee Bush  
PE-2008019529

DATE PREPARED 6-12-2015	
ROUTE I-435	STATE MO
DISTRICT BR	SHEET NO. 5
COUNTY JACKSON	
JOB NO. J413028B	
CONTRACT ID.	

PROJECT NO.
BRIDGE NO. A16834

DESCRIPTION	DATE

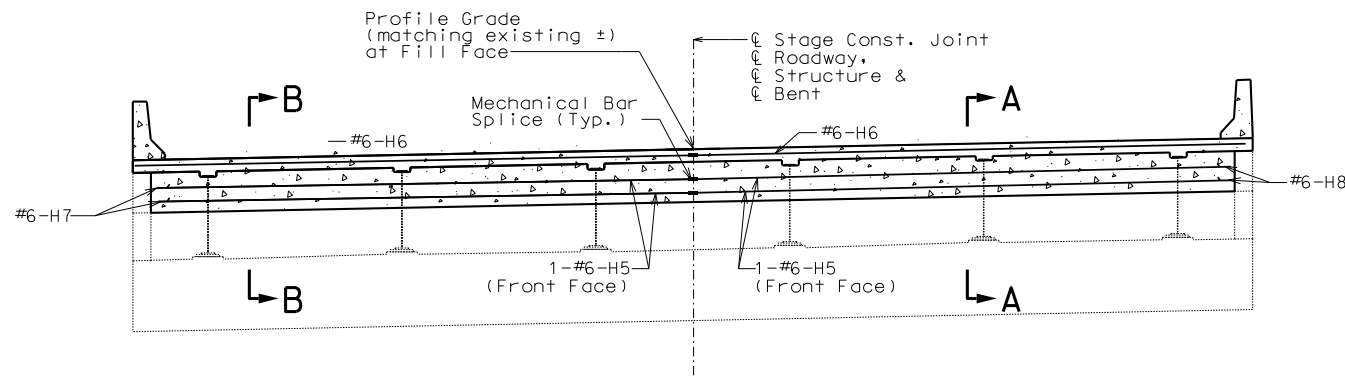
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

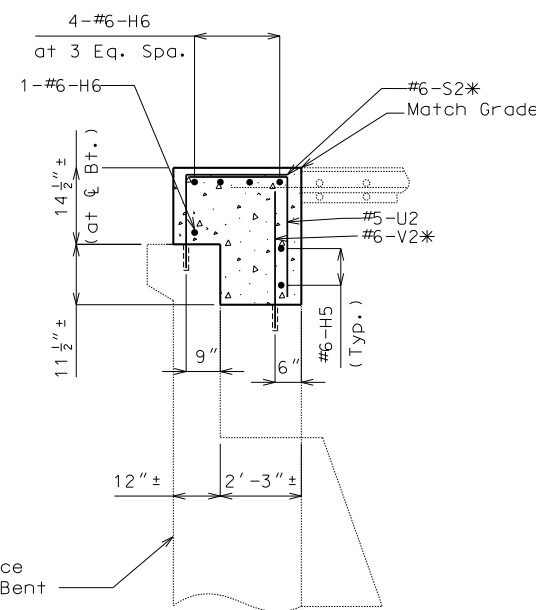
Leigh & O'Kane, LLC  
Structural Engineers  
MO State Certificate of Authority #001644  
9201 Ward Parkway, Suite 301  
Kansas City, MO 64114  
816-444-3144 P  
816-444-9655 F  
www.leighok.com



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



SECTION NEAR CL END BENT 7  
(Looking Upstation)



SECTION B-B

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 systems, complete-in-place, will be considered completely covered by the contract unit price for Class B-1 Concrete.

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".

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-2 surface preparation before concrete is poured. Payment for cleaning steel to be encased in concrete will be considered completely covered by the contract unit price for Class B-1 Concrete.

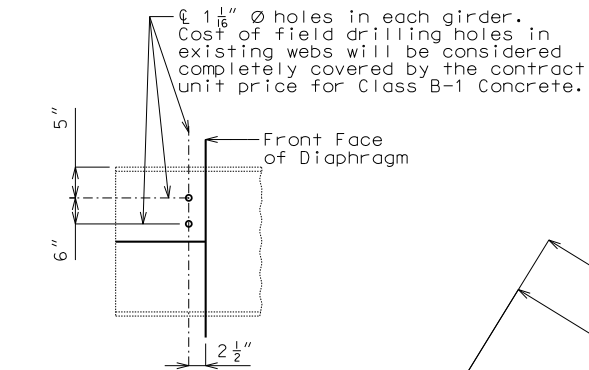
The contractor shall use a mechanical bar splice for #6-H5 & #6-H6 bars at the specified location. The total bar lengths for bars indicated in the bill of reinforcing steel are determined based on the end of the bars being located flush to the face of the construction joint. No additional payment will be made for any additional bar lengths required for the mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 except that no measurement will be made for mechanical bar splice and will be considered completely covered by the contract unit.

All concrete in the end bent shall be Class B-1.

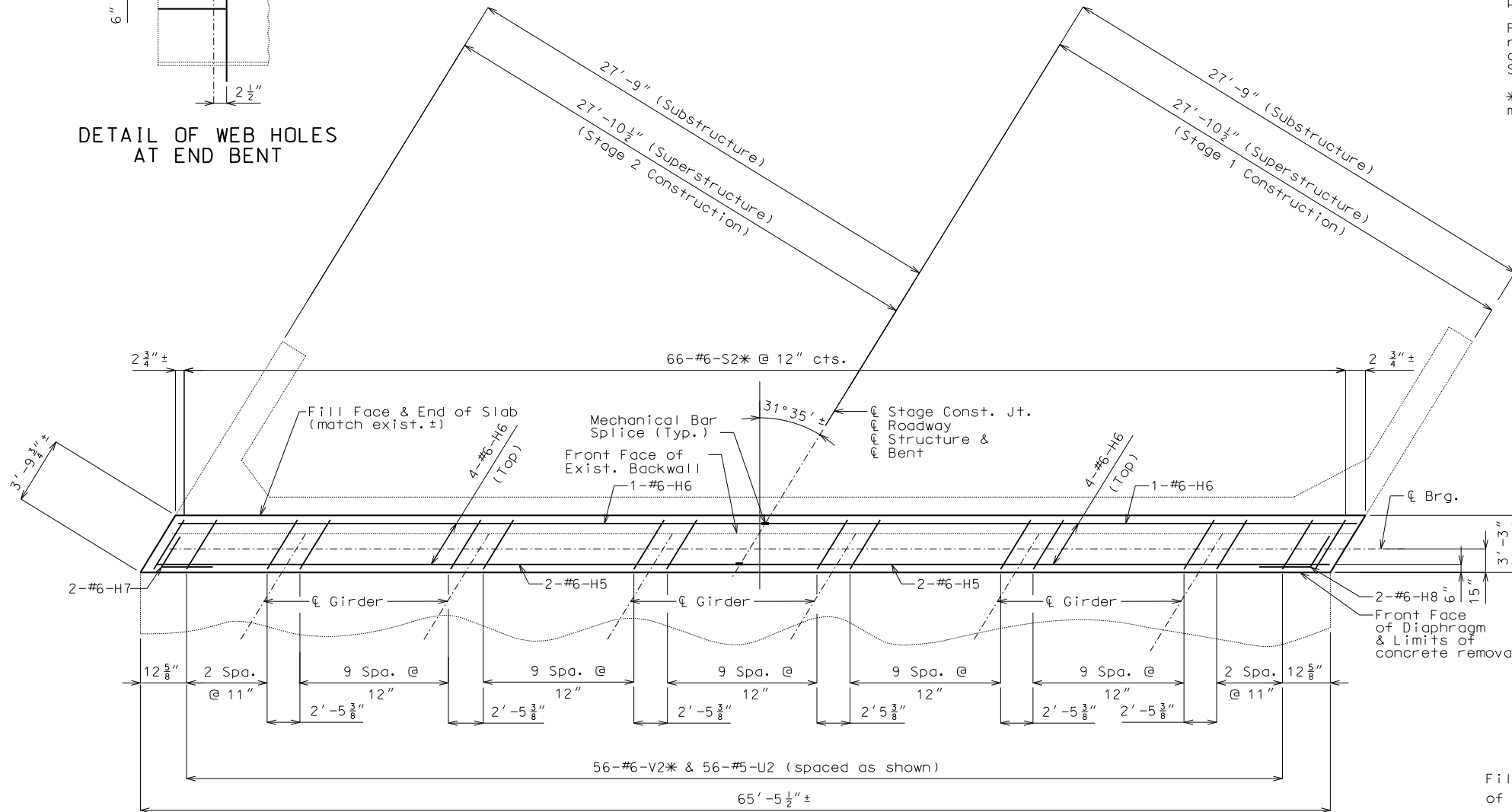
Payment for diaphragm and slab concrete, complete in place, will be considered completely covered by the contract unit price for Class B-1 Concrete.

Payment for furnishing and installing diaphragm and slab reinforcing steel, complete in place, will be considered completely covered by the contract unit price for Reinforcing Steel (Epoxy Coated).

\* Resin anchors drilled into Top of Diaphragm and Backwall. Use manufacturer's recommended embedment length (5" min.).

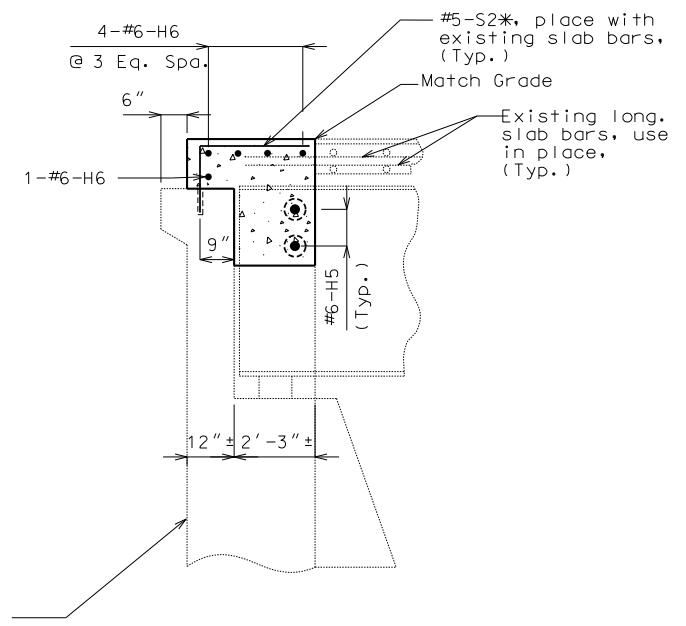


DETAIL OF WEB HOLES AT END BENT



PART PLAN

DETAILS OF END BENT 7



SECTION A-A

DETAILED: APR 2014  
 CHECKED: APR 2014

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

Sheet No. 6 of 7



DATE PREPARED	6-12-2015		
ROUTE	I-435	STATE	MO
DISTRICT	BR	SHEET NO.	6
COUNTY	JACKSON		
JOB NO.	J413028B		
CONTRACT ID.			

PROJECT NO.  
 BRIDGE NO.  
 A16834

DATE	DESCRIPTION

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

Leigh & O'Kane, LLC  
 Structural Engineers  
 MO State Certificate of Authority #001644  
 9201 Ward Parkway, Suite 301  
 Kansas City, MO 64114  
 816-444-3144 P  
 816-444-9655 F  
 www.leok.com







**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION**  
 U.I.P. and Rehabilitate Existing  
 (78'-78')(4'-120'-150'-120'-4')(80'-102'-82'-4') Continuous  
 Composite Plate Girder Spans and (58') Simple Composite Plate  
 Girder Span

SEC/SUR 30 TWP 50N RGE 32W



Professional Engineer  
 Mark Huck  
 PE-22266

DATE PREPARED  
 6-12-2015

ROUTE STATE  
 I-435 MO

DISTRICT SHEET NO.  
 BR 1

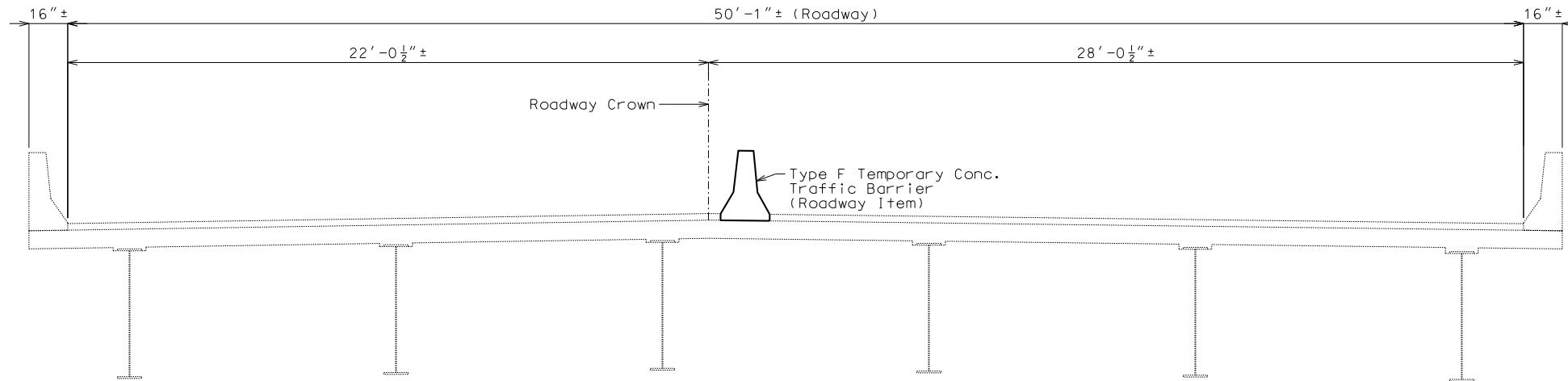
COUNTY  
 JACKSON

JOB NO.  
 J413028B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
 A16856



**TYPICAL SECTION THRU EXISTING SLAB**  
 Note: Temporary barrier shall not be attached to the bridge.

**General Notes:**

**Design Specifications:**

2002 - AASHTO LFD (17th Edition) Standard Specifications  
 Bridge Deck Rating = 7

**Design Loading:**

HS20-44 (1965 and New Construction)  
 15#/S.F. Future Wearing Surface  
 Earth 120#/C.F.  
 Equivalent Fluid Pressure 30#/C.F.  
 Fatigue AWS D2.0-66 Formulae 15b & 16b

**Design Unit Stresses:**

Class B-1 Concrete (Slab & Safety Barrier Curb)  $f'c = 4,000$  psi  
 Reinforcing Steel (Grade 60)  $fy = 60,000$  psi

**Reinforcing Steel:**

Minimum clearance to reinforcing steel shall be  $1\frac{1}{2}$ " unless otherwise shown.

**Expansion Joints:**

The concrete for slab and barrier curb replacement shall be Class B-1.  
 Payment for slab concrete, complete-in-place, for expansion joint replacement will be considered completely covered by the contract unit price for Class B-1 concrete per cu. yard.  
 Payment for furnishing and installing slab reinforcing steel, complete-in-place, for expansion joint replacement will be considered completely covered by the contract unit price for Reinforcing Steel (Epoxy Coated).

**Concrete Protective Coatings:**

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

**Miscellaneous:**

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

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

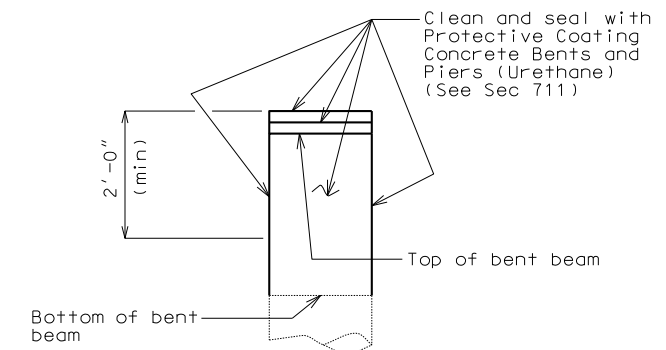
Contractor shall verify all dimensions in field before ordering new material.

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.

**Traffic Handling:**

Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.

The contractor may revise the location of the stage construction joint as shown on the plans with the approval of the Engineer (See Special Provisions).



**PART END ELEVATION OF  
 INT. BENT NO. 3 SHOWING  
 PROTECTIVE COATING**

Estimated Quantities		
Item		Total
Removal of Existing Expansion Joints & Adjacent Concrete	linear foot	54
Remove and Replace Barrier Curb	linear foot	13
Class B-1 Concrete	cu. yard	9.7
Reinforcing Steel (Epoxy Coated)	pound	1370
Protective Coating - Concrete Bents and Piers (Urethane)	lump sum	1
Expansion Device (Finger Plate)	linear foot	54

DETAILED: FEB 2015  
 CHECKED: FEB 2015

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

Sheet No. 1 of 5

**REPAIRS TO BRIDGE: RTE. I-435 NB  
 OVER BIG BLUE RIVER**

STATE ROAD I-435 FROM RTE. 24 TO MISSOURI RIVER  
 IN KANSAS CITY  
 STA. 123+29.48± (MATCH EXISTING)

STD. 617.20  
 STD. 706.35

DATE	DESCRIPTION

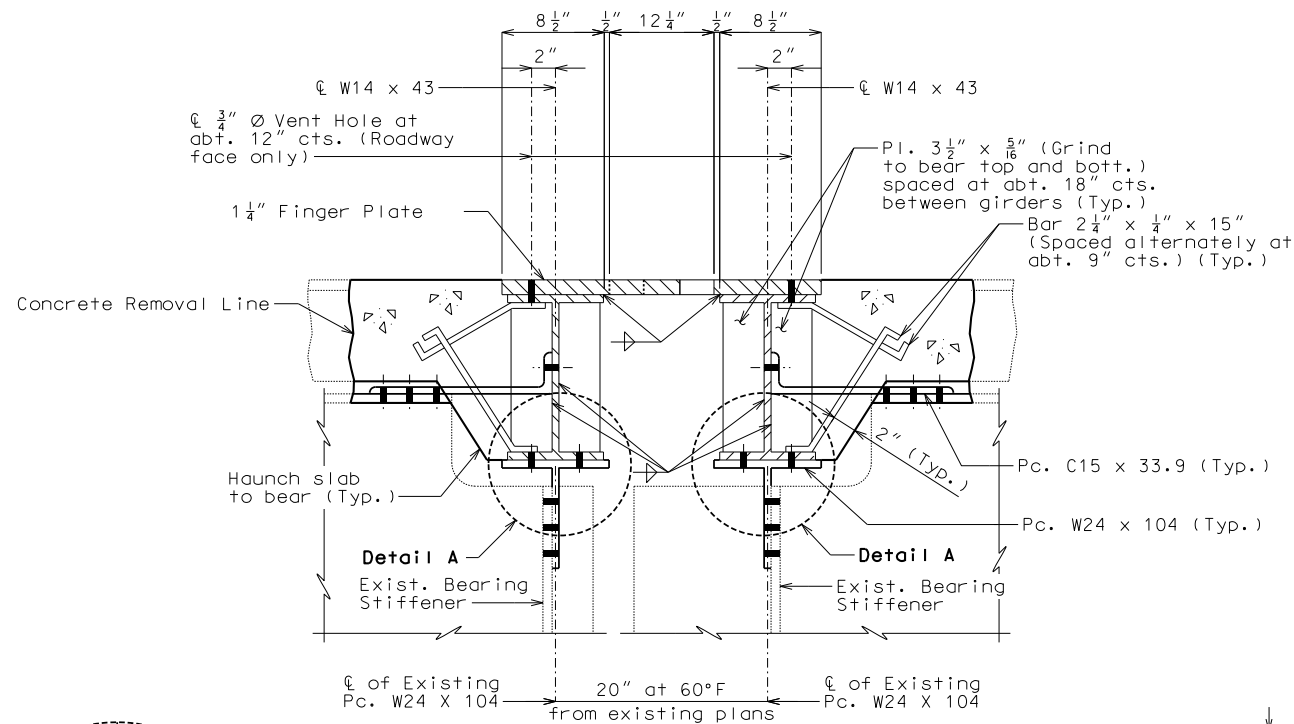
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
  
 105 WEST CAPITOL  
 JEFFERSON CITY, MO 65102  
 1-888-ASK-MODOT (1-888-275-6636)

Burns & McDonnell Engineering Co., Inc.  
 9400 Ward Parkway  
 Kansas City, Missouri 64114  
 816-353-9400  
 Certificate of Authority  
 No. : 000165  
 BMD Project No. 80028

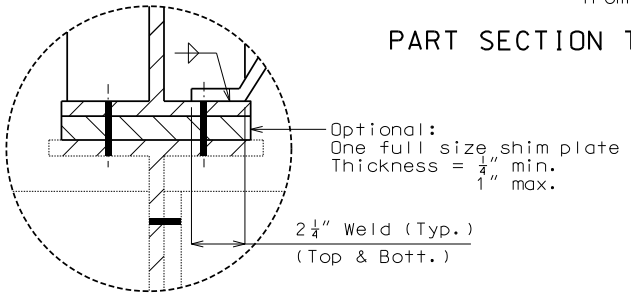






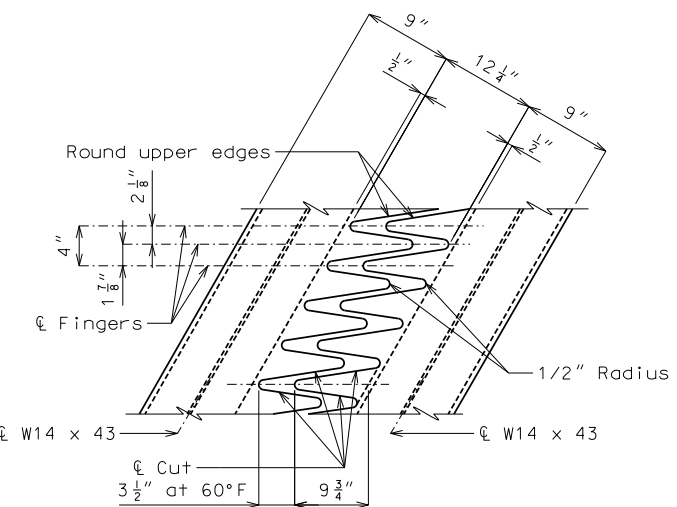


PART SECTION THRU EXPANSION DEVICE

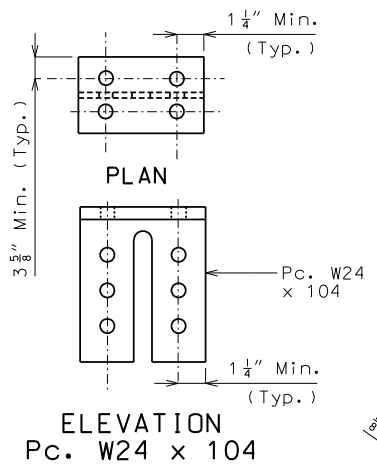


DETAIL A

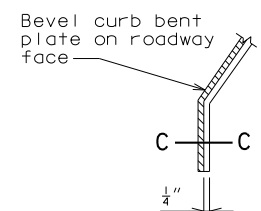
Note: Concrete shall be forced under and around finger plate supporting hardware, anchors, angles and bars. Proper consolidation shall be achieved by localized internal vibration.



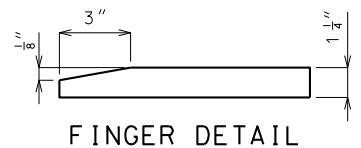
TYPICAL PLAN OF PLATE



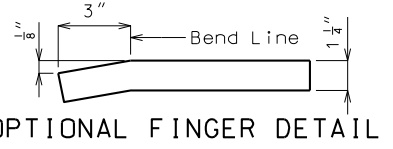
ELEVATION PC. W24 x 104



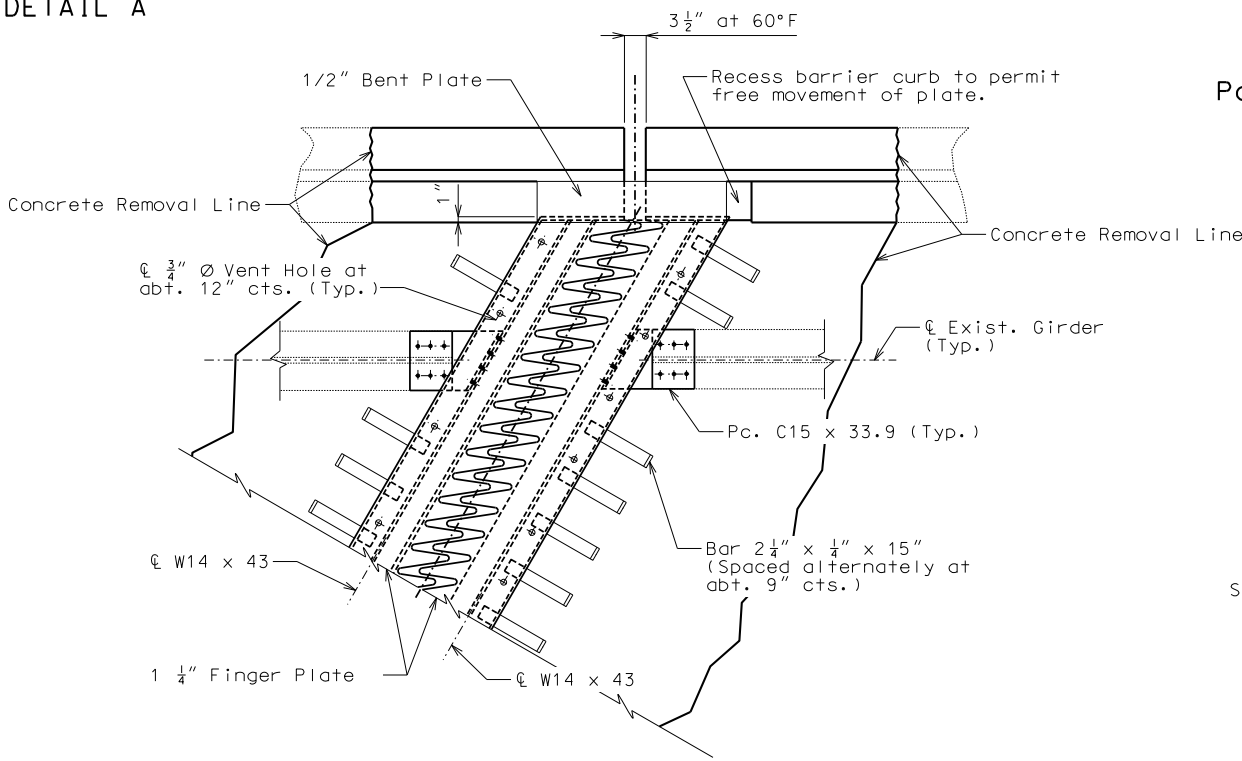
PART ELEVATION AT END OF BEVELED CURB BENT PLATE



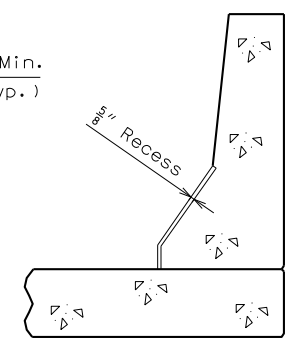
FINGER DETAIL



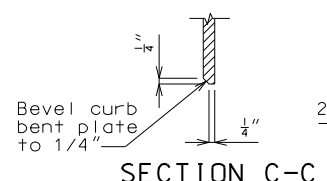
OPTIONAL FINGER DETAIL



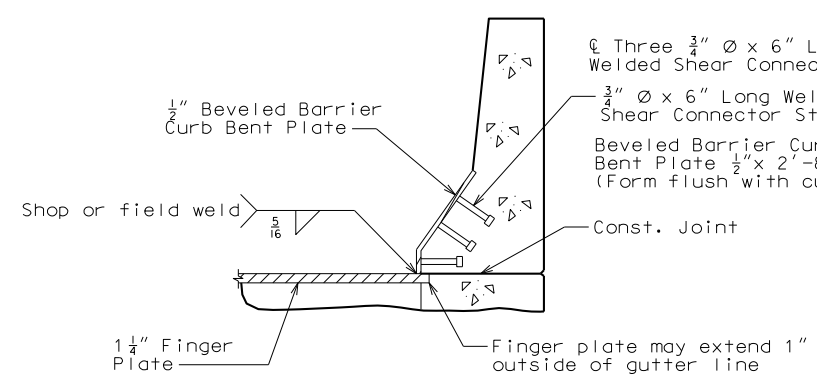
PART PLAN OF EXPANSION DEVICE



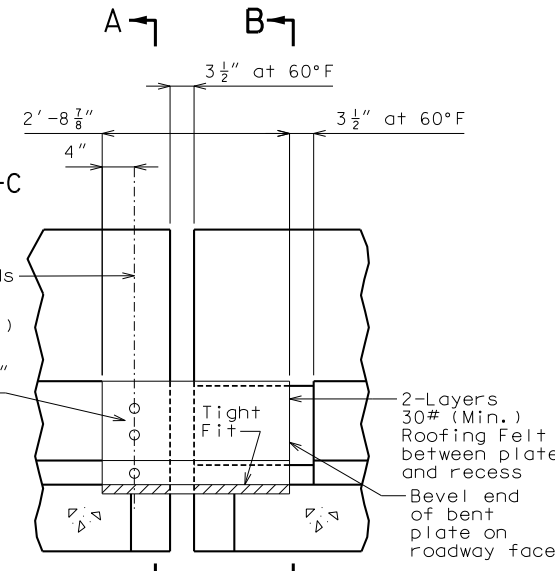
PART SECTION B-B



SECTION C-C



PART SECTION A-A



ELEVATION OF BARRIER CURB

**GENERAL NOTES:**  
 Finger plate shall be cut with a machine guided gas torch from one plate. The plate from which fingers are cut may be spliced before fingers are cut. The surface of cut shall be perpendicular to the surface of the plate. The cut shall not exceed 1/8 inch in width. The centerline of cut shall not deviate more than 1/16 inch from the position of centerline of cut shown. No splicing of finger plate or finger plate assembly will be allowed after fingers are cut. The expansion device shall be fabricated and installed to the crown and grade of the roadway.

Plan dimensions are based on installation at 60°F. The expansion gap and other dimensions shall be increased or decreased 1/4 inch for each 10° fall or rise in temperature at installation.

Material for the expansion device shall be ASTM A709 Grade 36 structural steel. Anchors for the expansion device shall be in accordance with Sec 1037.

Structural steel for the expansion device and curb plate shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum) or galvanized in accordance with ASTM A123. Anchors need not be protected from overspray.

Payment for furnishing, coating or galvanizing and installing the structural steel for the expansion device will be considered completely covered by the contract unit price for Expansion Device (Finger Plate) per lin. ft.

All holes shown for connections to be subpunched 1/16 inch diameter (shop or field drill) and reamed to 1/16 inch diameter in field.

Existing reinforcing steel shall be cut or bent so that ends shall not be more than ±1 inch from the web of W14 x 43 at the expansion device.

Complete joint penetration welds utilized in the fabrication of the expansion device shall be nondestructively tested by an approved method.

DETAILED: FEB 2015  
 CHECKED: FEB 2015

**DETAILS OF FINGER PLATE EXPANSION DEVICE NEAR INT. BENT NO. 3**

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

Sheet No. 4 of 5



Professional Engineer  
 Mark Huck  
 PE-22266

DATE PREPARED  
 6-12-2015

ROUTE I-435 STATE MO  
 DISTRICT BR SHEET NO. 4

COUNTY JACKSON  
 JOB NO. J413028B  
 CONTRACT ID.

PROJECT NO.

BRIDGE NO. A16856

DATE	DESCRIPTION

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

Burns & McDonnell Engineering Co., Inc.  
 9400 Ward Parkway  
 Kansas City, Missouri 64114  
 816-353-9400  
 Certificate of Authority  
 No. : 000165  
 BM&D Project No. 80028













Professional Engineer  
 MARK HUCK  
 PE-22266

DATE PREPARED  
 6-12-2015

ROUTE I-435 STATE MO  
 DISTRICT BR SHEET NO. 3

COUNTY JACKSON  
 JOB NO. J413028B  
 CONTRACT ID.

PROJECT NO.  
 BRIDGE NO. A16866

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

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

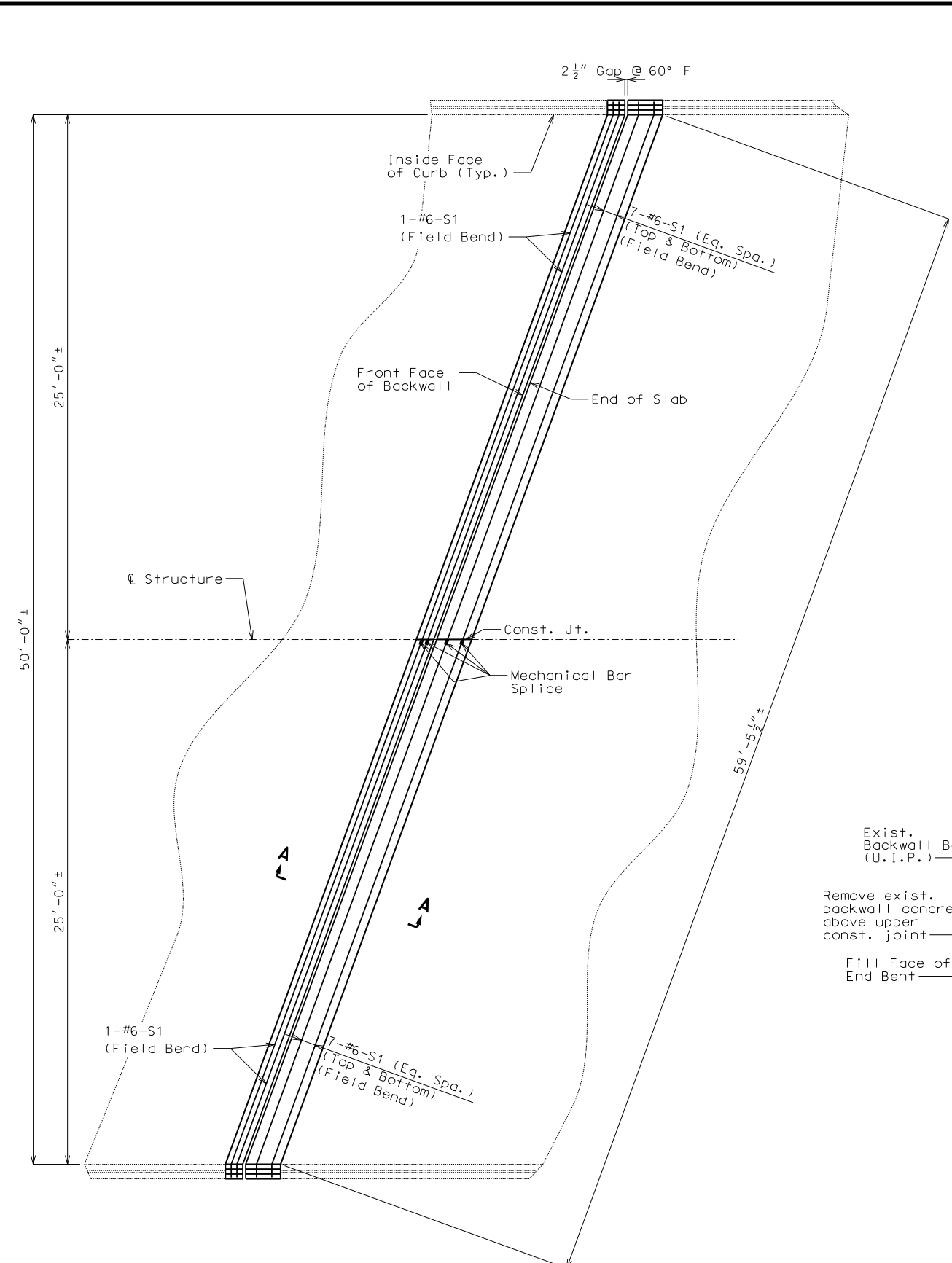
Burns & McDonnell Engineering Co., Inc.

9400 Ward Parkway  
 Kansas City, Missouri 64114  
 816-353-9400

Certificate of Authority  
 No. : 000165  
 BMD Project No. 80028

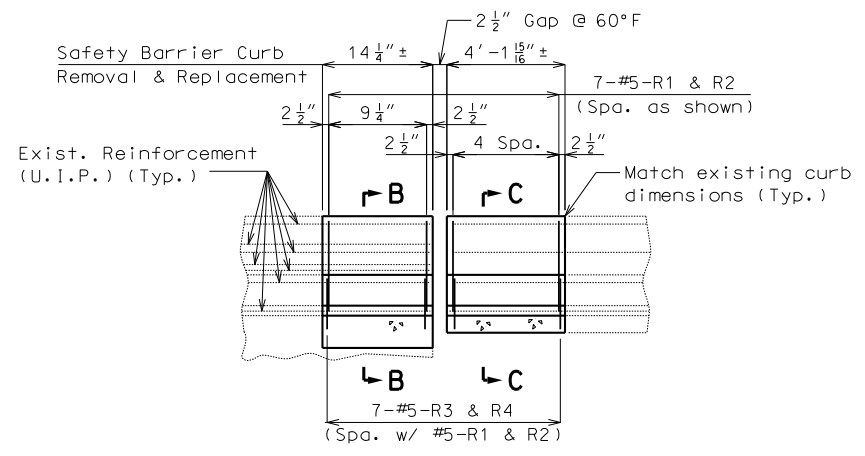


11:18:11 AM 6/3/2015



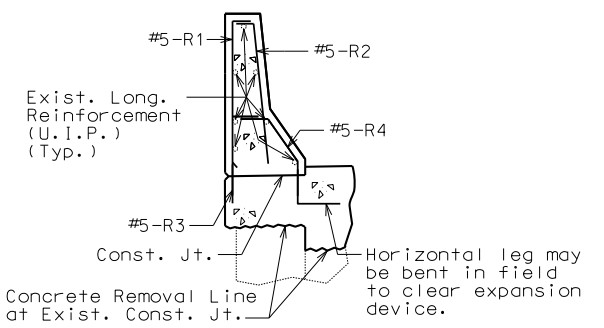
PART PLAN OF SLAB AT END BENT NO. 1

Note: Expansion device not shown for clarity.

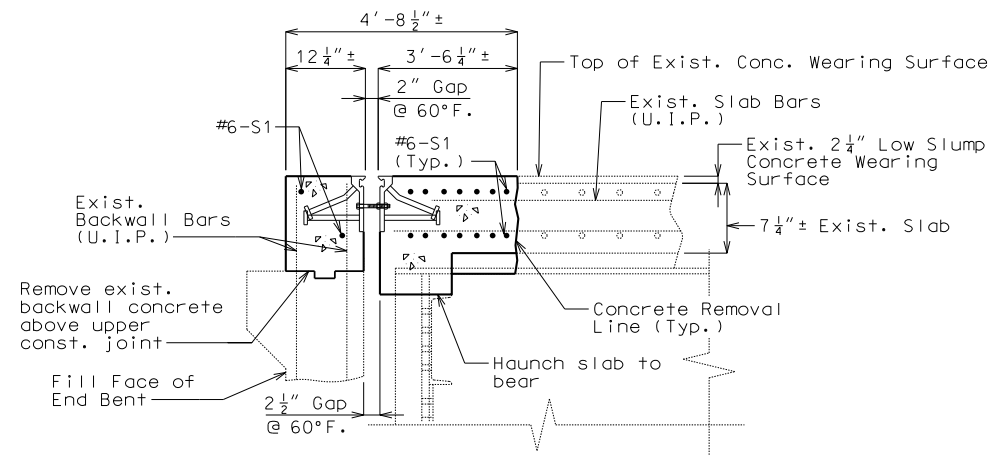


PART ELEVATION SHOWING LEFT BARRIER CURB REINFORCEMENT AT END BENT NO. 1

Note: Expansion device not shown for clarity.



SECTION B-B \*



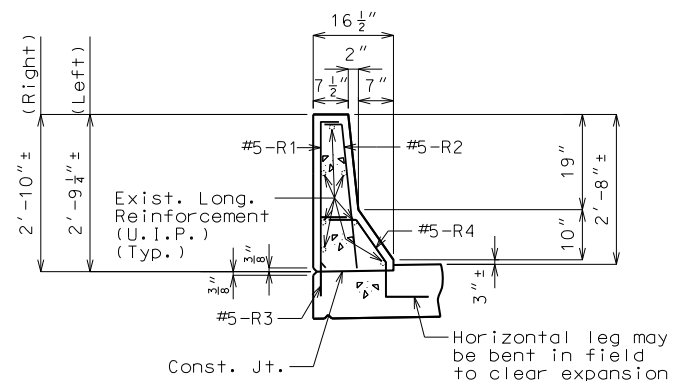
SECTION A-A

Notes:  
 Shift S-bars where necessary to clear the expansion device.

Payment for curb concrete removal and all concrete and reinforcement for safety barrier curb, complete-in-place, will be considered completely covered by the contract unit price for Remove and Replace Barrier Curb per linear foot.

The contractor shall use a mechanical bar splice for S-bars at the specified location. The total bar lengths for bars indicated in the bill of reinforcing steel are determined based on the end of the bars being located flush to the face of the construction joint. No additional payment will be made for any additional bar lengths required for the mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 except that no measurement will be made for mechanical bar splice and will be considered completely covered by the contract unit price for the Reinforcing Steel (Epoxy Steel).

\* Field verify dimensions of existing barrier curb and form replacement curb to match.



SECTION C-C \*

DETAILS OF SLAB AND BARRIER CURB AT JOINT 1 NEAR BENT 1

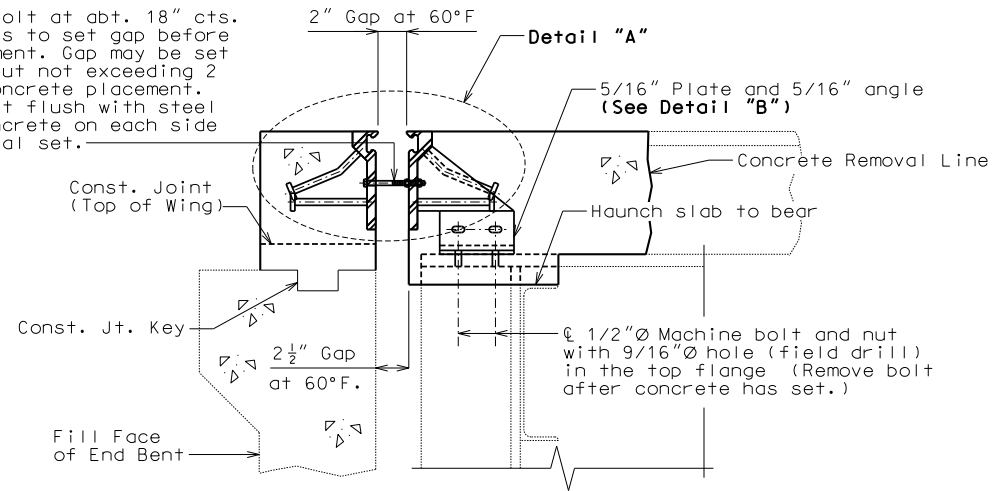
DETAILED: APR 2015  
 CHECKED: APR 2015

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

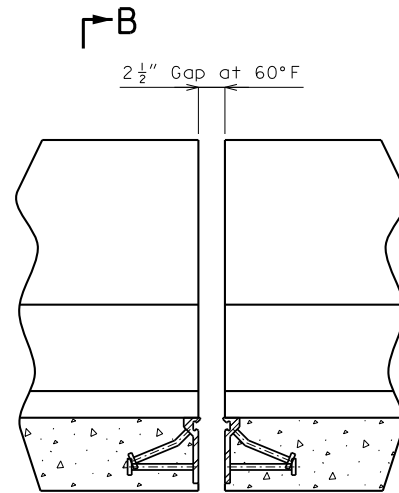
Sheet No. 3 of 7

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

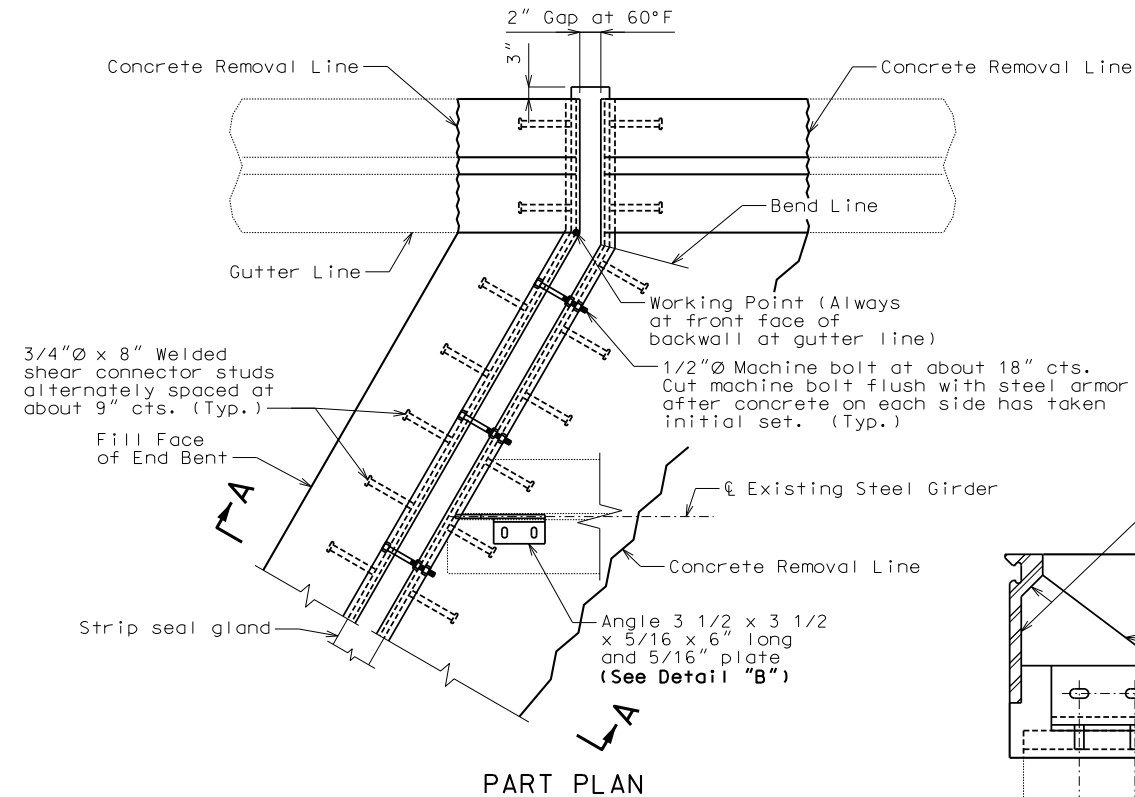
1/2"Ø Machine bolt at abt. 18" cts. Use two hex nuts to set gap before concrete placement. Gap may be set anytime up to but not exceeding 2 hours before concrete placement. Cut machine bolt flush with steel armor after concrete on each side has taken initial set.



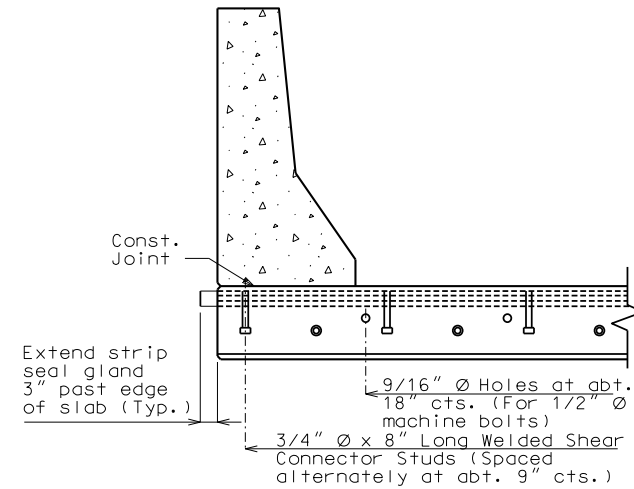
**SECTION A-A**  
Note: Strip seal gland not shown for clarity.



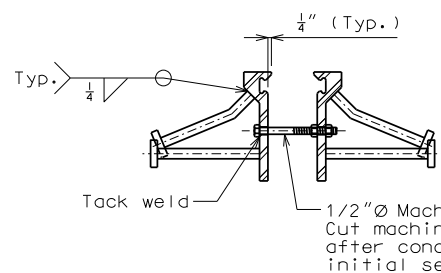
Note: Strip seal gland not shown for clarity.  
**PART ELEVATION OF BARRIER CURB**



**PART PLAN**



**PART SECTION B-B**

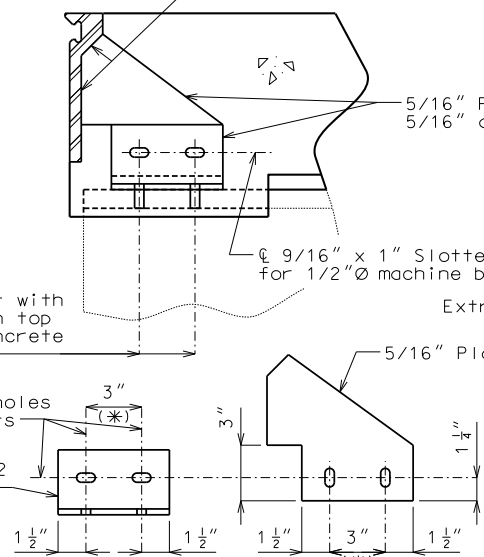


**DETAIL "A"**

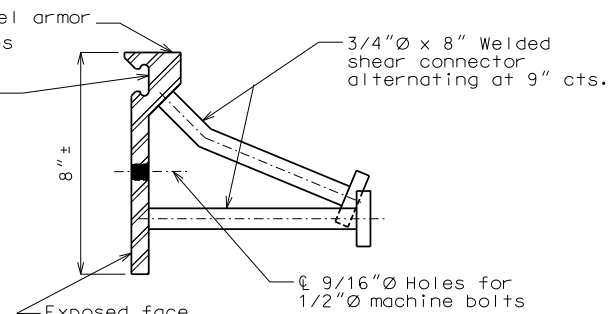
1/2"Ø Machine bolts and nut with 9/16"Ø holes (field drill) in top flange (Remove bolt after concrete has set.)

9/16" x 1" Slotted holes for 1/2"Ø machine bolts

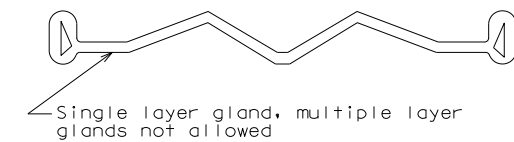
Angle 3 1/2 x 3 1/2 x 5/16 x 6" long



**DETAIL "B"**



**DETAIL OF JOINT ARMOR**



Strip seal gland size = 5"

**DETAIL OF GLAND**

**GENERAL NOTES:**

Expansion joint system shall be fabricated in one section, except for stage construction and when the length is over 50 feet. A complete joint penetration groove welded splice shall be required. Welds shall be ground flush to provide a smooth surface. The expansion joint system shall be fabricated and installed to the crown and grade of the roadway.

The strip seal gland shall be installed in joints in one continuous piece without field splices. Factory splicing will be permitted for joints in excess of 53 feet.

Structural steel for the expansion joint system shall be ASTM A709 Grade 36 except the steel armor may be ASTM A709 Grade 50W. Anchors for the expansion joint system shall be in accordance with Sec 1037. Strip seal expansion joint system shall be in accordance with Sec 717.

Structural steel for the expansion joint system shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum) or galvanized in accordance with ASTM A123. Anchors need not be protected from overspray.

Plan dimensions are based on installation at 60°F. The expansion gap and other dimensions shall be increased or decreased 1/16" for each 10° fall or rise in temperature at installation.

Existing reinforcing steel shall be cut or bent so that ends shall not be more than ±1" from vertical leg of the steel armor at the expansion joint system.

Concrete shall be forced under and around steel armor and anchors. Proper consolidation of the concrete shall be achieved by localized internal vibration.

(\* Match Existing.)



Professional Engineer  
MARK HUCK  
PE-22266

DATE PREPARED  
6-12-2015

ROUTE I-435 STATE MO

DISTRICT BR SHEET NO. 4

COUNTY JACKSON

JOB NO. J413028B

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A16866

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

Burns & McDonnell Engineering Co., Inc.

9400 Ward Parkway  
Kansas City, Missouri 64114  
816-353-9400

Certificate of Authority  
No. : 000165  
BMD Project No. 80028

DETAILED: APR 2015  
CHECKED: APR 2015

**DETAILS OF STRIP SEAL AT END BENT NO. 1**

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

Sheet No. 4 of 7



Professional Engineer  
Mark Huck  
PE-22266

DATE PREPARED  
6-12-2015

ROUTE I-435 STATE MO

DISTRICT BR SHEET NO. 5

COUNTY JACKSON

J413028B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A16866

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

MoDOT

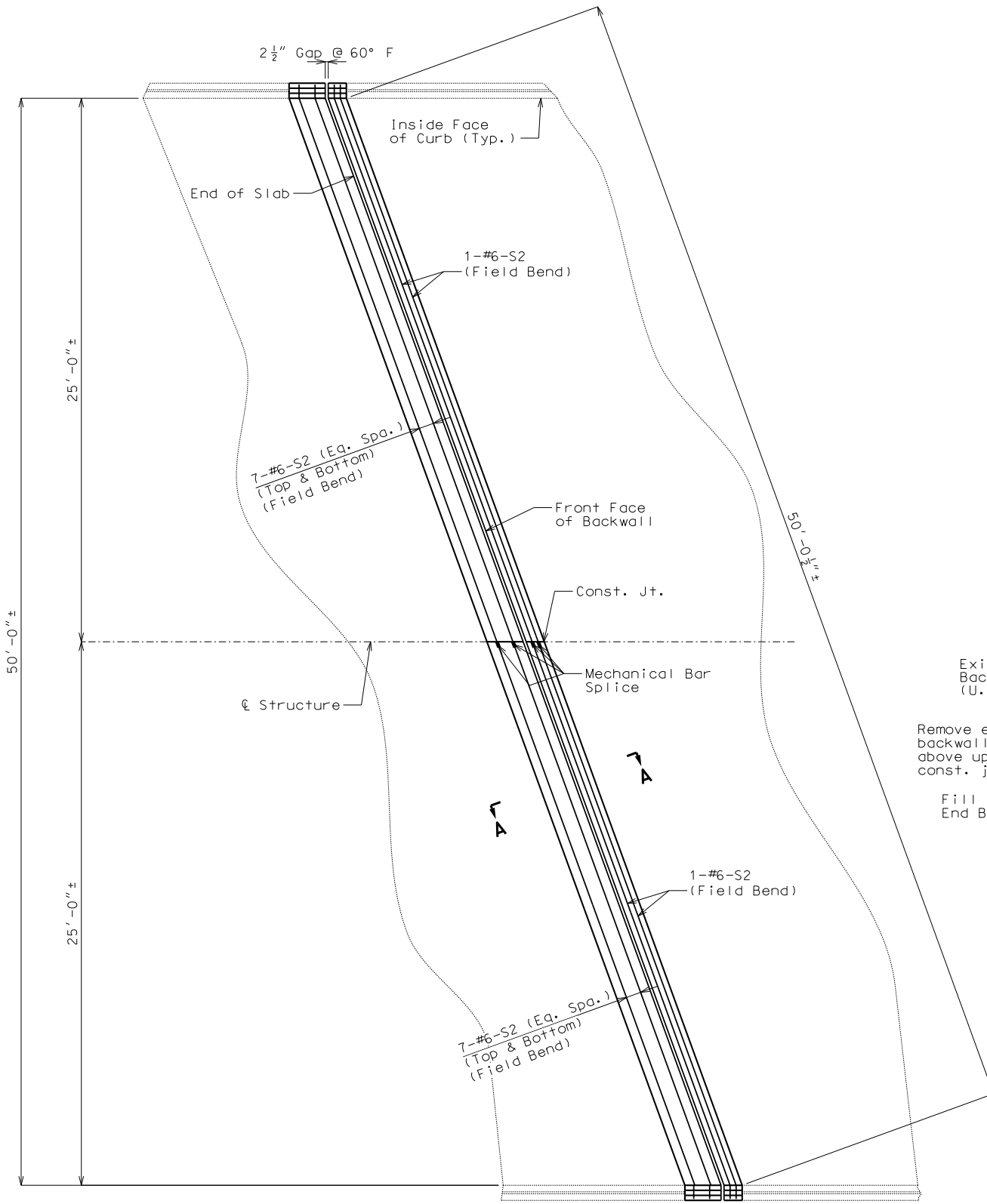
Certificate of Authority  
No. : 000165  
BMD Project No. 80028

Burns & McDonnell  
SINCE 1898

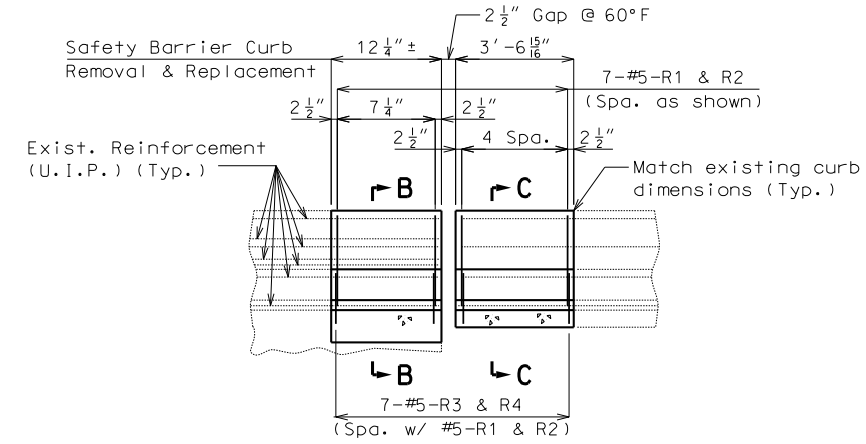
9400 Ward Parkway  
Kansas City, Missouri 64114  
816-353-9400

REV.

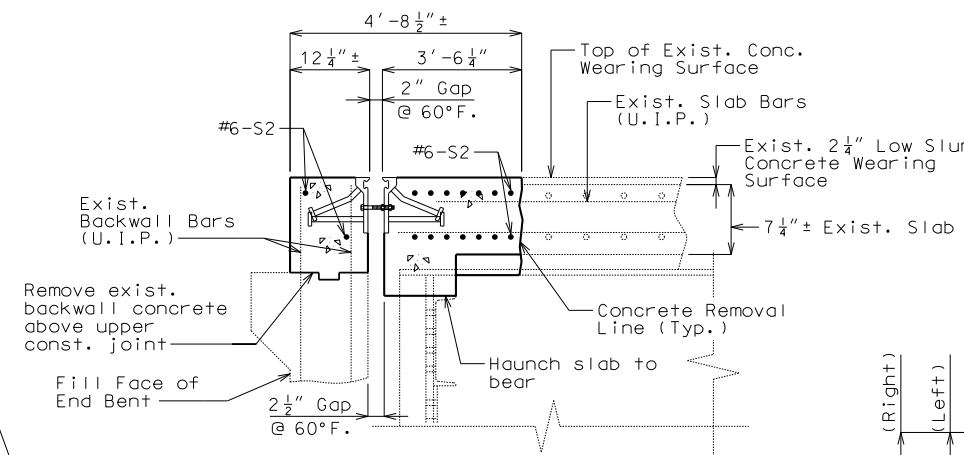
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



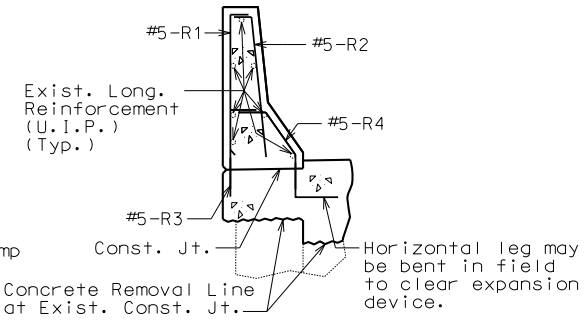
**PART PLAN OF SLAB AT END BENT NO. 10**  
Note: Expansion device not shown for clarity.



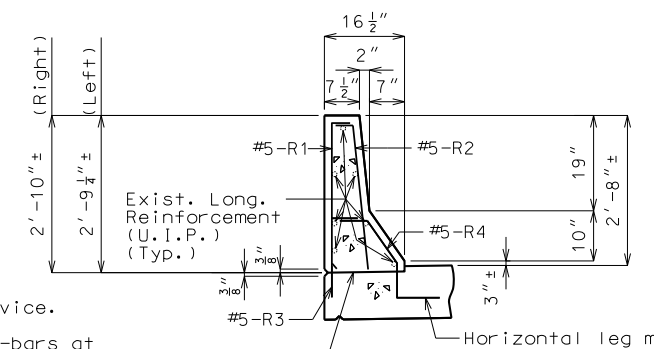
**PART ELEVATION SHOWING RIGHT BARRIER CURB REINFORCEMENT AT END BENT NO. 10**  
Note: Expansion device not shown for clarity.



**SECTION A-A**



**SECTION B-B \***



**SECTION C-C \***

Notes:  
Shift S-bars where necessary to clear the expansion device.  
The contractor shall use a mechanical bar splice for S-bars at the specified location. The total bar lengths for bars indicated in the bill of reinforcing steel are determined based on the end of the bars being located flush to the face of the construction joint. No additional payment will be made for any additional bar lengths required for the mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 except that no measurement will be made for mechanical bar splice and will be considered completely covered by the contract unit price for the reinforcing steel.

Payment for curb concrete removal and all concrete and reinforcement for safety barrier curb, complete-in-place, will be considered completely covered by the contract unit price for Remove and Replace Barrier Curb per linear foot.

\* Field verify dimensions of existing barrier curb and form replacement barrier curb to match.

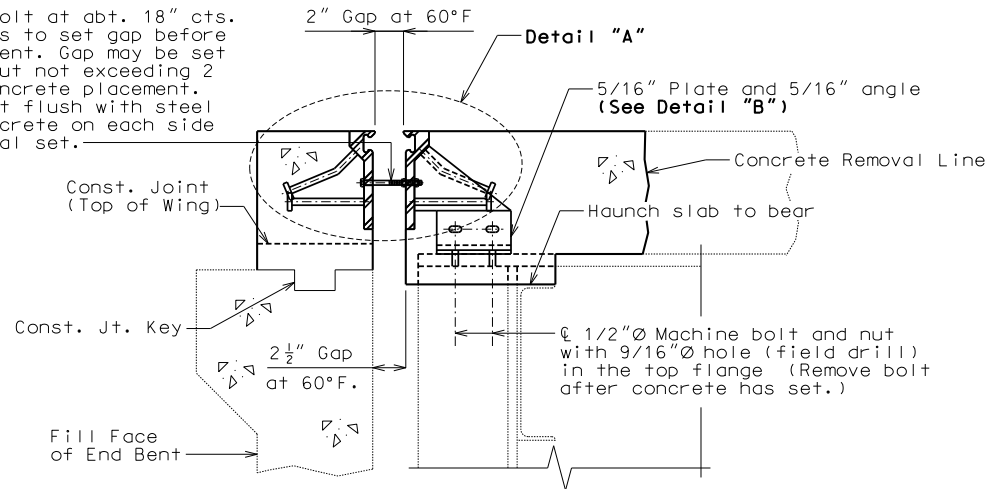
**DETAILS OF SLAB AND BARRIER CURB AT JOINT 3 NEAR END BENT 10**

DETAILED: APR 2015  
CHECKED: APR 2015

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

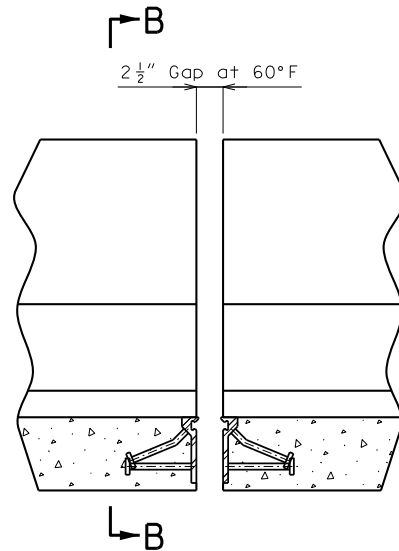
Sheet No. 5 of 7

1/2" Machine bolt at abt. 18" cts. Use two hex nuts to set gap before concrete placement. Gap may be set anytime up to but not exceeding 2 hours before concrete placement. Cut machine bolt flush with steel armor after concrete on each side has taken initial set.



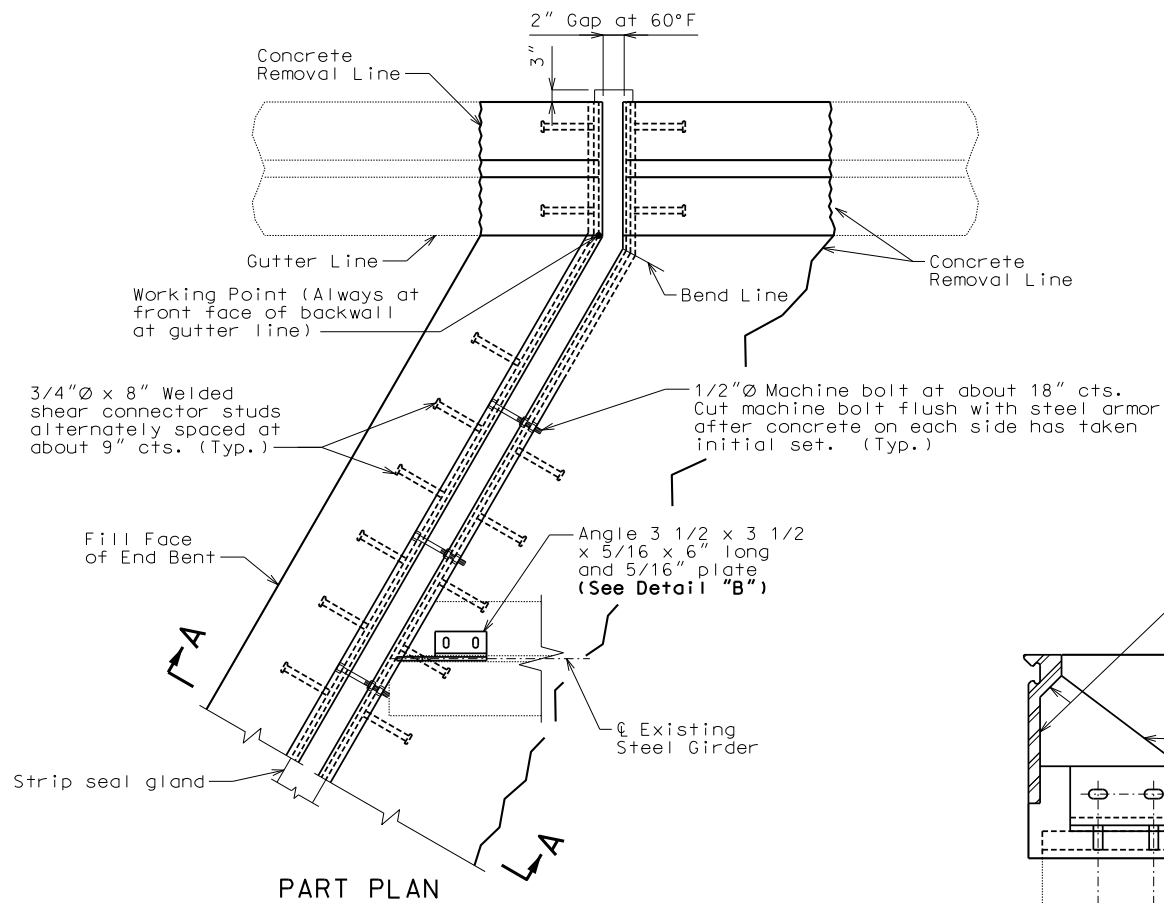
SECTION A-A

Note: Strip seal gland not shown for clarity.

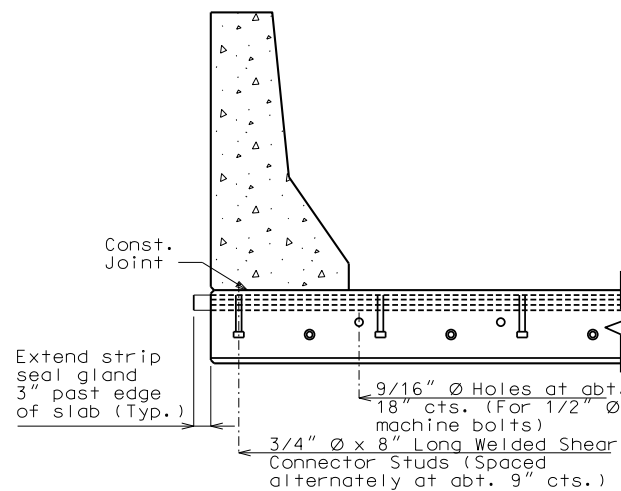


Part Elevation of Barrier Curb

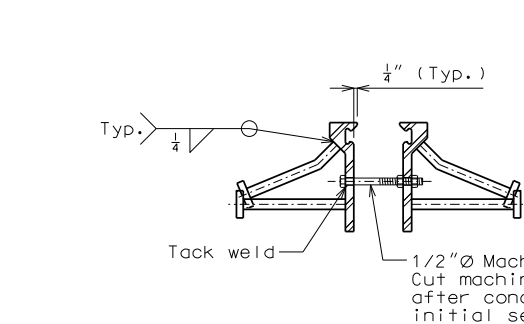
Note: Strip seal gland not shown for clarity.



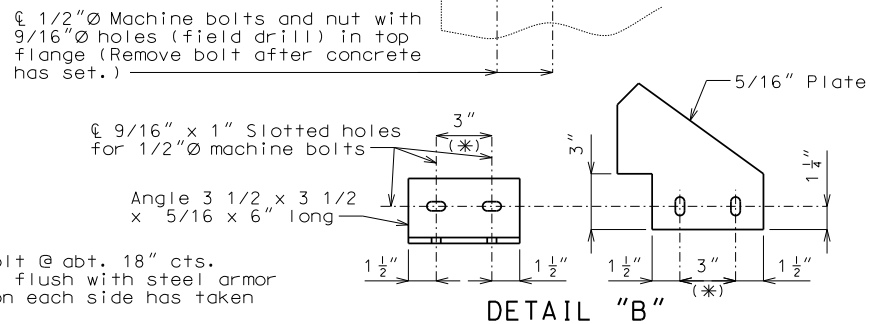
PART PLAN



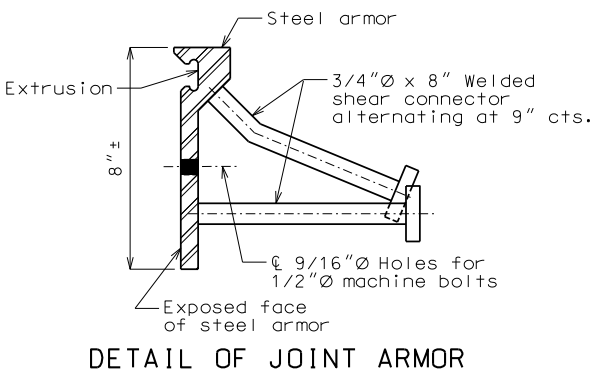
PART SECTION B-B



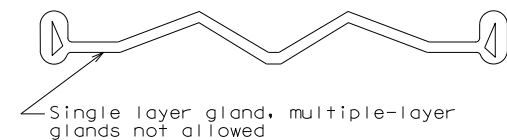
DETAIL "A"



DETAIL "B"



DETAIL OF JOINT ARMOR



DETAIL OF GLAND

GENERAL NOTES:

Expansion joint system shall be fabricated in one section, except for stage construction and when the length is over 50 feet. A complete joint penetration groove welded splice shall be required. Welds shall be ground flush to provide a smooth surface. The expansion joint system shall be fabricated and installed to the crown and grade of the roadway.

The strip seal gland shall be installed in joints in one continuous piece without field splices. Factory splicing will be permitted for joints in excess of 53 feet.

Structural steel for the expansion joint system shall be ASTM A709 Grade 36 except the steel armor may be ASTM A709 Grade 50W. Anchors for the expansion joint system shall be in accordance with Sec 1037. Strip seal expansion joint system shall be in accordance with Sec 717.

Structural steel for the expansion joint system shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum) or galvanized in accordance with ASTM A123. Anchors need not be protected from overspray.

Plan dimensions are based on installation at 60°F. The expansion gap and other dimensions shall be increased or decreased 1/16" for each 10° fall or rise in temperature at installation.

Existing reinforcing steel shall be cut or bent so that ends shall not be more than ±1" from vertical leg of the steel armor at the expansion joint system.

Concrete shall be forced under and around steel armor and anchors. Proper consolidation of the concrete shall be achieved by localized internal vibration.

(\* Match Existing).



Professional Engineer  
MARK HUCK  
No. PE-22266

DATE PREPARED  
6-12-2015

ROUTE STATE  
I-435 MO

DISTRICT SHEET NO.  
BR 6

COUNTY  
JACKSON

JOB NO.  
J413028B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A16866

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

9400 Ward Parkway  
Kansas City, Missouri 64114  
816-353-9400

Certificate of Authority  
No. : 000165

BMD Project No. 80028

REV.

DETAILED: APR 2015  
CHECKED: APR 2015

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

Sheet No. 6 of 7

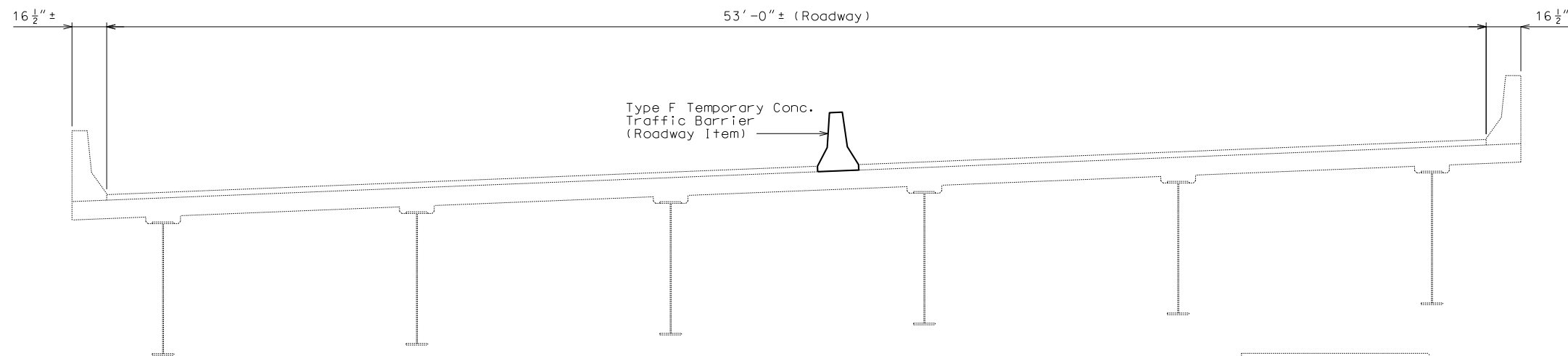
DETAILS OF STRIP SEAL AT END BENT NO. 10



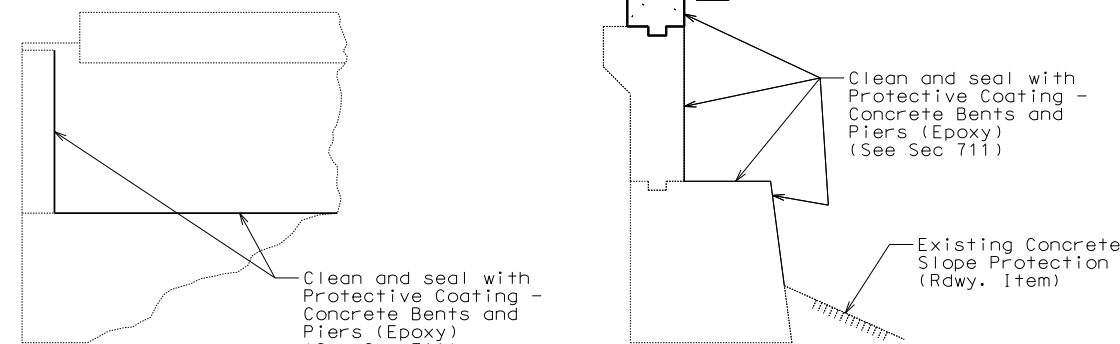
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

SEC/SUR 30 TWP 50N RGE 32W

U.I.P. and Rehabilitate (75'-113'-105'-118'-77') Continuous Composite Plate Girder Spans



TYPICAL SECTION THRU EXISTING SLAB  
Note: Temporary barrier shall not be attached to the bridge.



TYPICAL SECTION THRU END BENTS NO. 1 & 6 SHOWING PROTECTIVE COATING

General Notes:

- Design Specifications:**  
2002 - AASHTO LFD (17th Edition) Standard Specifications  
Bridge Deck Rating = 5
- Design Loading:**  
HS20-44 Military (1965 and New Construction)  
15#/S.F. Future Wearing Surface  
Earth 120#/C.F.  
Equivalent Fluid Pressure 30#/C.F.  
Fatigue AWS D2.0-66 Formulae 15b & 16b
- Design Unit Stresses:**  
Class B-1 Concrete (Slab, Backwall and Safety Barrier Curb)  $f'c = 4,000$  psi  
Reinforcing Steel (Grade 60)  $f_y = 60,000$  psi
- Reinforcing Steel:**  
Minimum clearance to reinforcing steel shall be  $1\frac{1}{2}$ " unless otherwise shown.
- Concrete Protective Coatings:**  
Protective coating for concrete bents and piers (Epoxy) shall be applied as shown on the bridge plans and in accordance with Sec 711.
- Expansion Joints:**  
The concrete for slab, backwall and barrier curb replacement shall be Class B-1.  
Payment for backwall and slab concrete, complete-in-place, for expansion joint replacement will be considered completely covered by the contract unit price for Class B-1 concrete per cu. yard.  
Payment for furnishing and installing slab reinforcing steel and backwall reinforcing steel, complete-in-place, for expansion joint replacement will be considered completely covered by the contract unit price for Reinforcing Steel (Epoxy Coated).

General Notes (Cont.):

- Miscellaneous:**  
Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.  
Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.  
Contractor shall verify all dimensions in field before ordering new material.  
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.
- Traffic Handling:**  
Traffic over structure to be maintained during construction. See Roadway Plans for traffic control.  
The contractor may revise the location of the stage construction joint as shown on the plans with the approval of the Engineer (see Special Provisions).

Estimated Quantities		
Item		Total
Removal of Existing Expansion Joints & Adjacent Concrete	linear foot	117
Remove and Replace Barrier Curb	linear foot	17
Class B-1 Concrete	cu. yard	17.1
Reinforcing Steel (Epoxy Coated)	pound	2440
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Strip Seal Expansion Joint System	linear foot	117

REPAIRS TO BRIDGE: I-435 NB OVER CANADIAN PACIFIC RAILROAD

STATE ROAD I-435 FROM RTE. 24 TO MISSOURI RIVER  
IN KANSAS CITY  
STA. 92+13.39± (MATCH EXISTING)

STD. 617.20  
STD. 706.35



Professional Engineer  
Mark Huck  
PE-22266

DATE PREPARED  
6-12-2015

ROUTE STATE  
I-435 MO

DISTRICT SHEET NO.  
BR 1

COUNTY  
JACKSON

JOB NO.  
J413028B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A22494

DATE	DESCRIPTION

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

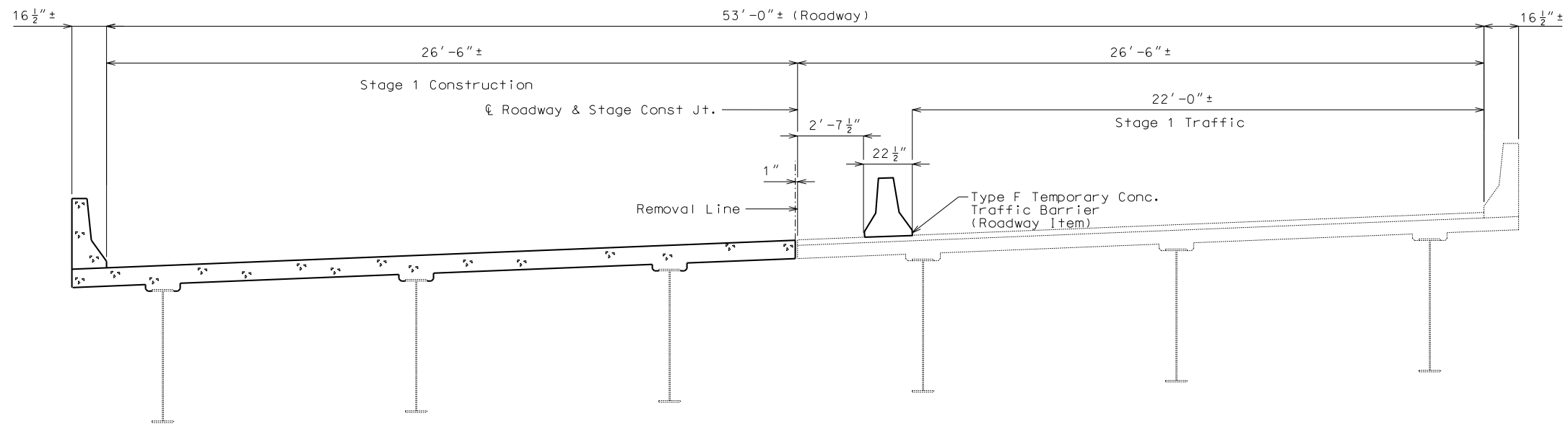
Burns & McDonnell Engineering Co., Inc.  
9400 Ward Parkway  
Kansas City, Missouri 64114  
816-353-9400  
Certification of Authority  
No. : 000165  
BMD Project No. 80028

DETAILED: APR 2014  
CHECKED: APR 2014

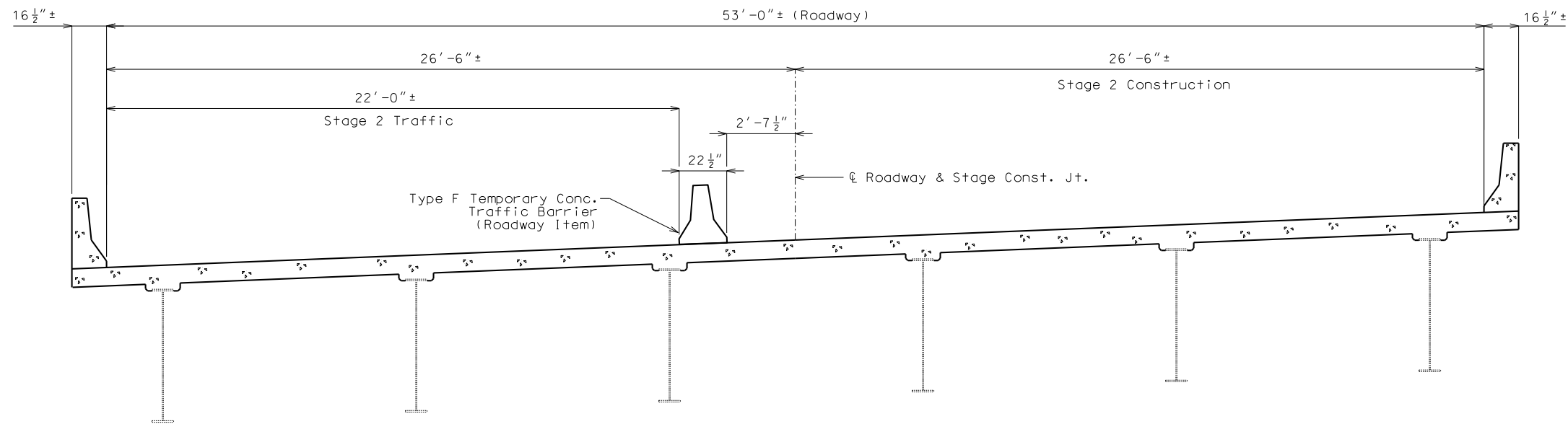
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 6

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



**STAGE 1 CONSTRUCTION**  
(Looking Upstation)



**STAGE 2 CONSTRUCTION**  
(Looking Upstation)

**DETAILS OF STAGE CONSTRUCTION FOR JOINT REPLACEMENT**

Notes:  
Temporary Barrier shall not be attached to Bridge.

DETAILED: APR 2014  
CHECKED: APR 2014

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

Sheet No. 2 of 6



Professional Engineer  
Mark Huck  
PE-22266

DATE PREPARED  
6-12-2015

ROUTE STATE  
I-435 MO

DISTRICT SHEET NO.  
BR 2

COUNTY  
JACKSON

JOB NO.  
J413028B

CONTRACT ID.

PROJECT NO.

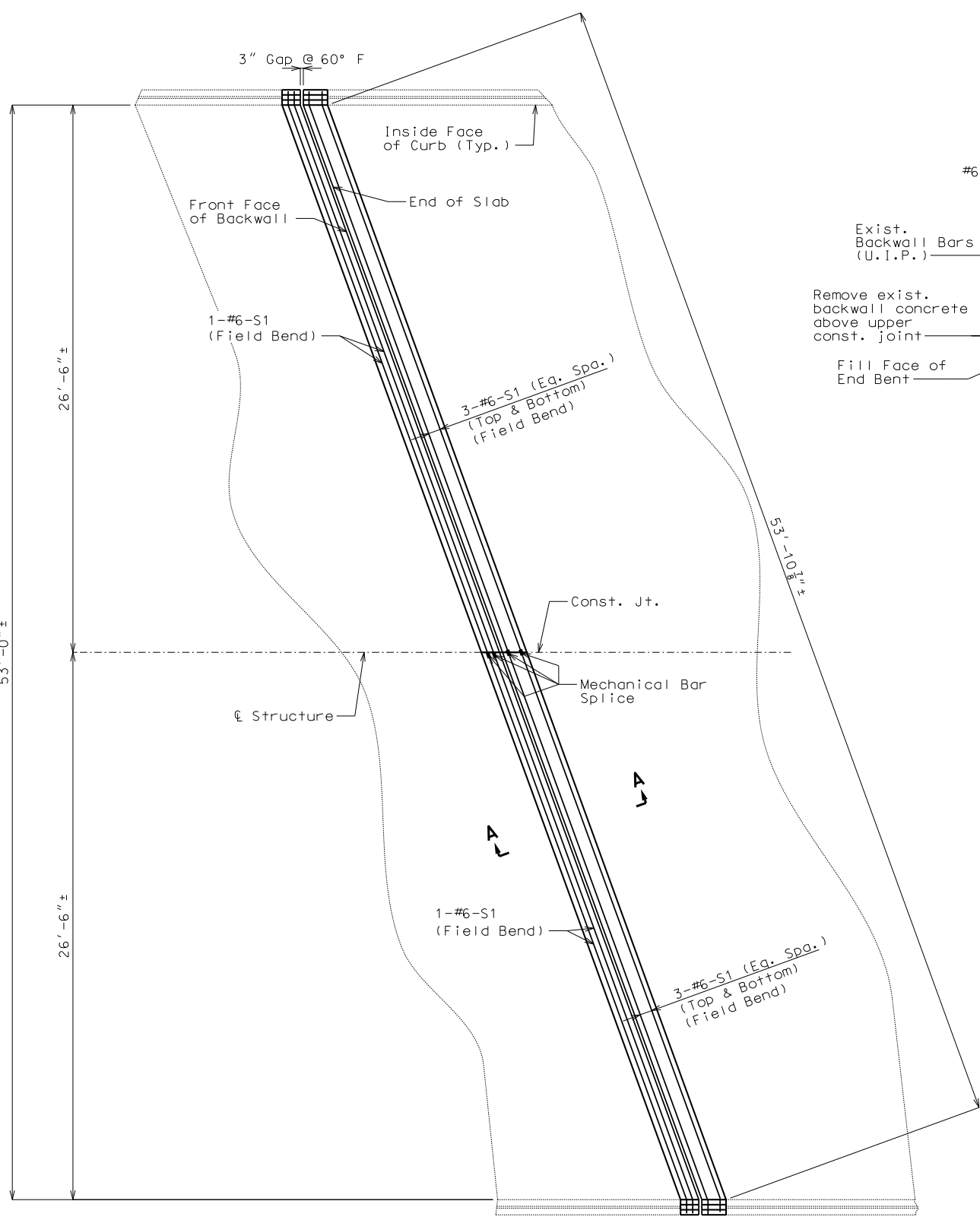
BRIDGE NO.  
A22494

DATE	DESCRIPTION

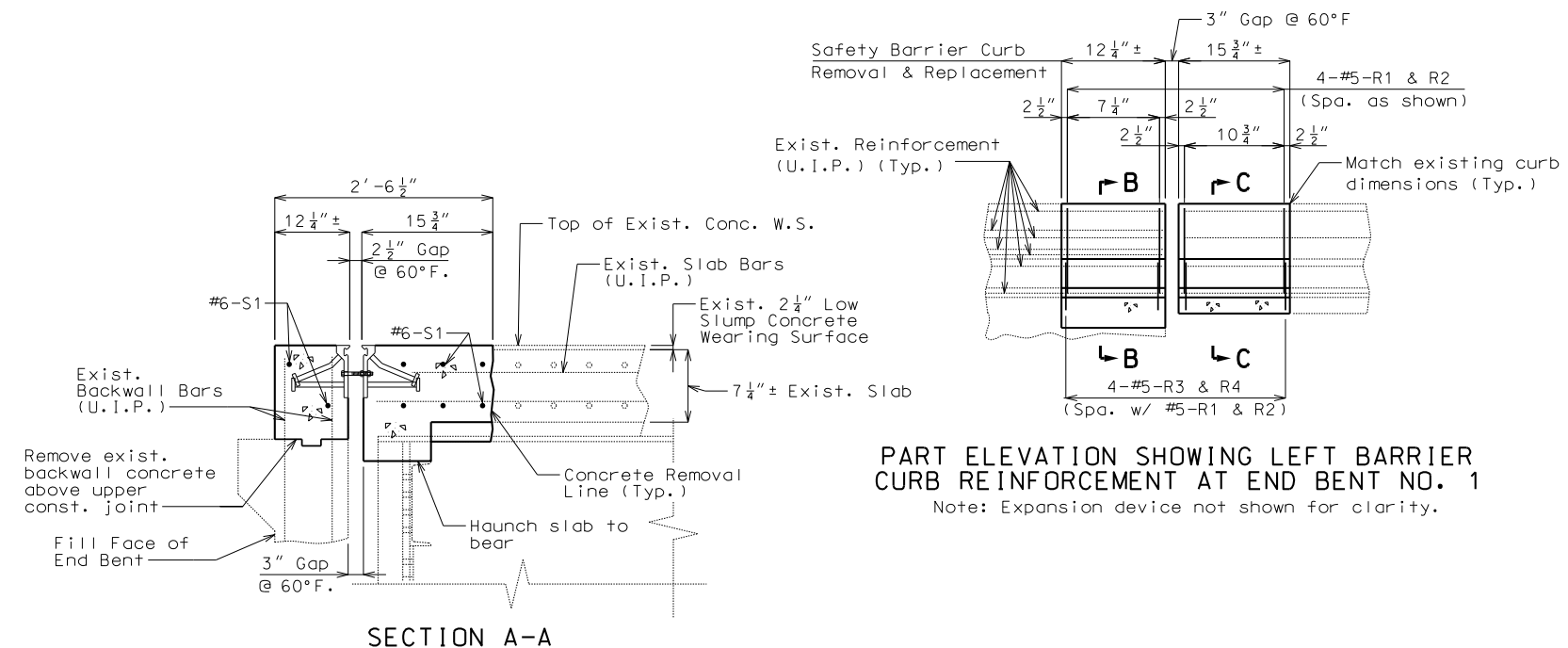
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-273-6636)

Burns & McDonnell Engineering Co., Inc.  
9400 Ward Parkway  
Kansas City, Missouri 64114  
816-353-9400  
Certificate of Authority  
No. : 000165  
BMD Project No. 80028



PART PLAN OF SLAB AT END BENT NO. 1  
Note: Expansion device not shown for clarity.



PART ELEVATION SHOWING LEFT BARRIER CURB REINFORCEMENT AT END BENT NO. 1  
Note: Expansion device not shown for clarity.

Notes:  
Shift S-bars where necessary to clear the expansion device.  
Concrete in the safety barrier curb and slab shall be Class B-1.  
The contractor shall use a mechanical bar splice for S-bars at the specified location. The total bar lengths for bars indicated in the bill of reinforcing steel are determined based on the end of the bars being located flush to the face of the construction joint. No additional payment will be made for any additional bar lengths required for the mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 except that no measurement will be made for mechanical bar splice and will be considered completely covered by the contract unit price for the Reinforcing Steel (Epoxy Coated).  
Payment for curb concrete removal and all concrete and reinforcement for safety barrier curb, complete-in-place, will be considered completely covered by the contract unit price for Remove and Replace Barrier Curb per linear foot.

\* Field verify dimensions of existing barrier curb and form replacement barrier curb to match.

DETAILS OF SLAB BARRIER CURB AT JOINT 1 NEAR END BENT 1

DETAILED: APR 2014  
CHECKED: APR 2014

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

Sheet No. 3 of 6



Professional Engineer  
Mark Huck  
PE-22266  
DATE PREPARED  
6-12-2015  
ROUTE I-435 STATE MO  
DISTRICT BR SHEET NO. 3  
COUNTY JACKSON  
JOB NO. J413028B  
CONTRACT ID.

PROJECT NO.  
BRIDGE NO. A22494

DATE	DESCRIPTION

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

Burns & McDonnell Engineering Co., Inc.  
9400 Ward Parkway  
Kansas City, Missouri 64114  
816-353-9400  
Certificate of Authority  
No. : 000165  
BMD Project No. 80028







Professional Engineer  
 Mark Huck  
 PE-22266  
 DATE PREPARED  
 6-12-2015  
 ROUTE I-435 STATE MO  
 DISTRICT BR SHEET NO. 4  
 COUNTY JACKSON  
 JOB NO. J413028B  
 CONTRACT ID.

PROJECT NO.  
 BRIDGE NO. A22494

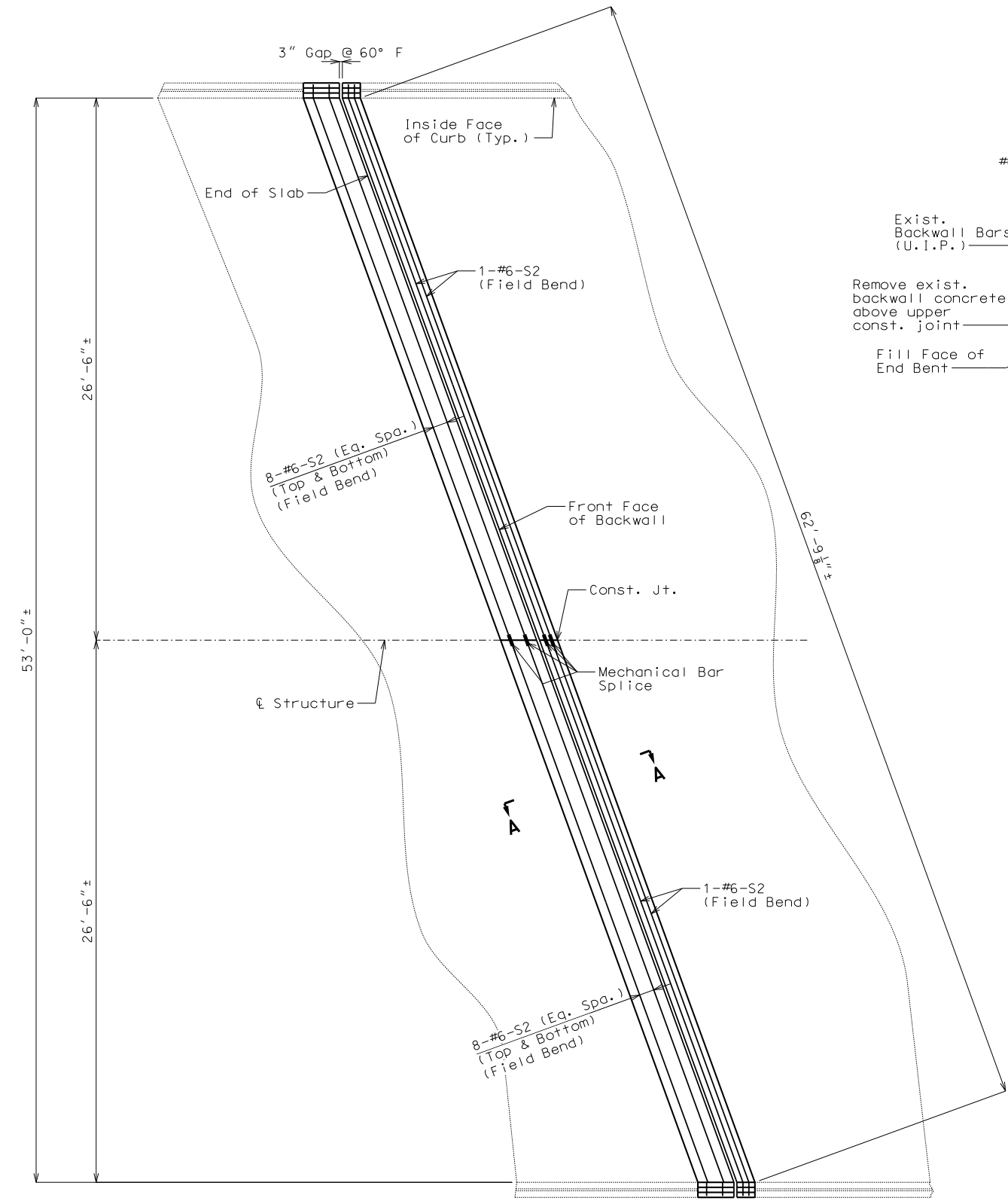
DATE	DESCRIPTION

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

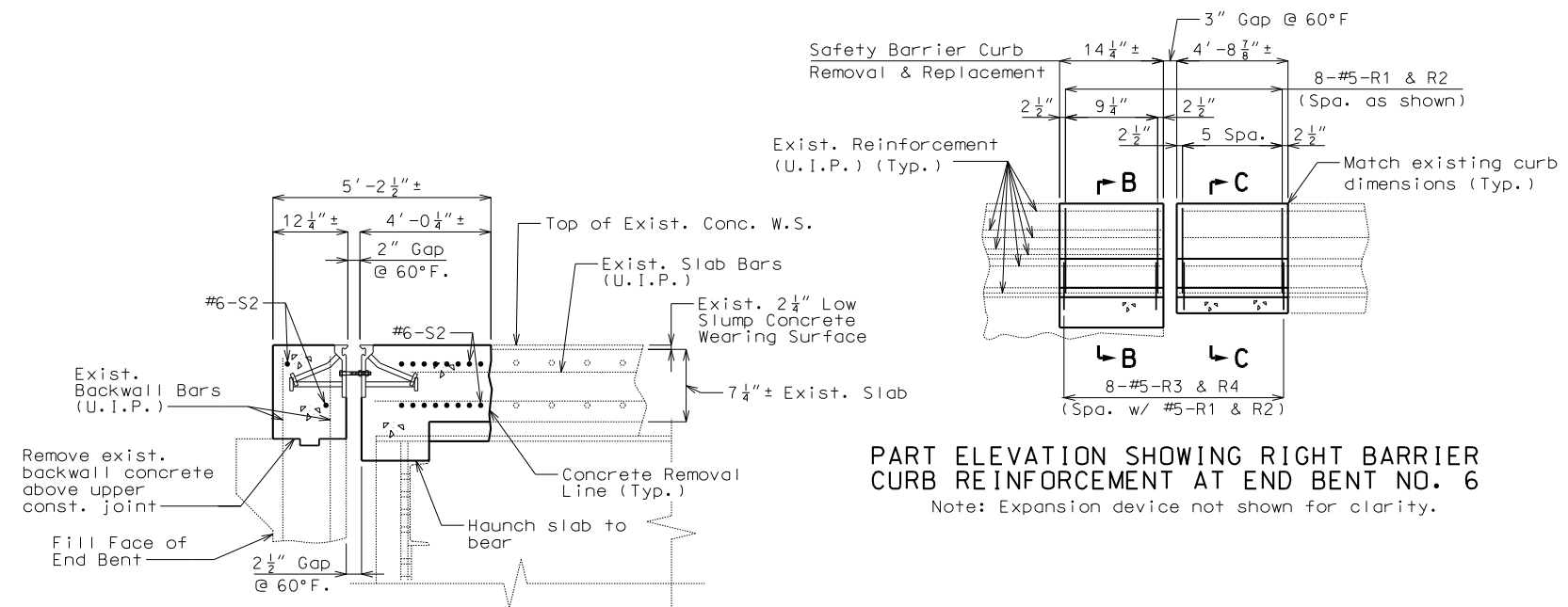
Burns & McDonnell Engineering Co., Inc.  
 9400 Ward Parkway  
 Kansas City, Missouri 64114  
 816-353-9400  
 Certificate of Authority  
 No. : 000165  
 BMD Project No. 80028



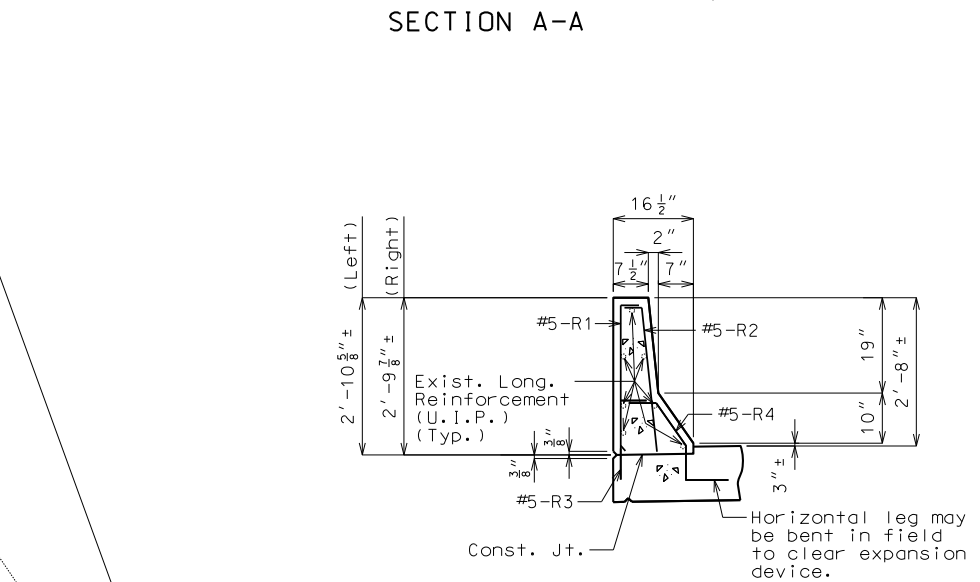
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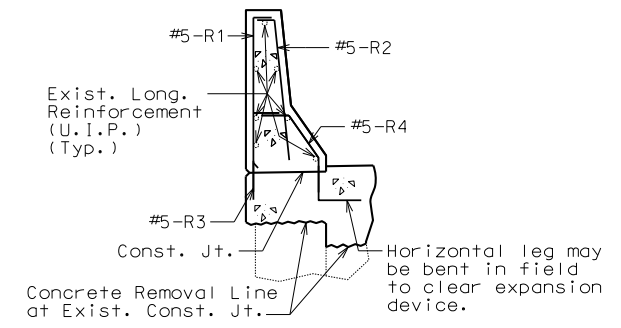
PART PLAN OF SLAB AT END BENT NO. 6  
 Note: Expansion device not shown for clarity.



PART ELEVATION SHOWING RIGHT BARRIER CURB REINFORCEMENT AT END BENT NO. 6  
 Note: Expansion device not shown for clarity.



SECTION C-C \*



SECTION B-B \*

Notes:  
 Shift S-bars where necessary to clear the expansion device.  
 Concrete in the safety barrier curb and slab shall be Class B-1.  
 The contractor shall use a mechanical bar splice for S-bars at the specified location. The total bar lengths for bars indicated in the bill of reinforcing steel are determined based on the end of the bars being located flush to the face of the construction joint. No additional payment will be made for any additional bar lengths required for the mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 except that no measurement will be made for mechanical bar splice and will be considered completely covered by the contract unit price for the Reinforcing Steel (Epoxy Coated).  
 Payment for curb concrete removal and all concrete and reinforcement for safety barrier curb, complete-in-place, will be considered completely covered by the contract unit price for Remove and Replace Barrier Curb per linear foot.

\* Field verify dimensions of existing barrier curb and form replacement barrier curb to match.

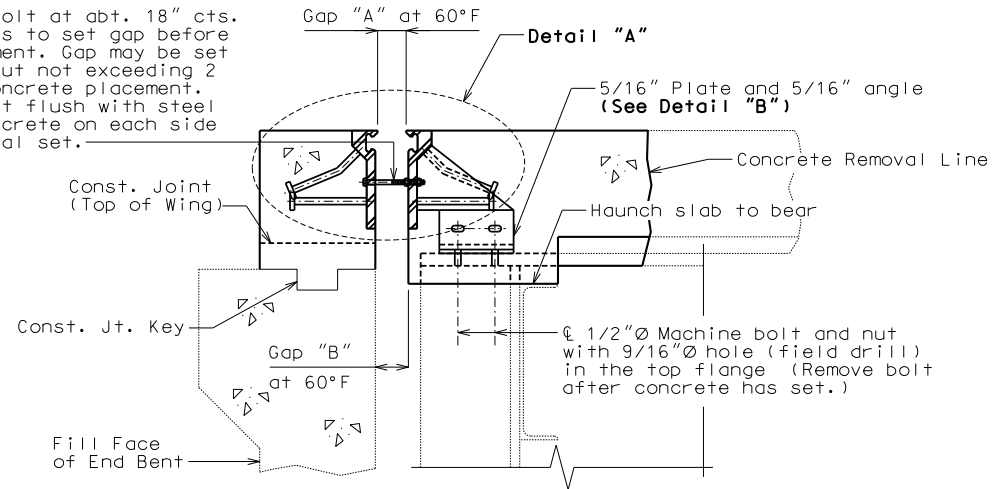
DETAILS OF SLAB BARRIER CURB AT JOINT 2 NEAR END BENT 6

DETAILED: APR 2014  
 CHECKED: APR 2014

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

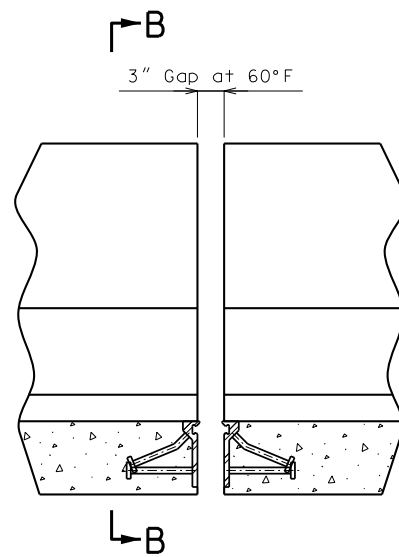
Sheet No. 4 of 6

1/2"Ø Machine bolt at abt. 18" cts.  
Use two hex nuts to set gap before  
concrete placement. Gap may be set  
anytime up to but not exceeding 2  
hours before concrete placement.  
Cut machine bolt flush with steel  
armor after concrete on each side  
has taken initial set.



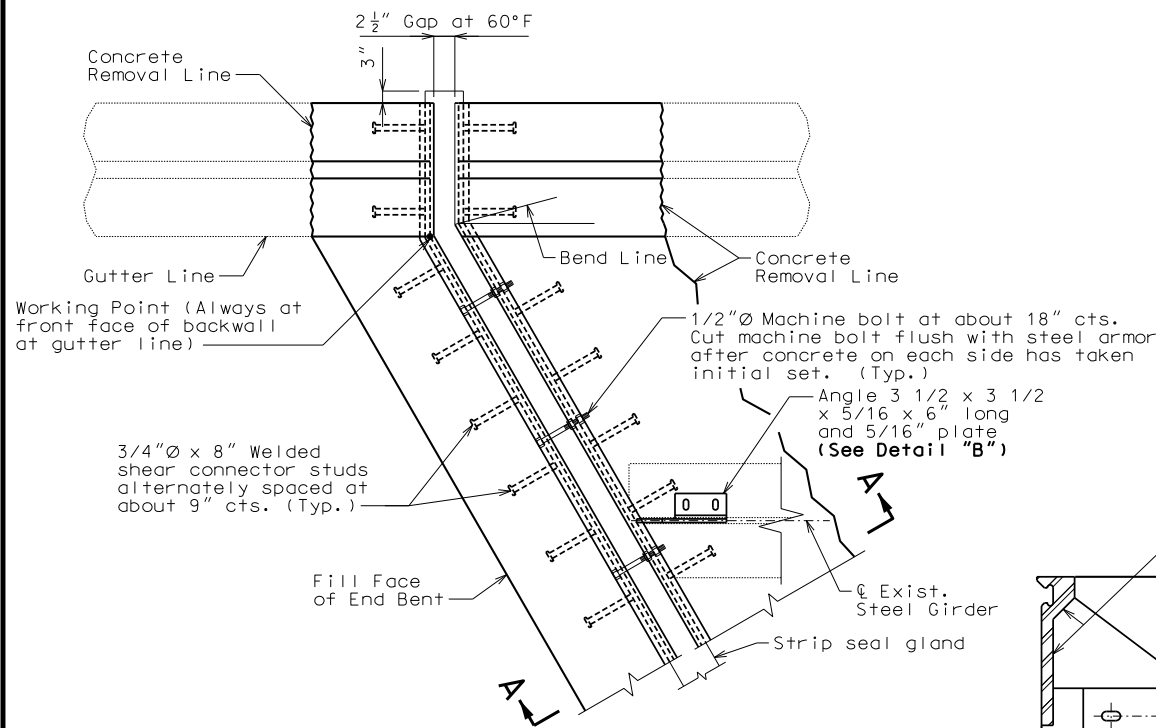
SECTION A-A

Note: Strip seal gland not shown for clarity.



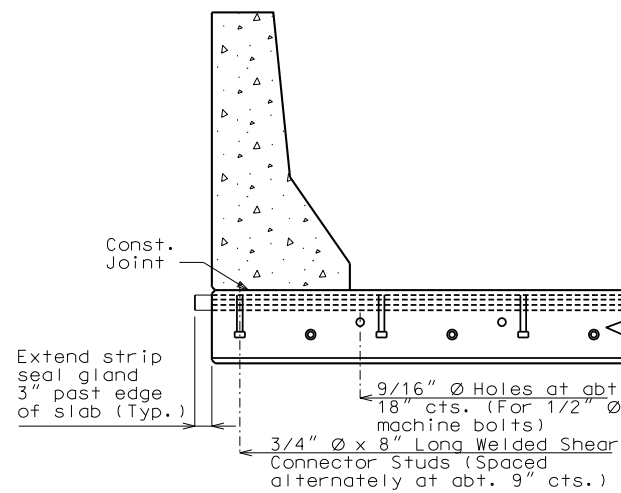
PART ELEVATION OF BARRIER CURB

Note: Strip seal gland not shown for clarity.



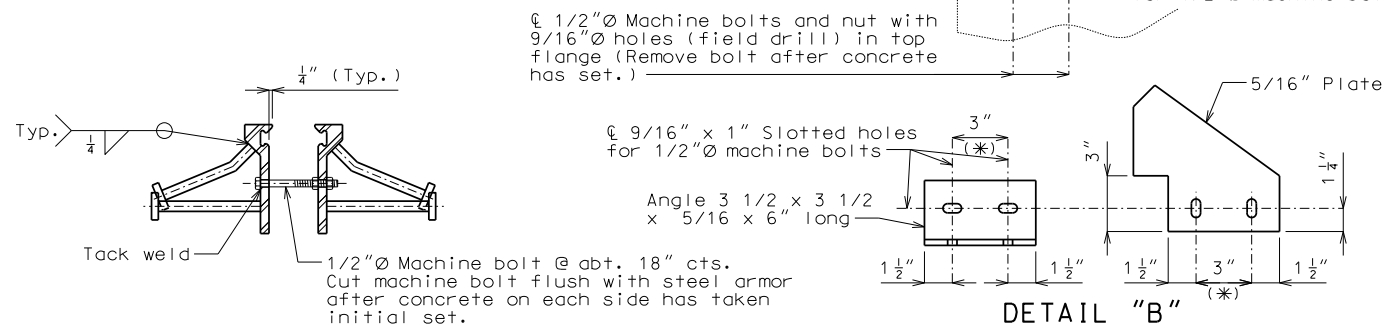
PART PLAN

(End Bt. No.1 shown, End Bt. No.6 Similar)



PART SECTION B-B

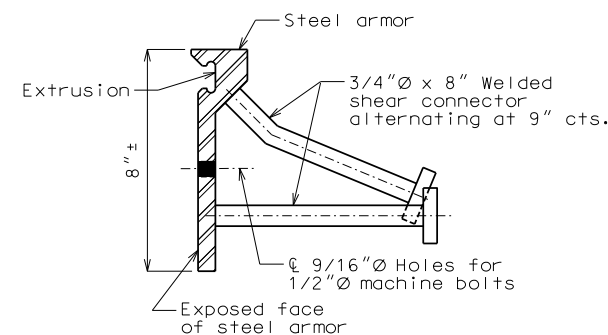
GAP DIMENSION		
Bent	"A"	"B"
1	2 1/2"	3"
6	2"	2 1/2"



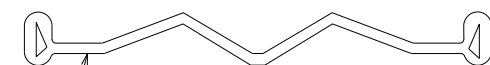
DETAILS OF STRIP SEAL AT END BENT NO. 1 & 6

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

Sheet No. 5 of 6



DETAIL OF JOINT ARMOR



Single layer gland, multiple-layer glands not allowed

Strip seal gland size = \*

\* 5" at Bent 1  
4" at Bent 6

GENERAL NOTES:

Expansion joint system shall be fabricated in one section, except for stage construction and when the length is over 50 feet. A complete joint penetration groove welded splice shall be required. Welds shall be ground flush to provide a smooth surface. The expansion joint system shall be fabricated and installed to the crown and grade of the roadway.

The strip seal gland shall be installed in joints in one continuous piece without field splices. Factory splicing will be permitted for joints in excess of 53 feet.

Structural steel for the expansion joint system shall be ASTM A709 Grade 36 except the steel armor may be ASTM A709 Grade 50W. Anchors for the expansion joint system shall be in accordance with Sec 1037. Strip seal expansion joint system shall be in accordance with Sec 717.

Structural steel for the expansion joint system shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum) or galvanized in accordance with ASTM A123. Anchors need not be protected from overspray.

Plan dimensions are based on installation at 60°F. The expansion gap and other dimensions shall be increased or decreased 1/4" or 1/8" at End Bent 1 and End Bent 6, respectively, for each 10° fall or rise in temperature at installation.

Existing reinforcing steel shall be cut or bent so that end shall not be more than ±1" from vertical leg of the steel armor at the expansion joint system.

Concrete shall be forced under and around steel armor and anchors. Proper consolidation of the concrete shall be achieved by localized internal vibration.

(\* Match Existing.



Professional Engineer  
Mark Huck  
PE-22266

DATE PREPARED  
6-12-2015

ROUTE I-435 STATE MO

DISTRICT BR SHEET NO. 5

COUNTY JACKSON

JOB NO. J413028B

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A22494

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

COMMISSION

9400 Ward Parkway Kansas City, Missouri 64114

816-353-9400

Certificate of Authority No. 1 000165

BMD Project No. 80028

Burns & McDonnell

ENGINEERING Co., Inc.

SINCE 1898

DETAILED: APR 2014  
CHECKED: APR 2014

DETAIL "A"



DESIGN DESIGNATION

A.A.D.T. - 2016 = 75,150  
 A.A.D.T. - 2036 = 101,450  
 T = 11%  
 V = 65 M.P.H.

FUNCTIONAL CLASSIFICATION- INTERSTATE

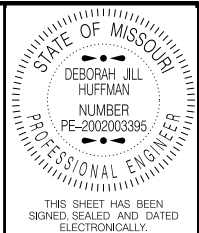
NO RIGHT OF WAY  
 WILL BE ACQUIRED

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
 PLANS FOR PROPOSED  
 STATE HIGHWAY

JACKSON COUNTY

INDEX OF SHEETS

DESCRIPTION	SHEET NUMBER
TITLE SHEET -----	1
TYPICAL SECTIONS (TS) (1 SHEET)----	2
QUANTITIES (QU) (3 SHEETS)-----	3
TRAFFIC CONTROL SHEETS (TC)-----	4-12



DATE PREPARED  
 6/11/2015

ROUTE I-435	STATE MO
DISTRICT KC	SHEET NO. 1

COUNTY  
 JACKSON  
 JOB NO.  
 J413038C  
 CONTRACT ID.  
 PROJECT NO.  
 BRIDGE NO.

LENGTH OF PROJECT

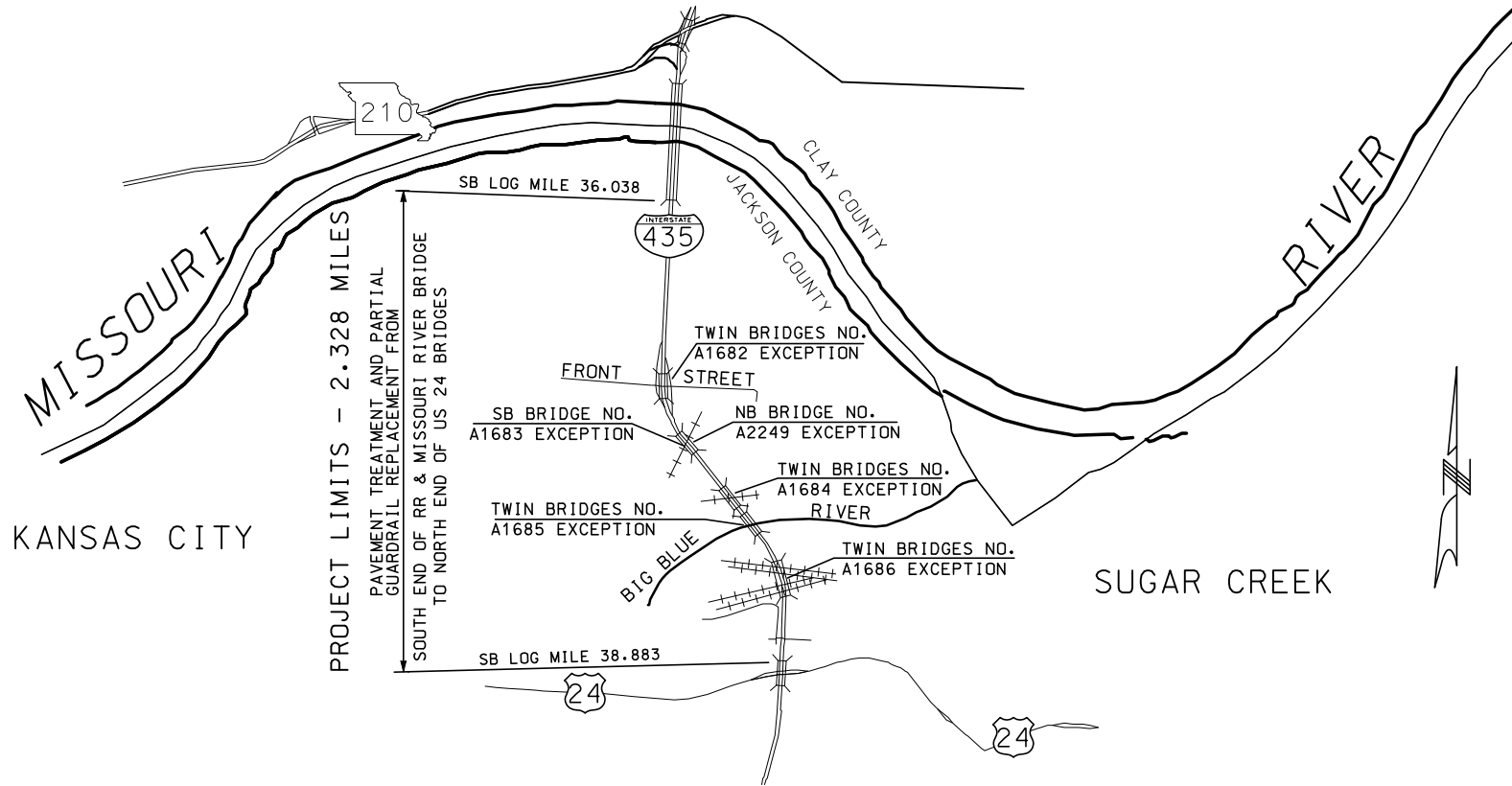
BEGINNING OF SB PROJECT	SB LOG MILE 36.038
END OF SB PROJECT	SB LOG MILE 38.883
APPARENT SB LENGTH	2.845 MILES
EXCEPTIONS:	
	SB BR A1682: 161 FT
	SB BR A1683: 534 FT
	SB BR A1684: 183 FT
	SB BR A1685: 884 FT
	SB BR A1686: 968 FT

TOTAL SB CORRECTIONS 2730 FT  
 NET LENGTH SB JACKSON CO 2.328 MILES

BEGINNING OF NB PROJECT	NB LOG MILE 16.344
END OF NB PROJECT	NB LOG MILE 19.186
APPARENT NB LENGTH	2.842 MILES
EXCEPTIONS:	
	NB BR A1686: 929 FT
	NB BR A1685: 884 FT
	NB BR A1684: 183 FT
	NB BR A2249: 472 FT
	NB BR A1682: 161 FT

TOTAL NB CORRECTIONS 2629 FT  
 NET LENGTH NB JACKSON CO 2.344 MILES

NET LENGTH OF SB PROJECT	2.328 MILES
NET LENGTH OF NB PROJECT	2.344 MILES
STATE LENGTH OF SB PROJECT	2.328 MILES
STATE LENGTH OF NB PROJECT	2.344 MILES



CONVENTIONAL SYMBOLS  
 (USED IN PLANS)

	EXISTING	NEW
BUILDINGS AND STRUCTURES	[Symbol]	[Symbol]
GUARD RAIL	[Symbol]	[Symbol]
CONCRETE RIGHT-OF-WAY MARKER	[Symbol]	[Symbol]
STEEL RIGHT-OF-WAY MARKER	[Symbol]	[Symbol]
LOCATION SURVEY MARKER	[Symbol]	[Symbol]
UTILITIES		
FIBER OPTICS	-FO-	-FO-
OVERHEAD TELEPHONE	-O-	-O-
UNDERGROUND TELEPHONE	-T-	-T-
OVERHEAD POWER	-P-	-P-
UNDERGROUND POWER	-P-	-P-
GAS	-G-	-G-
WATER	-W-	-W-
MANHOLE	[Symbol]	[Symbol]
FIRE HYDRANT	[Symbol]	[Symbol]
WATER VALVE	[Symbol]	[Symbol]
WATER METER	[Symbol]	[Symbol]
DROP INLET	[Symbol]	[Symbol]
DITCH BLOCK	[Symbol]	[Symbol]
GROUND MOUNTED SIGN	[Symbol]	[Symbol]
LIGHT POLE	[Symbol]	[Symbol]
H-FRAME POWER POLE	[Symbol]	[Symbol]
TELEPHONE PEDESTAL	[Symbol]	[Symbol]
FENCE		
CHAIN LINK	-V-	-V-
WOVEN WIRE	-X-	-X-
GATE POST	[Symbol]	[Symbol]
BENCHMARK	[Symbol]	[Symbol]

NOTE: DASHED OR OPEN SYMBOLS INDICATE  
 EXISTING FEATURES

NOT TO SCALE

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
 COMMISSION



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



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
6/17/2015

ROUTE I-435 STATE MO  
DISTRICT KC SHEET NO. 2


COUNTY JACKSON

JOB NO. J413038C  
CONTRACT ID.

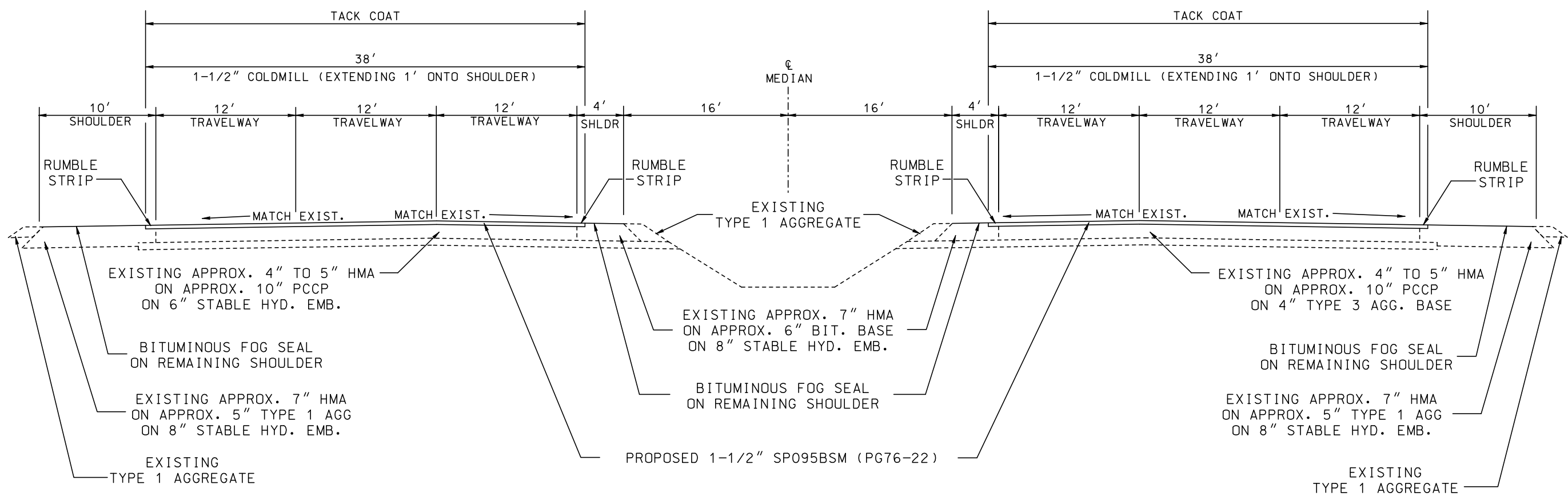
PROJECT NO.

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.



CONTINUOUS NB LOG MILES 16.344 TO 19.186  
 CONTINUOUS SB LOG MILES 36.038 TO 38.883

NOT TO SCALE

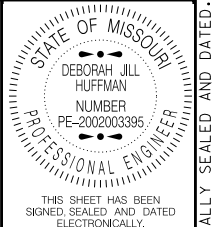
NOTE: MAY EXCEPT OUT COLDMILLING EXTENDING 1' ONTO SHOULDER IN AREAS OF NEW OPTIONAL SHOULDER BUILT FOR TRAFFIC CONTROL PURPOSES IN PROJECT J413022B. SEE TYPICAL SECTION SHEET 2 OF 2 IN PROJECT J413022B FOR LIMITS OF OPTIONAL SHOULDER. QUANTITY FOR COLDMILLING IS INCLUDED IN THESE LOCATIONS, IF NEEDED.

ESTIMATED APPLICATION RATES	
SP095BSM (PG76-22)	1.930 TONS/C.Y.
BITUM. FOG SEAL	0.15 GAL./S.Y.
TACK COAT	0.08 GAL./S.Y.

TYPICAL SECTION SHEET  
 SHEET 1 OF 1

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## SUMMARY OF QUANTITIES



DATE PREPARED  
6/17/2015

ROUTE STATE  
I-435 MO

DISTRICT SHEET NO.  
KC 3

COUNTY  
JACKSON

JOB NO.  
J413038C

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

MOBILIZATION
1 LUMP SUM

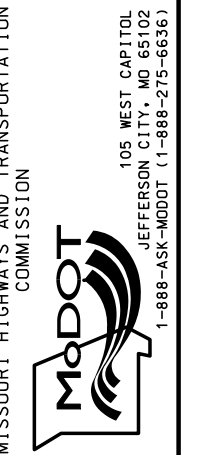
REMOVAL OF IMPROVEMENTS						
LOG MILE	LOG MILE	LOCATION	OFFSET	DESCRIPTION	QUANTITY EACH	REMARKS
16.463	16.771	I-435 NB	RT.	1525' OF GUARDRAIL	1	REPLACE GUARDRAIL
36.463	36.510	I-435 SB	RT.	250' OF GUARDRAIL	1	REPLACE GUARDRAIL
37.124	37.349	I-435 SB	RT.	1187.5' OF GUARDRAIL	1	REPLACE GUARDRAIL
38.456	38.589	I-435 SB	RT.	700' OF GUARDRAIL	1	REPLACE GUARDRAIL
38.664	38.685	I-435 SB	RT.	112.5' OF GUARDRAIL	1	REPLACE GUARDRAIL
PAY TOTAL					1 LUMP SUM	

PAVEMENT RESURFACING												
LOG MILE	LOG MILE	DIRECTION	LENGTH MILE	WIDTH FOR SUPERPAVE FT.	WIDTH FOR FOG SEAL FT.	DEPTH OF SPO95BSM IN.	SPO95BSM (PG76-22) TONS	BITUM. FOG SEAL GAL.	TACK GAL.	COLD MILLING (3 IN OR LESS) S.Y.	REMARKS	
16.344	16.771	NB	0.427	38	12	1.5	765.5	451	762	9519	BR. A1686 (UP RR) EXCEPTION	
16.947	17.130	NB	0.183	38	12	1.5	328.1	193	326	4080	BR. A1685 (BIG BLUE RIVER) EXCEPTION	
17.297	17.390	NB	0.093	38	12	1.5	166.7	98	166	2073	BR. A1684 (HAWTHORNE RD) EXCEPTION	
17.425	17.802	NB	0.377	38	12	1.5	675.9	398	672	8405	BR. A2249 (UP RR) EXCEPTION	
17.891	18.140	NB	0.249	38	12	1.5	446.4	263	444	5551	BR. A1682 (FRONT STREET) EXCEPTION	
18.170	19.186	NB	1.016	38	12	1.5	1821.4	1073	1812	22650		
36.038	37.055	SB	1.017	38	12	1.5	1823.2	1074	1814	22672	BR. A1682 (FRONT STREET) EXCEPTION	
37.085	37.349	SB	0.264	38	12	1.5	473.3	279	471	5885	BR. A1683 (UP RR) EXCEPTION	
37.45	37.799	SB	0.349	38	12	1.5	625.7	369	622	7780	BR. A1684 (HAWTHORNE RD) EXCEPTION	
37.834	37.936	SB	0.102	38	12	1.5	182.9	108	182	2274	BR. A1685 (BIG BLUE RIVER) EXCEPTION	
38.103	38.273	SB	0.170	38	12	1.5	304.8	180	303	3790	BR. A1686 (UP RR) EXCEPTION	
38.456	38.883	SB	0.427	38	12	1.5	765.5	451	762	9519		
16.344	16.385	NB	0.041	12	0	1.5	23.2	0	23	289	AUXILIARY LANE FROM RTE. 24	
38.824	38.883	SB	0.059	12	0	1.5	33.4	0	33	415	AUXILIARY LANE TO RTE. 24	
18.344	18.525	NB	0.181	12	0	1.5	102.5	0	102	1274	AUXILIARY LANE FROM FRONT STREET (ON RAMP 1)	
36.663	36.843	SB	0.180	12	0	1.5	101.9	0	101	1267	AUXILIARY LANE TO FRONT STREET (OFF RAMP 2)	
17.884	18.004	NB	0.120	12	0	1.5	67.9	0	68	845	AUXILIARY LANE TO FRONT STREET (OFF RAMP 3)	
37.224	37.784	SB	0.560	12	0	1.5	317.0	0	315	3942	AUXILIARY LANE FROM FRONT STREET (ON RAMP 4)	
16.344	19.186	NB	2.842	-----	-----	-----	420.4				10% FOR IRREGULARITIES	
36.038	38.883	SB	2.845	-----	-----	-----	417.5				10% FOR IRREGULARITIES	
PAY TOTAL							9863.2	4936	8980	112232		

BITUMINOUS SHOULDER RUMBLE STRIP						
LOG MILE	LOG MILE	LOCATION	DIRECTION	LENGTH FT.	BITUMINOUS RUMBLE STRIPS STA.	REMARKS
16.344	16.771	I-435	NB	2255	45.1	LEFT & RIGHT SHOULDER
16.947	17.130	I-435	NB	966.24	19.3	LEFT & RIGHT SHOULDER
17.297	17.390	I-435	NB	491.04	9.8	LEFT & RIGHT SHOULDER
17.425	17.802	I-435	NB	1990.56	39.8	LEFT & RIGHT SHOULDER
17.891	18.140	I-435	NB	1314.72	26.3	LEFT & RIGHT SHOULDER
18.170	19.186	I-435	NB	5364.48	107.3	LEFT & RIGHT SHOULDER
36.038	37.055	I-435	SB	5369.76	107.4	LEFT & RIGHT SHOULDER
37.085	37.349	I-435	SB	1393.92	27.9	LEFT & RIGHT SHOULDER
37.45	37.799	I-435	SB	1842.72	36.9	LEFT & RIGHT SHOULDER
37.834	37.936	I-435	SB	538.56	10.8	LEFT & RIGHT SHOULDER
38.103	38.273	I-435	SB	897.6	18.0	LEFT & RIGHT SHOULDER
38.456	38.883	I-435	SB	2254.56	45.1	LEFT & RIGHT SHOULDER
PAY TOTAL					493.6	

DESCRIPTION

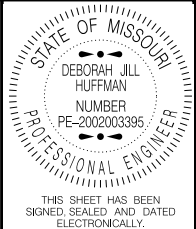
DATE



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

# MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

## SUMMARY OF QUANTITIES



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
6/17/2015

ROUTE I-435 STATE MO

DISTRICT KC SHEET NO. 3

COUNTY JACKSON

JOB NO. J413038C

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.

### PERMANENT GUARDRAIL

BEG. LOG MILE	END LOG MILE	DIRECTION	LOCATION	TYPE A GUARDRAIL L.F.	ASYMETRICAL TRANSITION SECTION (6.5 FT. POSTS) EACH	BRIDGE ANCHOR SECTION EACH	TYPE A CRASHWORTHY END TERMINAL EACH	END ANCHOR EACH	REMARKS
16.463	16.771	NB	RT.	1525	1	1	1		WILSON RD. TO BR. A1686 (UP & KCT RAILROAD)
36.463	36.510	SB	RT.	250			1	1	SCOUT SIGN
37.124	37.349	SB	RT.	1187.5					BR. A1683 (UP RAILROAD) NORTH END
38.456	38.589	SB	RT.	700	1	1		1	BR. A1686 (UP & KCT RAILROAD) SOUTH END
38.664	38.685	SB	RT.	112.5	1	1	1		WILSON RD.
<b>PAY TOTAL</b>				<b>3775</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>	

### PAVEMENT REPAIR

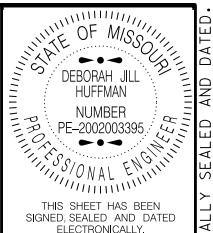
DIRECTION	BEGIN LOCATION	END LOCATION	NUMBER OF PARTIAL DEPTH REPAIR AREAS	NUMBER OF FULL DEPTH REPAIR AREAS	CLASS B PARTIAL DEPTH FURN & PLACE TONS	CLASS B PARTIAL DEPTH REMOVAL S.Y.	TACK COAT GAL.	CLASS B FULL DEPTH S.Y.	SUBGRADE COMPACTION S.Y.	TYPE 1 OR 5 AGGREGATE (PAVT REPAIR) S.Y.	FULL DEPTH SAW CUT L.F.	DOWEL BARS EACH	REMARKS
NB	RTE. 24 BRIDGE	RR BRIDGE	13	25	17.2	104	8.3	200.0	20	20	750	500	6'X12' REPAIR AREAS
NB	RR BRIDGE	BLUE RIVER BRIDGE	10	19	13.2	80	6.4	152.0	15	15	570	380	6'X12' REPAIR AREAS
NB	BLUE RIVER BRIDGE	HAWTHORNE RD BRIDGE	4	7	5.3	32	2.6	56.0	6	6	210	140	6'X12' REPAIR AREAS
NB	HAWTHORNE RD BR	UPRR BRIDGE	11	22	14.5	88	7.0	176.0	18	18	660	440	6'X12' REPAIR AREAS
NB	UPRR BRIDGE	FRONT ST BRIDGE	4	9	5.3	32	2.6	72.0	7	7	270	180	6'X12' REPAIR AREAS
NB	FRONT ST BRIDGE	MO RIVER BRIDGE	7	13	9.2	56	4.5	104.0	10	10	390	260	6'X12' REPAIR AREAS
SB	MO RIVER BR	FRONT ST BRIDGE	12	23	15.8	96	7.7	184.0	18	18	690	460	6'X12' REPAIR AREAS
SB	FRONT ST BRIDGE	UPRR BRIDGE	2	3	2.6	16	1.3	24.0	2	2	90	60	6'X12' REPAIR AREAS
SB	UPRR BRIDGE	HAWTHORNE RD BRIDGE	12	24	15.8	96	7.7	192.0	19	19	720	480	6'X12' REPAIR AREAS
SB	HAWTHORNE RD BR	BLUE RIVER BRIDGE	3	7	4.0	24	1.9	56.0	6	6	210	140	6'X12' REPAIR AREAS
SB	BLUE RIVER BRIDGE	RR BRIDGE	3	7	4.0	24	1.9	56.0	6	6	210	140	6'X12' REPAIR AREAS
SB	RR BRIDGE	RTE. 24 BRIDGE	10	20	13.2	80	6.4	160.0	16	16	600	400	6'X12' REPAIR AREAS
<b>PAY TOTAL</b>					<b>120.1</b>	<b>728.0</b>	<b>60</b>	<b>1432.0</b>	<b>143</b>	<b>143</b>	<b>5370</b>	<b>3580</b>	

### PERMANENT PAVEMENT MARKING

LOG MILE	LOG MILE	DIRECTION	LENGTH FT.	NO. OF LANES	HIGH BUILD WATERBORNE			TYPE 2 PREFORMED MARKING TAPE (GROOVED)		REMARKS
					WHITE 6" L.F.	YELLOW 6" L.F.	WHITE 12" L.F.	SOLID WHITE 6" L.F.	LEFT/RIGHT ARROW EACH	
16.344	19.186	NB	15006	2	15006	15006				LT. & RT. EDGELINE
36.038	38.883	SB	15022	2	15022	15022				LT. & RT. EDGELINE
16.344	19.186	NB	15006	2	7504					INTERMITTENT STRIPE
36.038	38.883	SB	15022	2	7520					INTERMITTENT STRIPE
0.000	18.525	RAMP 1	97812	2			440			FRONT ST. AUXILIARY LANE AND GORE
0.000	36.843	RAMP 2	194531	2			570	800	3	FRONT ST. AUXILIARY LANE AND GORE
0.000	18.004	RAMP 3	95061	2			380	800	3	FRONT ST. AUXILIARY LANE AND GORE
0.000	37.784	RAMP 4	199500	2			640			FRONT ST. AUXILIARY LANE AND GORE
<b>PAY TOTAL</b>					<b>45051</b>	<b>30027</b>	<b>2030</b>	<b>1600</b>	<b>6</b>	

SUMMARY SHEET  
SHEET 2 OF 3

REV.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.  
DATE PREPARED 6/17/2015  
ROUTE I-435 STATE MO  
DISTRICT KC SHEET NO. 3

COUNTY JACKSON  
JOB NO. J413038C  
CONTRACT ID.

PROJECT NO.  
BRIDGE NO.

Table with columns: DESCRIPTION, DATE. Contains vertical lines for data entry.

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

Main table with columns: SIZE (IN.), AREA (SQ. FT.), QTY, TOTAL AREA, RELOC, DESCRIPTION. Includes sections for WARNING SIGNS and various sign types (W01-1L, W01-1R, etc.).

Main table with columns: SIGN, SIZE (IN.), AREA (SQ. FT.), QTY, TOTAL AREA, RELOC, DESCRIPTION. Includes sections for GUIDE SIGNS, REGULATORY SIGNS, and MISCELLANEOUS SIGNS.

Summary table with columns: ITEM NUMBER, TOTAL QTY, DESCRIPTION. Lists items 612-20.08 through 902-94.01 and their quantities.

616-10.05 CONSTRUCTION SIGNS TOTAL 1474  
616-10.10 RELOCATED SIGNS TOTAL

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



# Sign Spacing, Device Spacing, Channelizing Taper Lengths And Recommended Maximum Speed Reductions

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		THROUGH TAPER	THROUGH WORK AREA
0-35	205 FT	225 FT	245 FT	70	35 FT	50 FT
40-45	450 FT	495 FT	540 FT	150	40 FT	100 FT
50-55	550 FT	605 FT	660 FT	185	50 FT	100 FT
60-70	700 FT	770 FT	840 FT	235	60 FT	100 FT

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

LONGITUDINAL BUFFER SPACE	
SPEED (P) MPH	BUFFER SPACE (FEET)
0-35	250
40-45	360
50-55	495
60-70	730

SIGN SPACING FOR ADVANCE SIGN SERIES (1) (2)		
SPEED (P) MPH	NON-DIVIDED HIGHWAYS (S)	
	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.

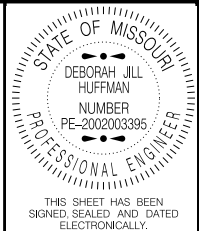
- (1) SPACING BETWEEN SIGNS AND SPACING BETWEEN LAST SIGN AND FLAGGER, BEGINNING OF TAPER, OR SIGNED CONDITION
- (2) SPACINGS MAY BE ADJUSTED AS NECESSARY TO MEET FIELD CONDITIONS

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.	

GENERAL NOTES:

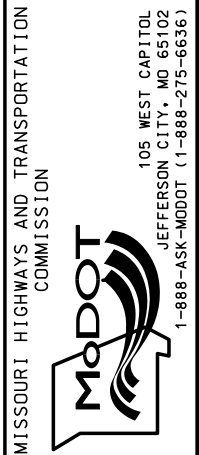
1. SEE STANDARD PLAN 616.10 FOR DETAILS AND ITEMS NOT SHOWN
2. EXISTING SIGNS SHALL BE COVERED DURING WORKING HOURS ONLY IF IN CONFLICT WITH TRAFFIC CONTROL PLANS.
3. NO DIRECT PAYMENT WILL BE MADE FOR RELOCATING, COVERING, UNCOVERING OR REMOVING SIGNS.
4. CONES ALLOWABLE FOR DAYTIME OPERATIONS ONLY.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

DEVICE SPACING  
 TEMPORARY TRAFFIC CONTROL  
 SHEET 1 OF 9



DATE PREPARED: 6/11/2015  
 ROUTE: I-435 STATE: MO  
 DISTRICT: KC SHEET NO.: 4  
 COUNTY: JACKSON  
 JOB NO.: J413038C  
 CONTRACT ID.:  
 PROJECT NO.:  
 BRIDGE NO.:

DATE	DESCRIPTION



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

END OF PROJECT LIMITS; END OF WORK ZONE TERMINATION AREA, IF LOCATED BEYOND END OF PROJECT; OR LAST WORK ZONE SIGN, IF LOCATED OUTSIDE PROJECT LIMITS.

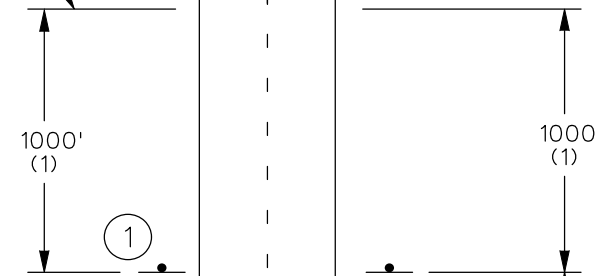
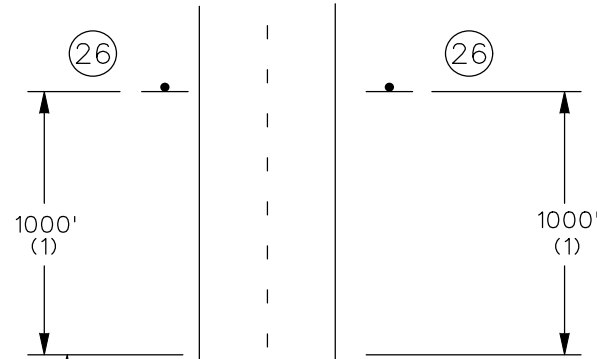
BEGINNING OF PROJECT LIMITS; OR INITIAL WORK ZONE SIGN, IF LOCATED OUTSIDE PROJECT LIMITS.

ROAD WORK  
NEXT XX MILES

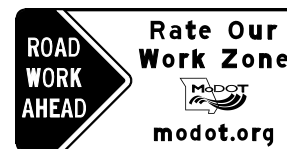
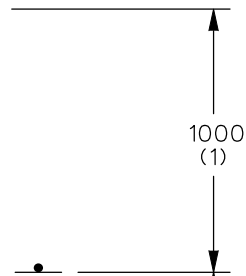
G020-1  
①

END  
ROAD WORK

G020-2  
②⑥



CONST-5-96 (3)



CONST-7-72 (2)

MULTI-LANE DIVIDED  
BEGIN/END OF PROJECT SIGNING  
(FOR USE ON ALL PROJECTS)

NOTES:

SIGN ① IS REQUIRED PER EPG 616.6.56.

SIGN ②⑥ IS USED ON ALL PROJECTS WHERE SIGN ① IS USED.

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

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

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

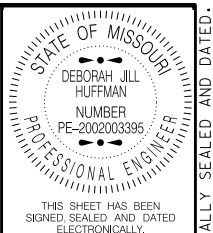
(2) SIGN CONST-7-72 OR CONST-7-48 IS PLACED 500 FEET BEFORE THE BEGINNING OF PROJECT LIMITS OR THE ROAD WORK AHEAD SIGN OR ROAD WORK NEXT XX MILES SIGN, IF USED, WHEN THESE SIGNS ARE LOCATED OUTSIDE THE PROJECT LIMITS.

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

(4) THE "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 96 IN. X 48 IN. VERSION OF THE SIGN IS USED IN ALL OTHER APPLICATIONS. BUT CAN ALSO BE USED IN PLACE OF THE 48 IN. X 36 IN. SIGN IF ADDED EMPHASIS IS DEEMED NECESSARY.

BEGIN/END  
TEMPORARY  
TRAFFIC CONTROL  
SHEET 2 OF 9



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
6/11/2015

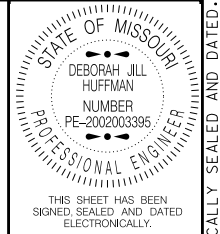
ROUTE I-435	STATE MO
DISTRICT KC	SHEET NO. 5
COUNTY JACKSON	
JOB NO. J413038C	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

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.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 6/11/2015

ROUTE I-435 STATE MO

DISTRICT KC SHEET NO. 6

COUNTY JACKSON

JOB NO. J413038C

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

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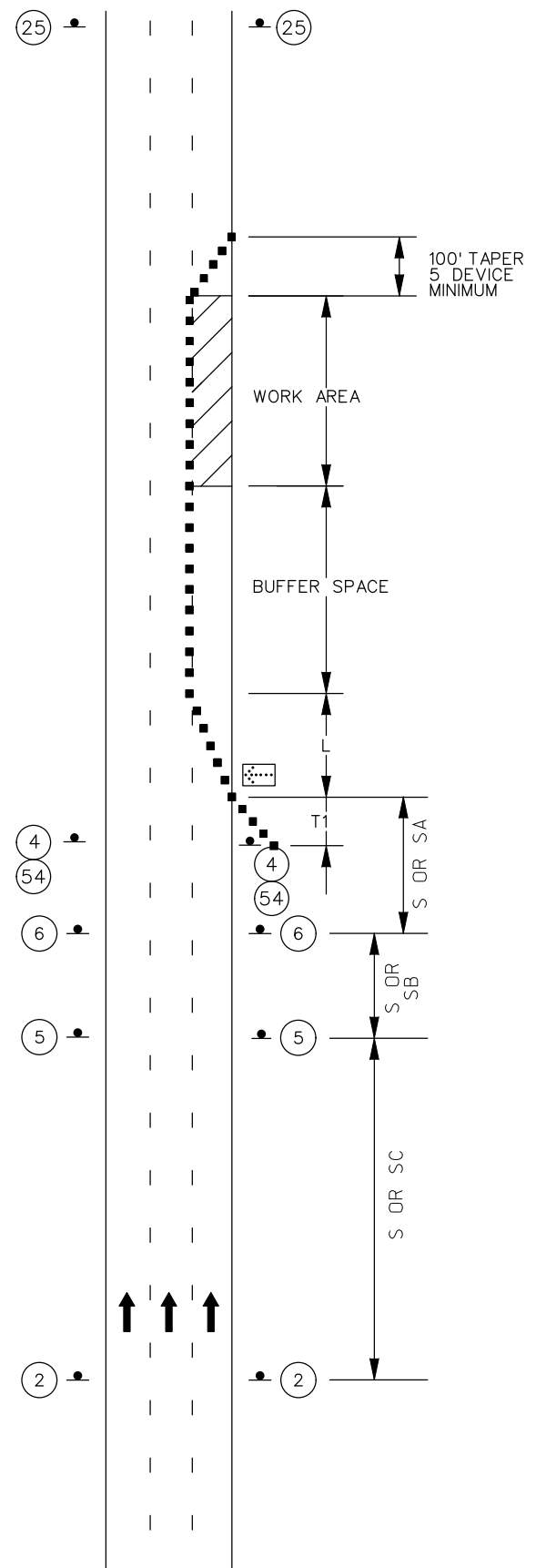
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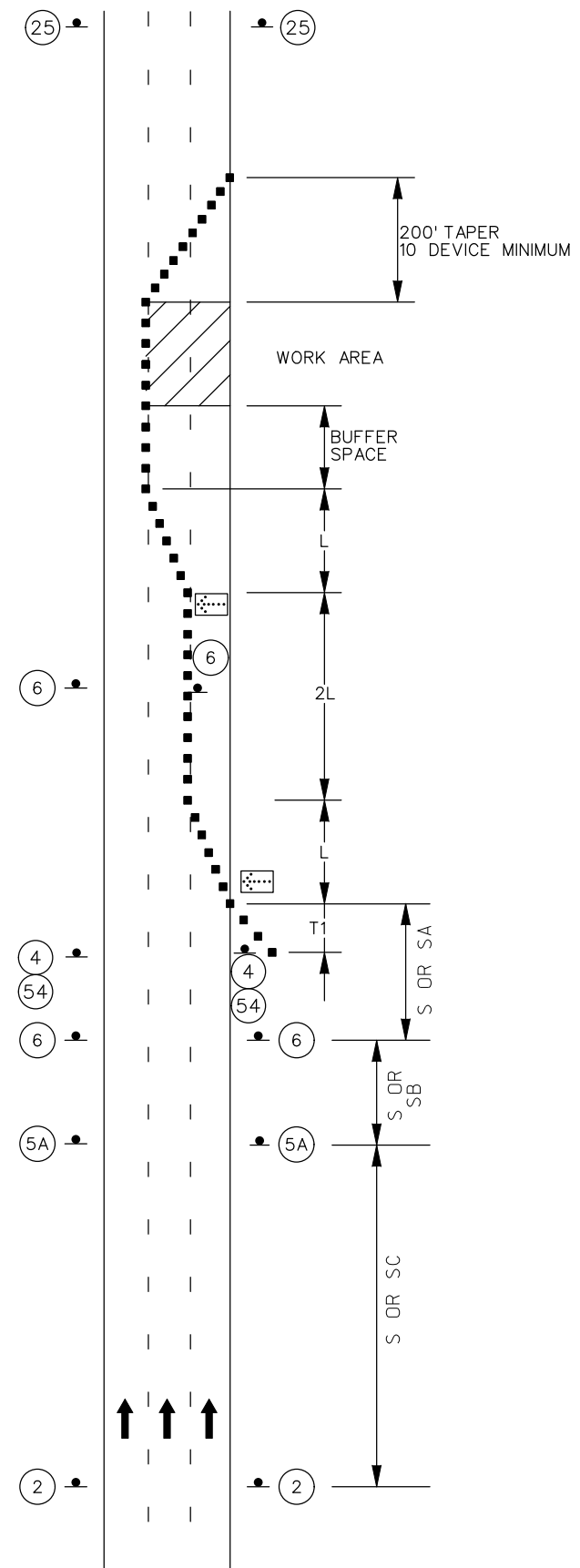
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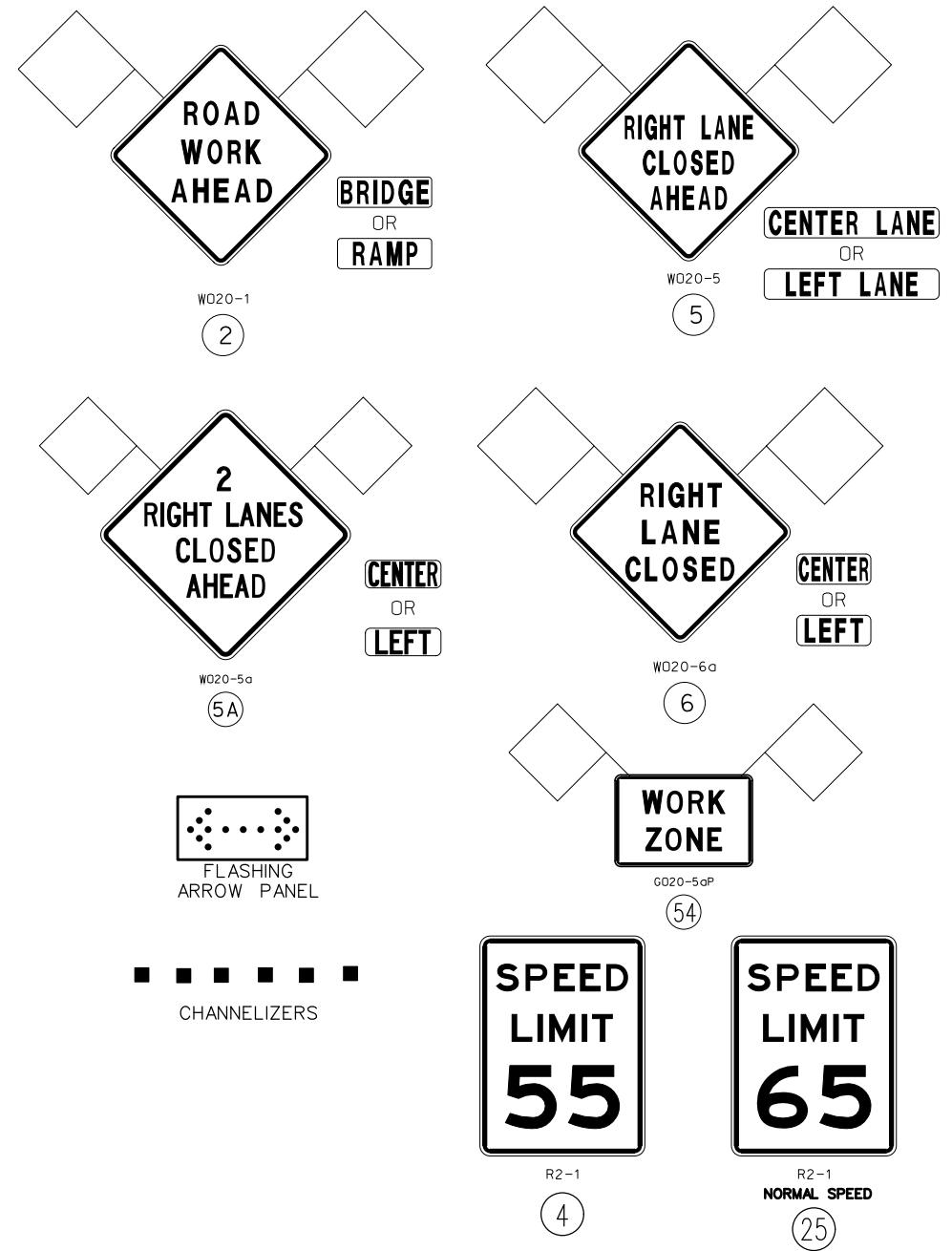
DATE



TYPICAL LEFT OR RIGHT LANE CLOSURE MULTI-LANE DIVIDED HIGHWAY



LANE CLOSURE TWO LANES OF MULTI-LANE DIVIDE HIGHWAY



NOTES:

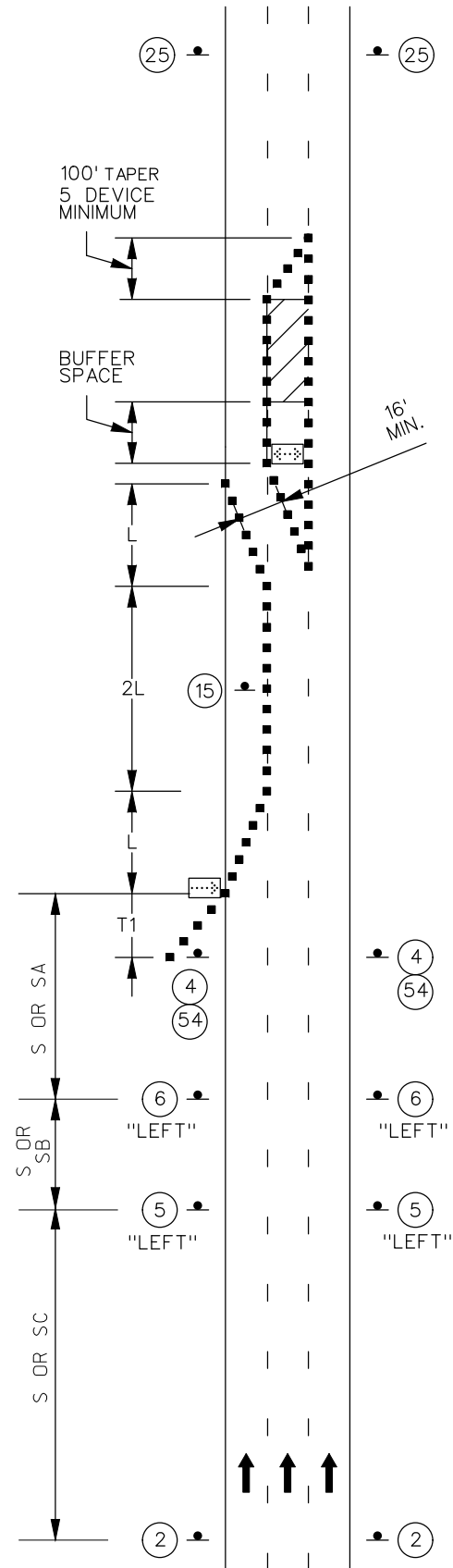
- (1). SEE TRAFFIC CONTROL SHEET 1 FOR WORK ZONE SPEED LIMIT GUIDELINES.
- (2). SEE TRAFFIC CONTROL SHEET 1 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.
- (3). SEE EPG FIGURE 616.0.5, SHEET 2 OF 2, FOR A LANE CLOSURE WITH WIDTH RESTRICTION.
- (4). REMOVE AND/OR MODIFY ANY EXISTING PAVEMENT MARKING AS NEEDED.
- (5). TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM CLOSURES.
- (6). ALTERNATIVE TEMPORARY TRAFFIC CONTROL SET-UPS SHOULD BE CONSIDERED WHEN REDUCTION IN CAPACITY CANNOT BE TOLERATED.

LANE CLOSURE MULTI LANE TEMPORARY TRAFFIC CONTROL SHEET 3 OF 9

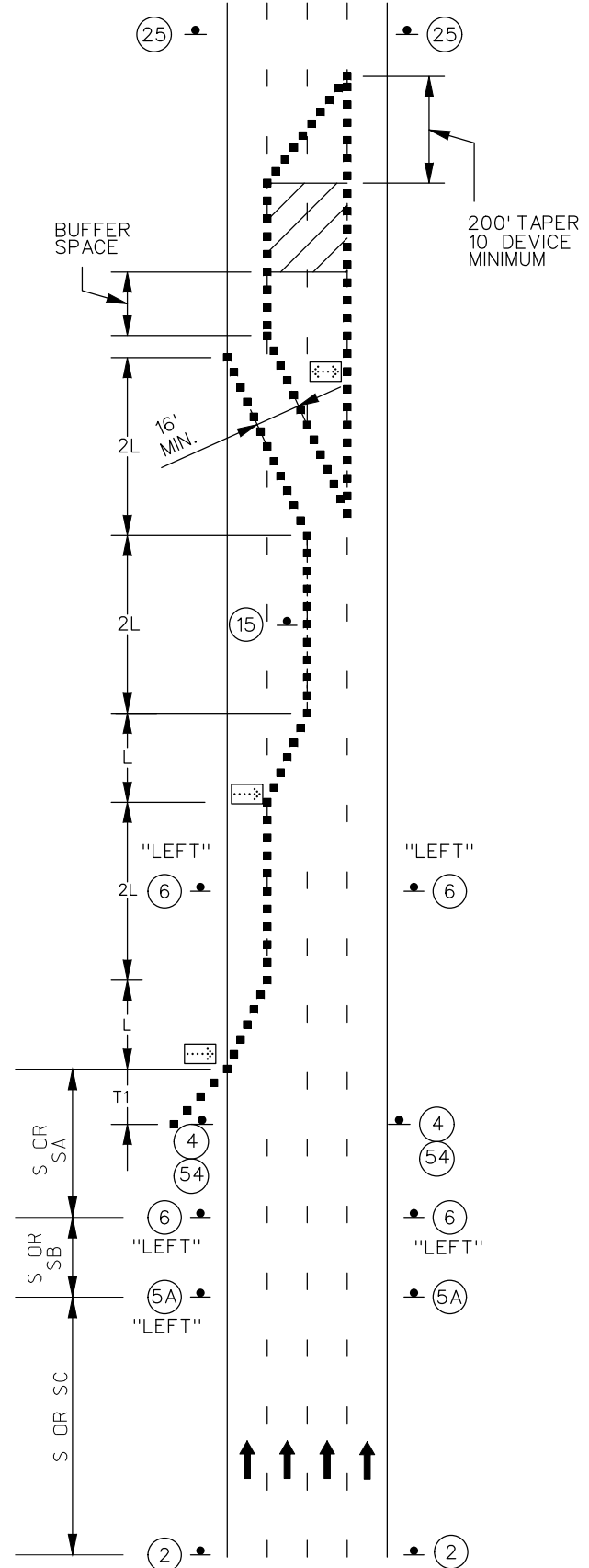
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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.



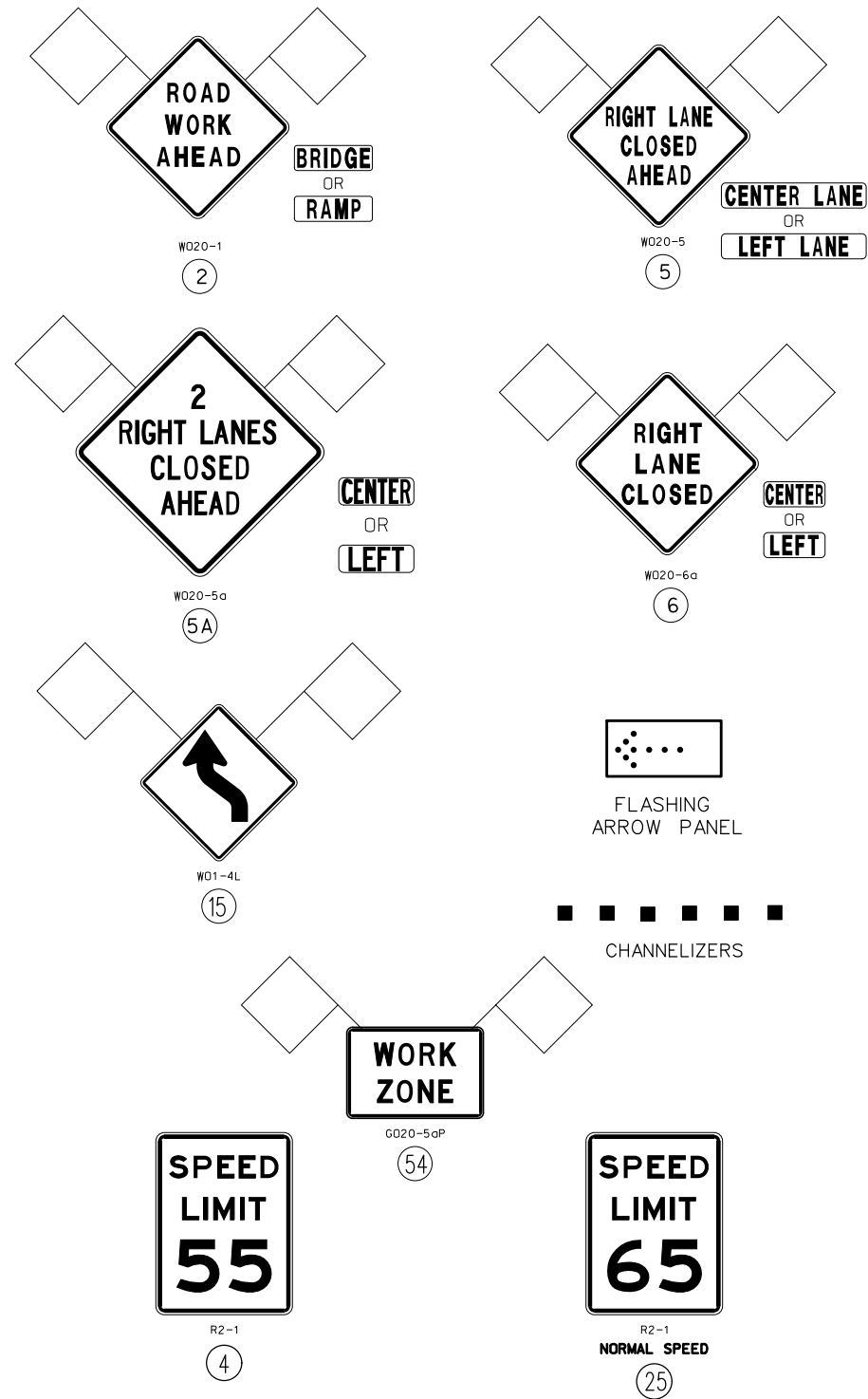
INTERIOR LANE



TWO INTERIOR LANES

LANE CLOSURE

INTERIOR LANE CLOSURES OF MULTI-LANE DIVIDED HIGHWAY



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). REMOVE AND/OR MODIFY EXISTING PAVEMENT MARKING AS NEEDED.
- (4). TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM LANE CLOSURES.
- (5). ALTERNATIVE TEMPORARY TRAFFIC CONTROL SET-UPS SHOULD BE CONSIDERED WHEN REDUCTION IN CAPACITY CANNOT BE TOLERATED.

STATE OF MISSOURI  
DEBORAH JILL HUFFMAN  
NUMBER PE-202003395  
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 6/11/2015

ROUTE I-435	STATE MO
DISTRICT KC	SHEET NO. 7

COUNTY JACKSON

JOB NO. J413038C

CONTRACT ID. \_\_\_\_\_

PROJECT NO. \_\_\_\_\_

BRIDGE NO. \_\_\_\_\_

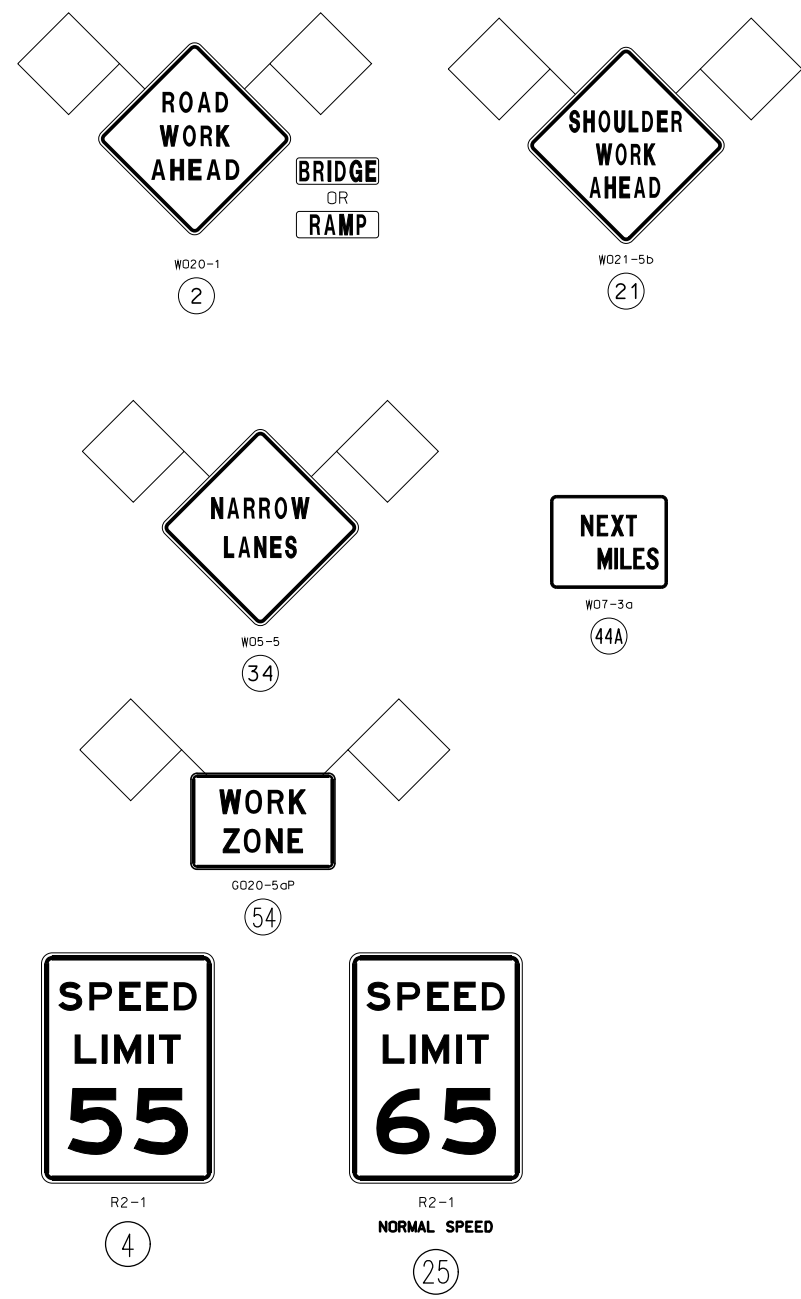
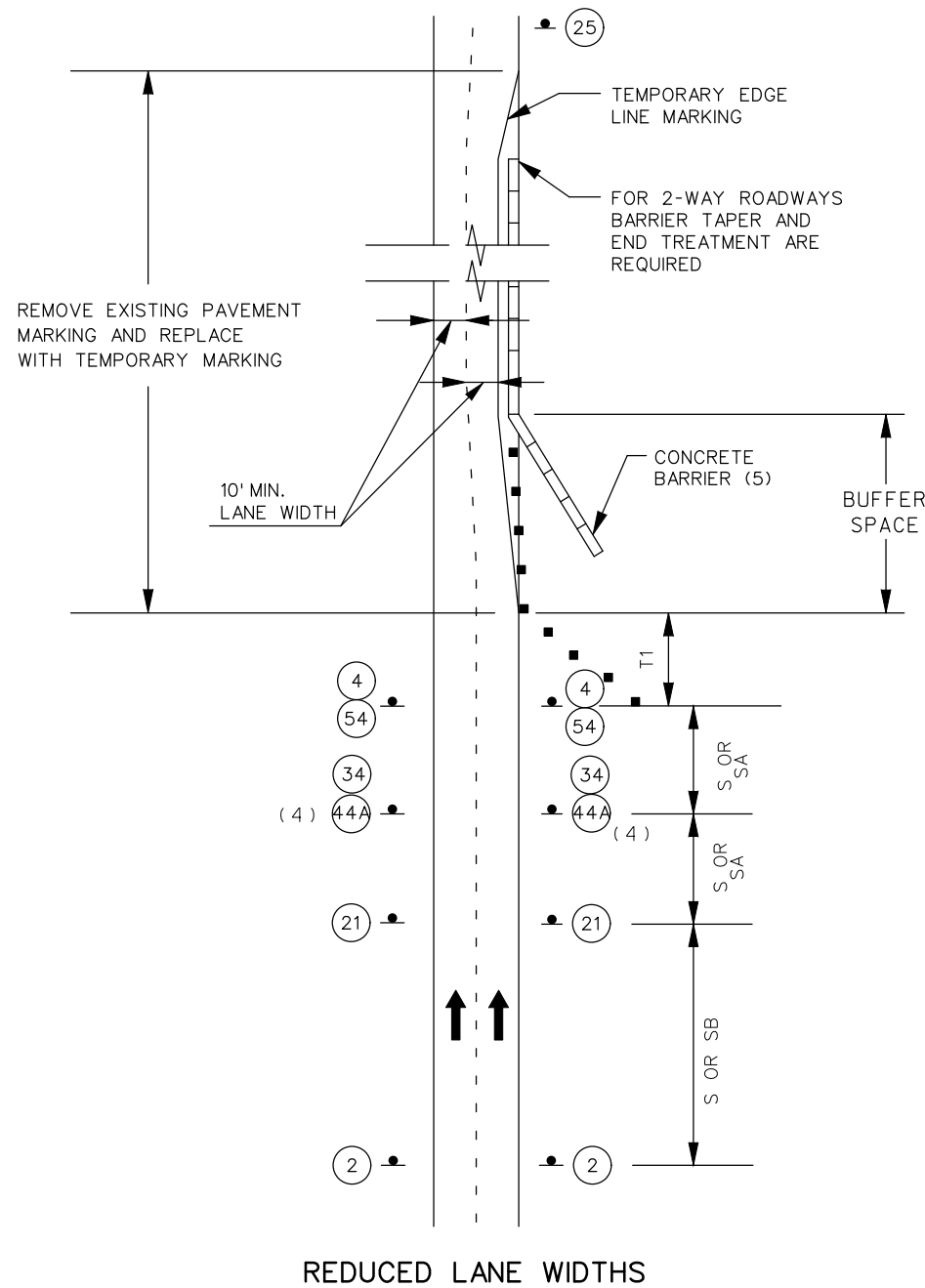
DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

**MoDOT**

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



**NOTES:**

IF SHOULDER IS SUITABLE FOR CARRYING TRAFFIC, LANES MAY BE SHIFTED TO SHOULDER WITH APPROPRIATE PAVEMENT MARKING.

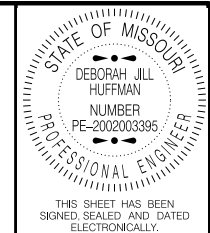
ON NON-DIVIDED HIGHWAYS, PROVIDE SIGNS ONLY ON THE RIGHT SIDE OF EACH APPROACH.

PROVIDE SIGNS ON LEFT AND RIGHT SIDE OF DIVIDED HIGHWAYS.

**GENERAL 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 SHOULDER WORK IS LOCATED WITHIN THE LIMITS OF AN ACTIVITY AREA WHERE ANOTHER SIGN 2 IS ALREADY USED.
- (4). SIGN 44A NOT REQUIRED FOR NARROW LANE SECTIONS LESS THAN ONE MILE.
- (5). FLARE BARRIER TO EXTEND BEYOND CLEAR ZONE OR FLARE BARRIER TO EDGE LINE AND USE APPROVED END TREATMENT.

SHOULDER WORK  
TEMPORARY  
TRAFFIC CONTROL  
SHEET 5 OF 9



DATE PREPARED  
6/11/2015

ROUTE I-435  
STATE MO  
DISTRICT KC  
SHEET NO. 8

COUNTY  
JACKSON

JOB NO.  
J413038C

CONTRACT ID.

PROJECT NO.

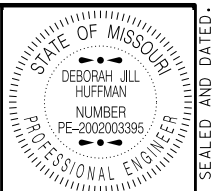
BRIDGE NO.

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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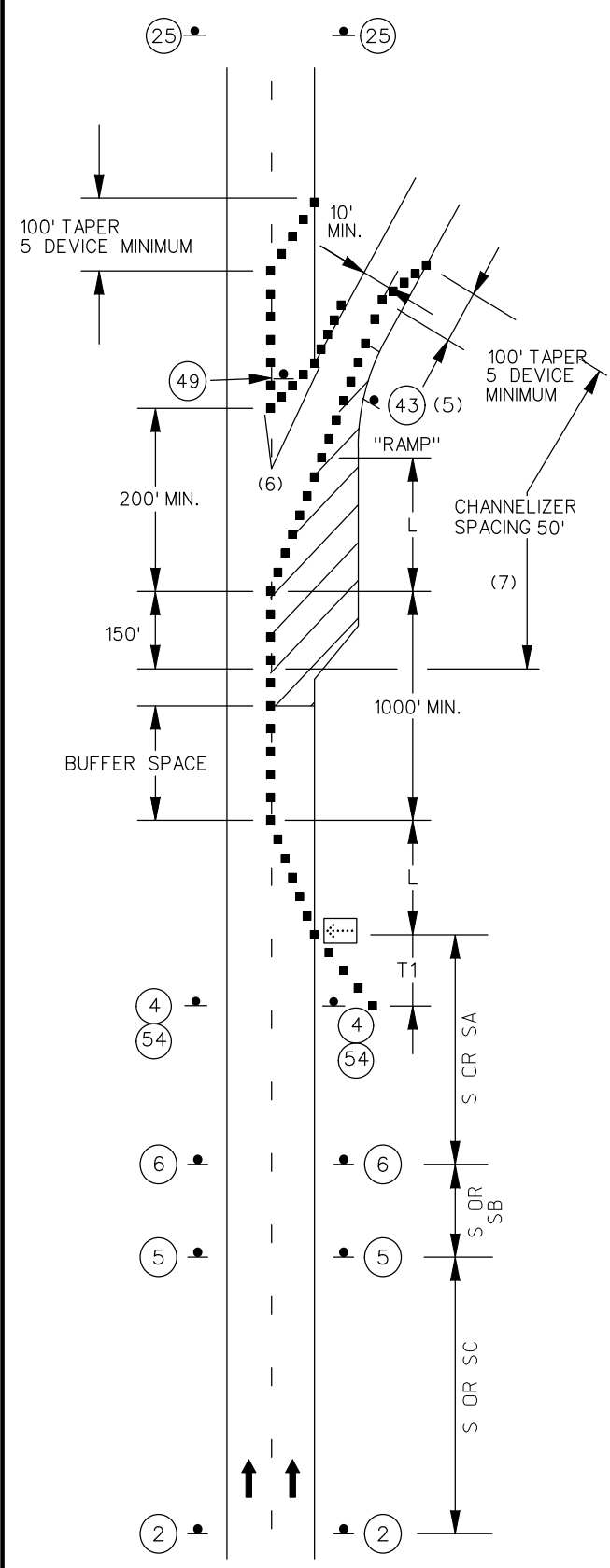
DATE PREPARED  
6/11/2015  
ROUTE I-435 STATE MO  
DISTRICT KC SHEET NO. 9  
COUNTY JACKSON  
JOB NO. J413038C  
CONTRACT ID.

PROJECT NO.  
BRIDGE NO.

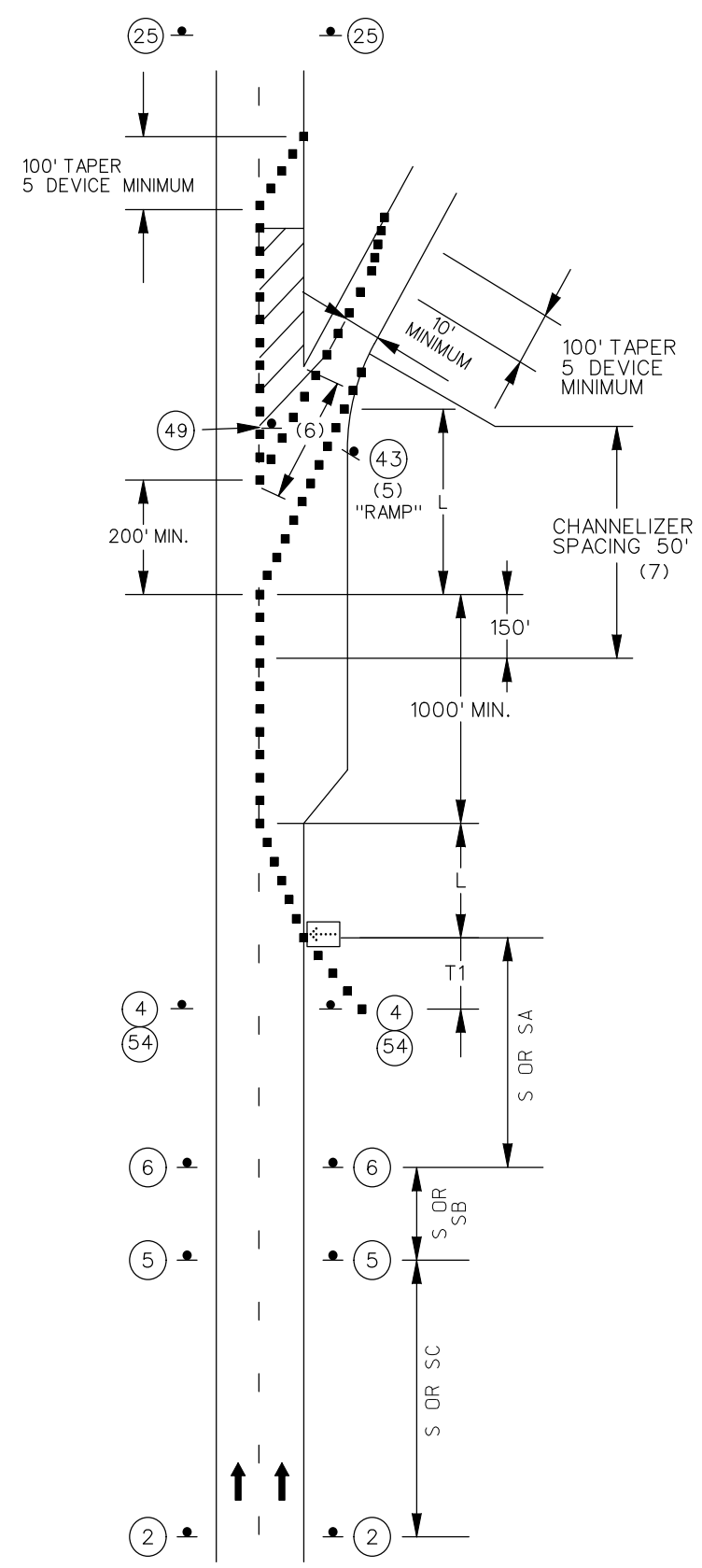
DATE	DESCRIPTION

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

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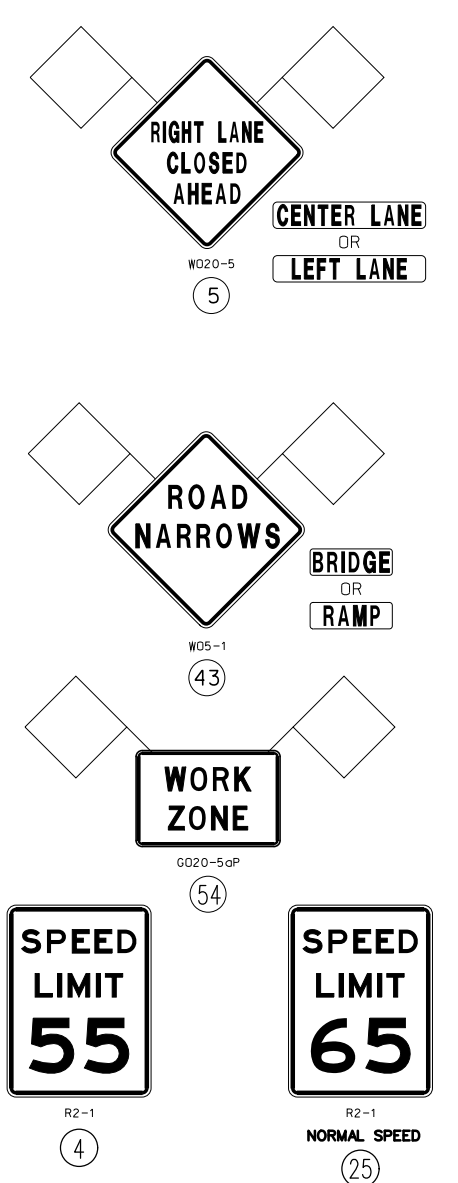
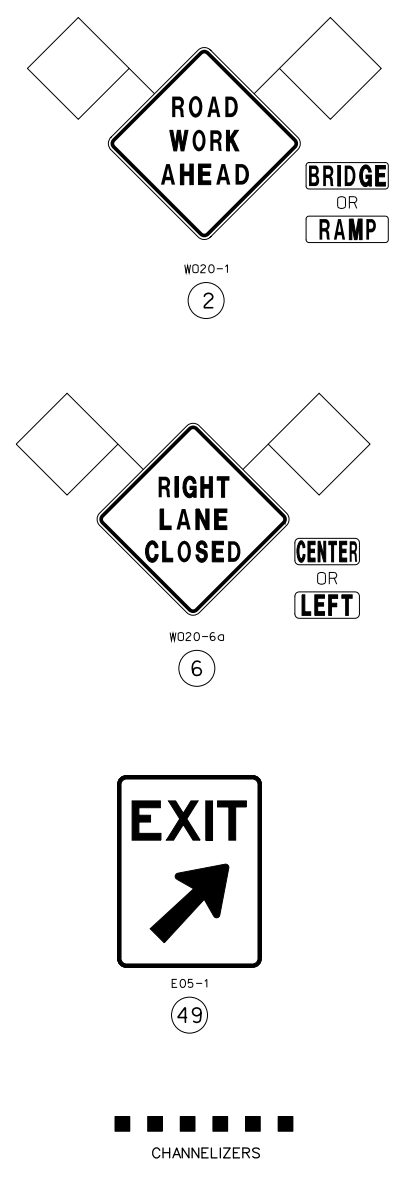


LANE CLOSURE  
EXIT RAMP AREAS

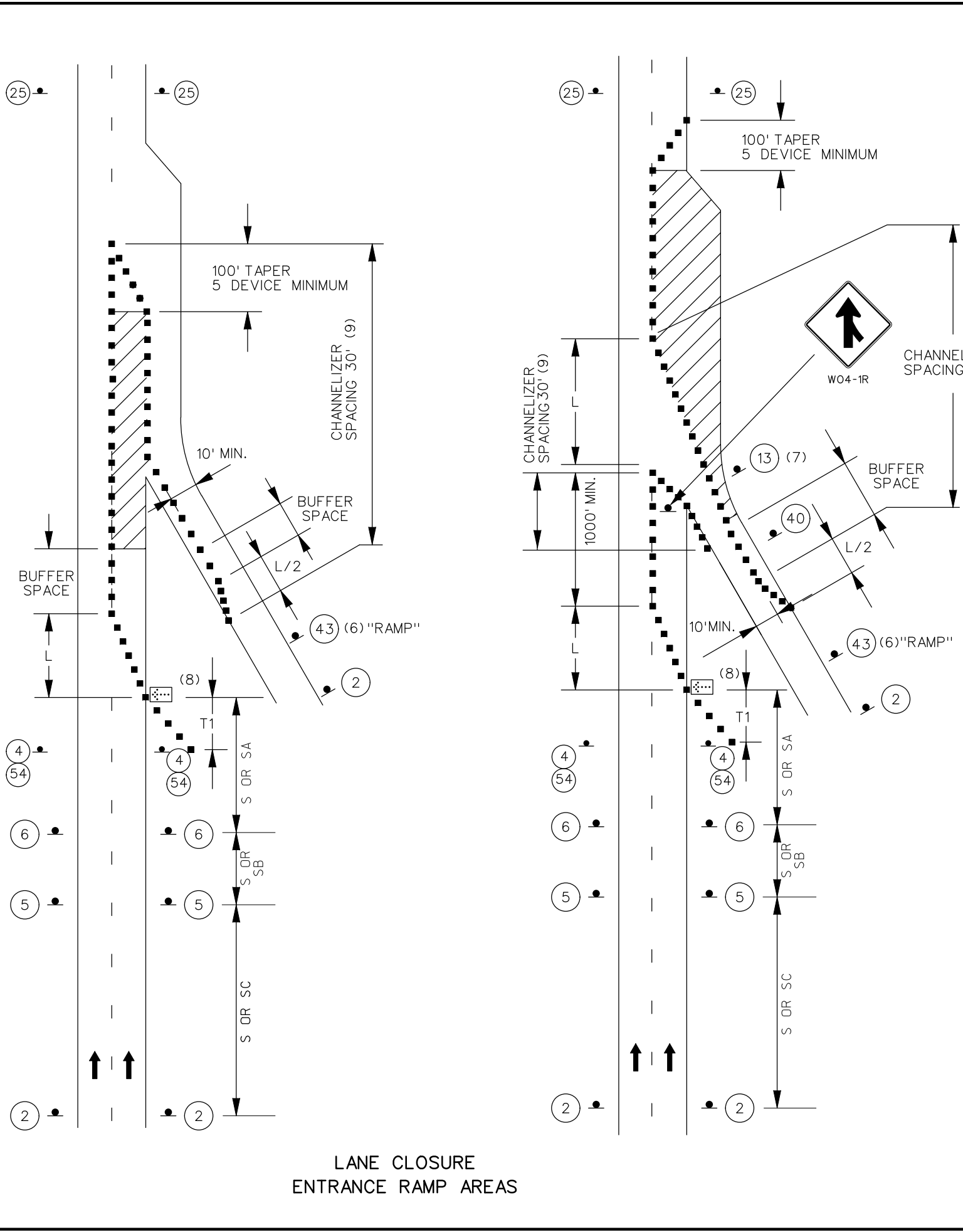


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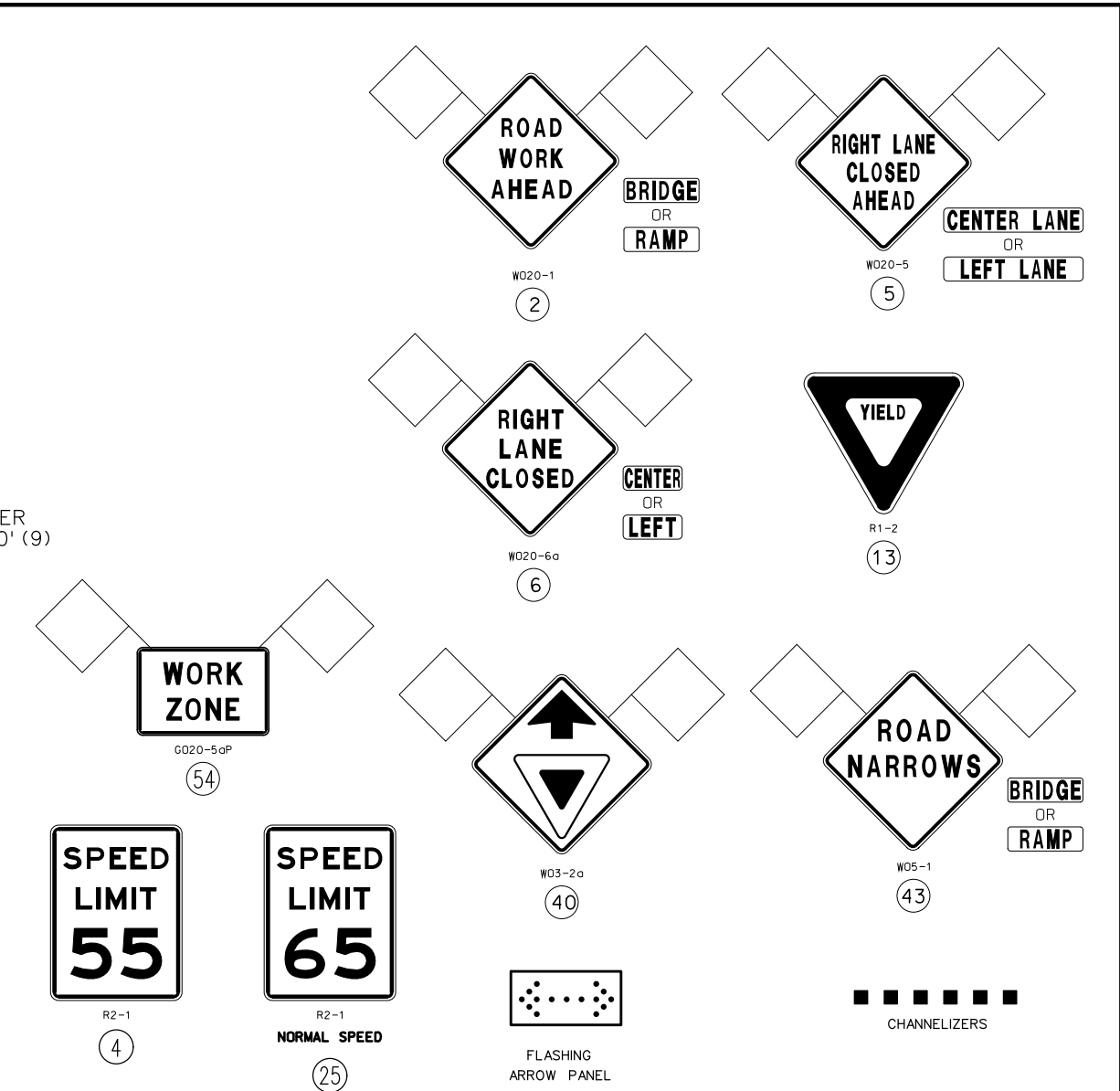
- (1). SEE TRAFFIC CONTROL SHEET 1 FOR WORK ZONE SPEED LIMIT GUIDELINES.
- (2). SEE TRAFFIC CONTROL SHEET 1 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.
- (3). REMOVE AND/OR MODIFY EXISTING PAVEMENT MARKING AS NEEDED.
- (4). TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM LANE CLOSURES.
- (5). SIGN (43) REQUIRED WHEN RAMP WIDTH IS REDUCED.
- (6). FIVE DEVICE MINIMUM.
- (7). FOR WORK ZONES WHERE DEVICES ARE IN PLACE OVERNIGHT, USE TRIM-LINE CHANNELIZERS.



LANE CLOSURE  
EXIT RAMP  
TEMPORARY  
TRAFFIC CONTROL  
SHEET 6 OF 9



LANE CLOSURE  
ENTRANCE RAMP AREAS

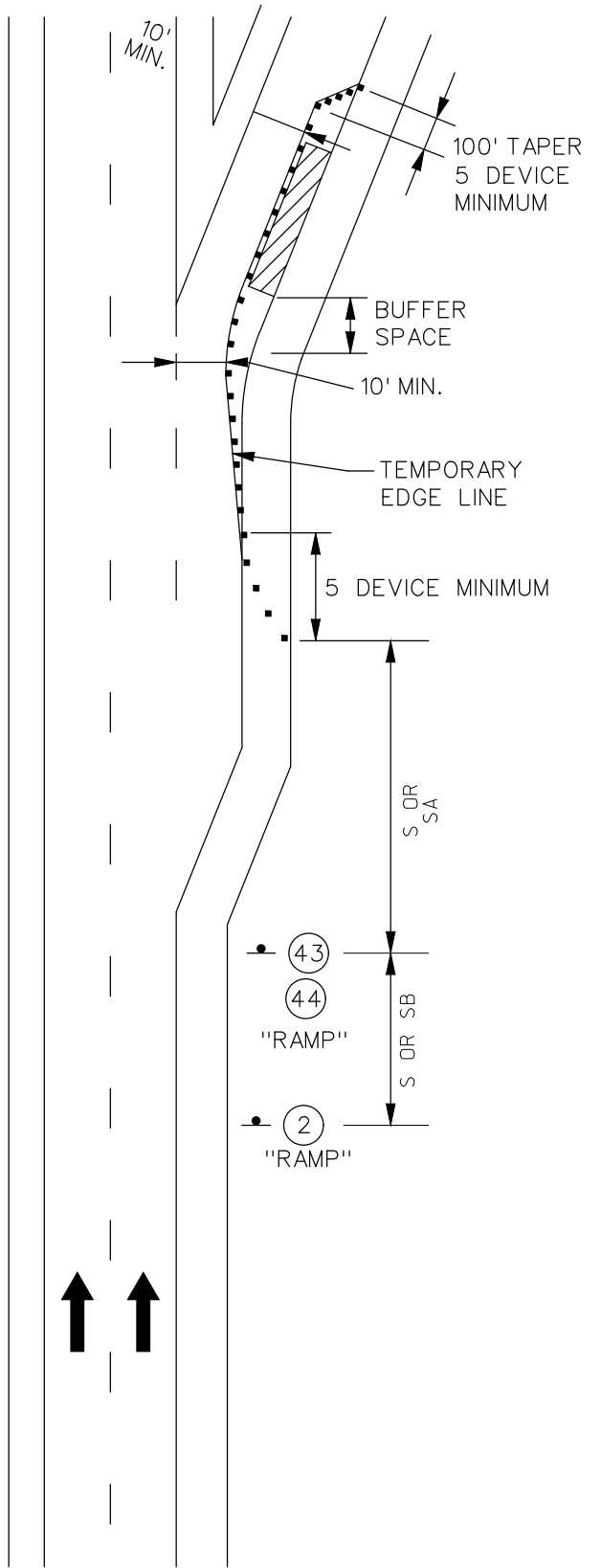


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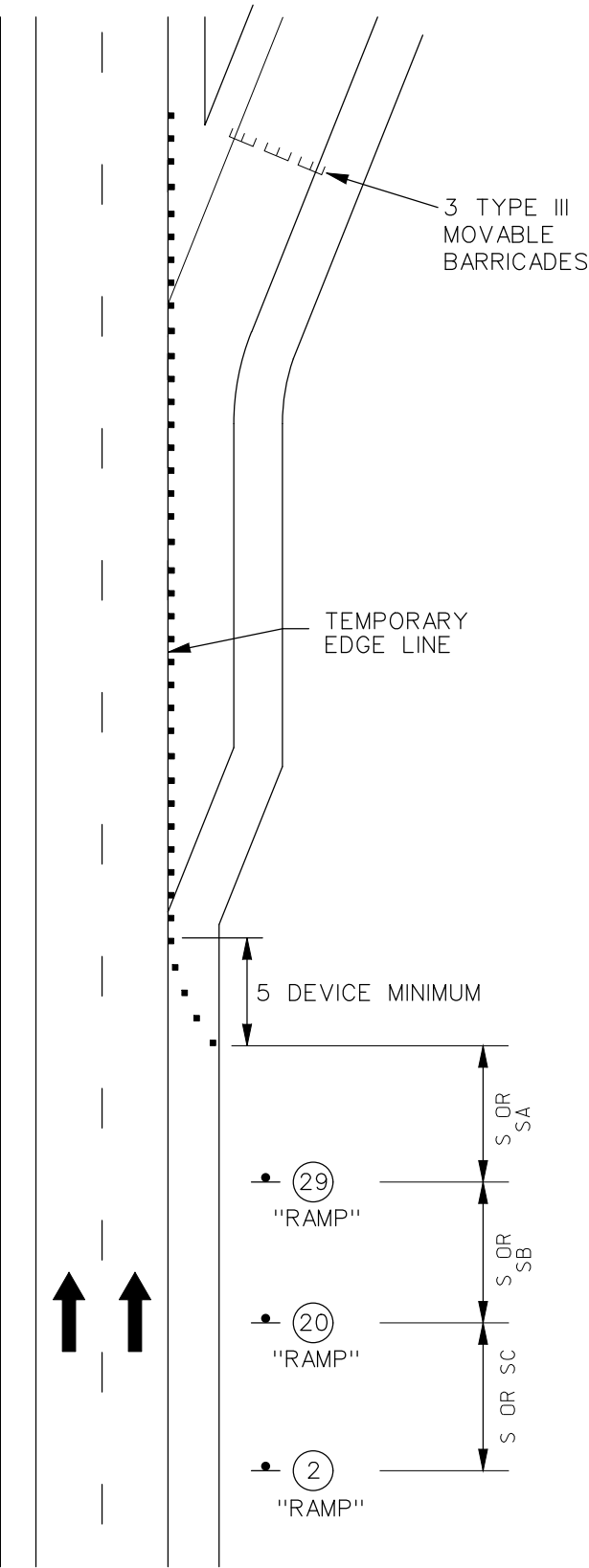
- (1). SEE TRAFFIC CONTROL SHEET 1 FOR WORK ZONE SPEED LIMIT GUIDELINES.
- (2). SEE TRAFFIC CONTROL SHEET 1 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.
- (3). REMOVE AND/OR MODIFY EXISTING PAVEMENT MARKING AS NEEDED.
- (4). TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM LANE CLOSURES.
- (5). FOR RAMP WITH SHARP CURVES OR MULTIPLE LANES, RAMP SIGNS MAY BE PLACED ON BOTH SIDES OF THE RAMP.
- (6). SIGN (43) REQUIRED WHEN RAMP WIDTH IS REDUCED.
- (7). SIGN (13) SHOULD BE PLACED ON THE RAMP TO PROVIDE ADEQUATE VISIBILITY OF MAINLINE TRAFFIC.
- (8). THE LOCATION OF THE SIGN SEQUENCE AND MERGE TAPER SHOULD BE ADJUSTED SO THAT THE ARROW PANEL LOCATION IS NOT CONFUSING TO MOTORISTS ON THE RAMP.
- (9). FOR WORK ZONES WHERE DEVICES ARE IN PLACE OVERNIGHT, USE TRIM-LINE CHANNELIZERS.

STATE OF MISSOURI DEBORAH JILL HUFFMAN NUMBER PE-202003395 PROFESSIONAL ENGINEER <small>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</small>		DATE PREPARED	
		6/11/2015	
ROUTE	STATE	DISTRICT	SHEET NO.
I-435	MO	KC	10
COUNTY			
JACKSON			
JOB NO.			
J413038C			
CONTRACT ID.			
PROJECT NO.			
BRIDGE NO.			
DESCRIPTION	DATE		
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION			
105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-278-6636)			

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

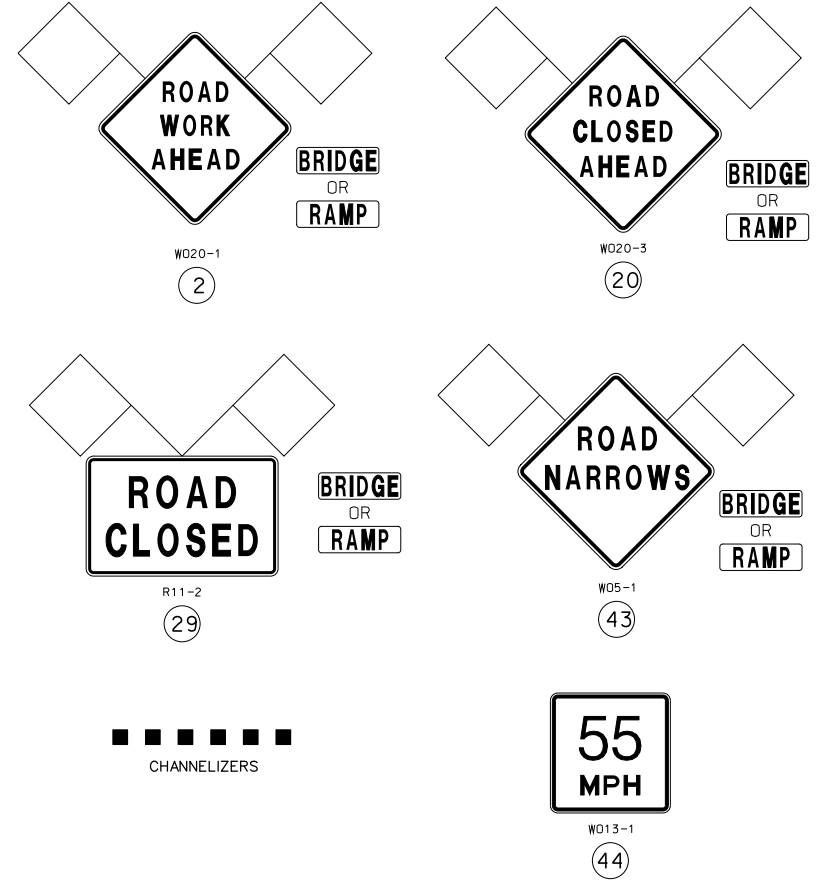


PARTIAL LANE



ENTIRE RAMP

LANE CLOSURE  
PARTIAL AND TOTAL RAMP CLOSURE



- 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). TEMPORARY PAVEMENT MARKING OPTIONAL FOR SHORT TERM OPERATIONS.

PARTIAL OR TOTAL  
RAMP CLOSURE  
TEMPORARY  
TRAFFIC CONTROL  
SHEET 8 OF 9

STATE OF MISSOURI  
DEBORAH JILL HUFFMAN  
NUMBER PE-2002003395  
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 6/11/2015

ROUTE I-435	STATE MO
DISTRICT KC	SHEET NO. 11

COUNTY JACKSON  
JOB NO. J413038C  
CONTRACT ID.

PROJECT NO.  
BRIDGE NO.

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

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

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