

F:\2022\00001-00500\022-00450\40-Design\Microstation\J7P3548\plan_sheets\1 Title\001_TITLE_J7P3548_ITITLESHEET.dgn 4:26:12 PM 3/5/2024

TEMPORARY EROSION CONTROL					
SHEET	STA.	STA.	LOCATION	SILT FENCE (FT.)	SED. REM. (C.Y.)
4	418+00.00	418+25.00	ROUTE 76 EB	92	1
4	423+37.00	423+62.00	ROUTE 76 WB	92	1
TOTAL				184	2

SEED AND MULCH					
SHEET	STA.	STA.	LOCATION	COOL SEASON SEEDING (AC.)	MULCH (AC.)
4	418+00.00	418+25.00	ROUTE 76 EB	0.1	0.1
4	423+37.00	423+62.00	ROUTE 76 WB	0.1	0.1
TOTAL				0.2	0.2

ROCK BLANKET						
SHEET	STA.	STA.	LOCATION	PLACING ROCK BLANKET (CY)	SEPARATION GEOTEXTILE (SY)	REMARKS
4	418+00.00	418+25.00	ROUTE 76 EB	118	177	
4	423+37.00	423+62.00	ROUTE 76 WB	118	179	
TOTAL				236	356	

REMOVAL OF IMPROVEMENTS				
SHEET	STA.	STA.	LOCATION	DESCRIPTION
4	418+00.00	418+25.00	ROUTE 76 EB	118 CY ROCK BLANKET
4	423+37.00	423+62.00	ROUTE 76 WB	118 CY ROCK BLANKET
1 LUMP SUM				

CONTRACTOR SHALL BE ALLOWED TO BREAK UP EXISTING ROCK BLANKET INTO SMALLER SIZES TO BE ABLE TO AID IN REMOVAL. NO EXPLOSIVES MAY BE USED.

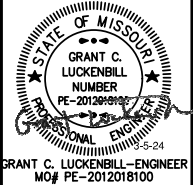
RAILROAD PLAN SUBMITTAL
1 LUMP SUM

CONSTRUCTION FENCING
1 LUMP SUM

SEE JOB SPECIAL PROVISIONS FOR DETAILS

MOBILIZATION
1 LUMP SUM

SUMMARY OF QUANTITIES
SHEET 1 OF 2



GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED
3/5/2024

ROUTE 76	STATE MO
DISTRICT SW	SHEET NO. 3

COUNTY
TANEY

JOB NO.
J7P3548

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A54341/A54351

DESCRIPTION									
DATE									

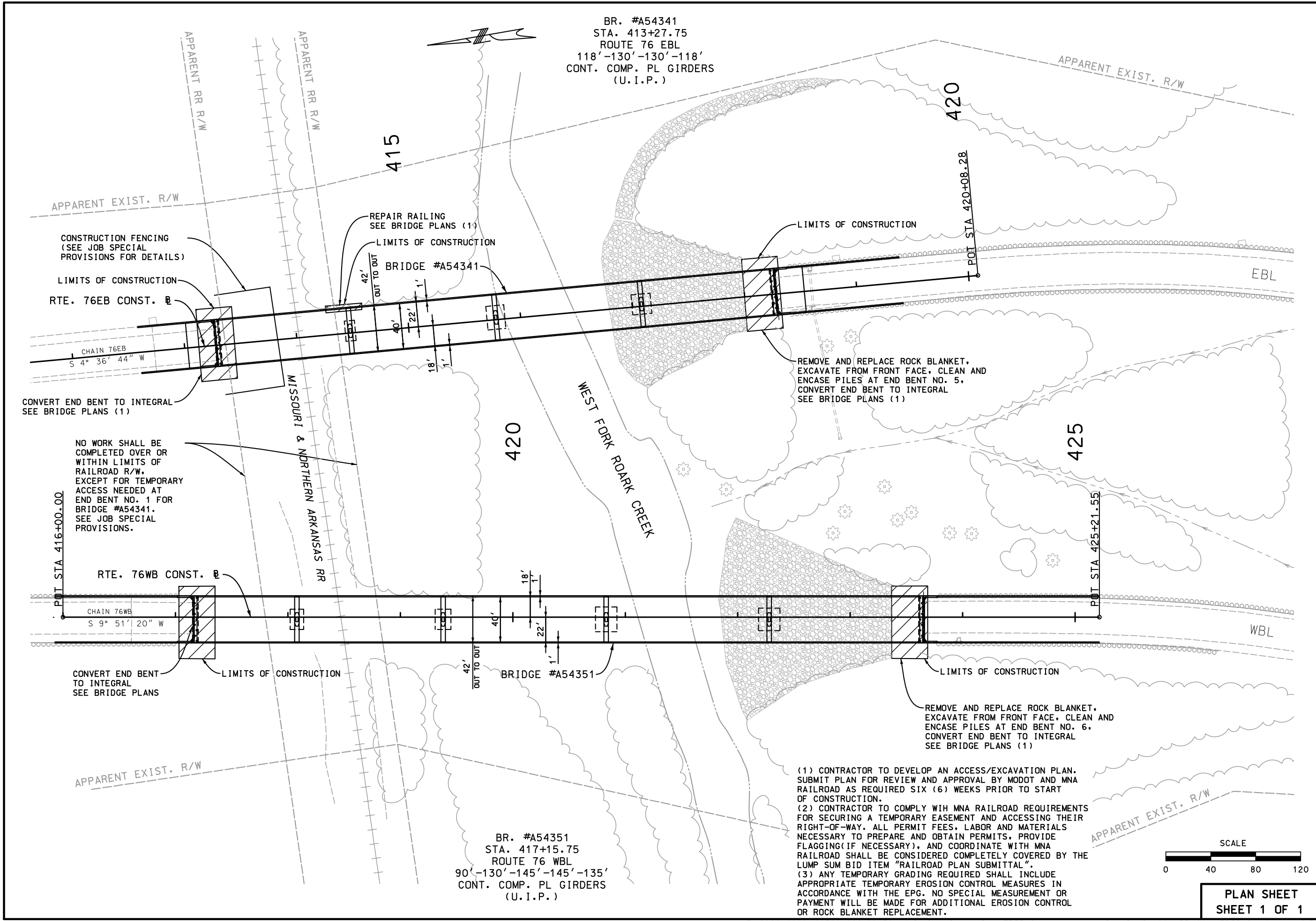
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION



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



550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592



GRANT C. LUCKENBILL
ENGINEER
MO# PE-2012018100

DATE PREPARED 3/5/2024	
ROUTE 76	STATE MO
DISTRICT SW	SHEET NO. 4
COUNTY TANEY	
JOB NO. J7P3548	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A54341/A54351	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

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

PROJECT COORDINATE INFORMATION

COORDINATE SYSTEM

·MO. SPC, CENTRAL ZONE

HORIZONTAL DATUM

·NAD 83 2011

VERTICAL DATUM

·NAVD 88

GEOID MODEL

·GEOID 12B

ELEVATIONS DETERMINED BY

·MODOT GNSS

PROJECT PROJECTION FACTOR

·1

REFERENCE CONTROL INFORMATION

COORDINATE SYSTEM

·MISSOURI STATE PLANE

CONTROL STATION

·N/A

DESIGNATION

·MODOT SPRINGFIELD CORS ARP

CORS_ID

·MOSF

PID

·DL5388

LATITUDE

·37 14 30.33454 N

LONGITUDE

·093 13 47.54333 W

NORTHING (M)

·

EASTING (M)

·

ZONE

·CENTRAL

PROJECT AVERAGE GRID FACTOR

·0.999940704

EXAMPLE OF PROJECT COORDINATE TO S.P.C.

PROJECT NORTHING X AVERAGE GRID FACTOR
= STATE PLANE NORTHING

PROJECT EASTING X AVERAGE GRID FACTOR
= STATE PLANE EASTING

EXAMPLE: CONTROL POINT #500
N 457492.888 X 0.999940704 = N 457465.761
E 1407792.368 X 0.999940704 = E 1407708.892

LINEAR UNIT CONVERSION

1 METER = 3.280833333 US SURVEY FEET (USFT)

COORDINATE POINT LISTING								
SHEET NO	STATION	LOCATION	OFFSET (USFT)	MODIFIED STATE PLANE (GROUND)			DESCRIPTION	GPK POINT ID
				NORTHING (US SURVEY FT)	EASTING (US SURVEY FT)	ELEVATION (US SURVEY FT)		
PROJECT CONTROL POINTS								
				312905.1030	1404854.4859	941.35	5/8" REBAR W/PLASTIC CAP	CP2
76 EB (CONSTRUCTION E)								
	410+00.00	E 76 EBL		314306.0488	1404995.6959		BEGIN CHAIN 76EB	100
	420+08.28	E 76 EBL		313301.0338	1404914.6198		END CHAIN 76EB	101
76 WB (CONSTRUCTION E)								
	416+00.00	E 76 WBL		314154.5598	1404754.5458		BEGIN CHAIN 76WB	200
	425+21.55	E 76 WBL		313246.6132	1404596.8075		END CHAIN 76WB	201

STATE OF MISSOURI

GRANT C. LUCKENBILL

NUMBER

PE-2012018100

PROFESSIONAL ENGINEER

EXPIRATION DATE 06-24

GRANT C. LUCKENBILL-ENGINEER

MO# PE-2012018100

DATE PREPARED

3/5/2024

ROUTE

76

STATE

MO

DISTRICT

SW

SHEET NO.

5

COUNTY

TANEY

JOB NO.

J7P3548

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

A54341/A54351

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

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

MODOT

olsson

550 ST. LOUIS STREET

SPRINGFIELD, MO 65806

CERTIFICATE OF

AUTHORITY NO. 001592

COORDINATE POINT SHEET

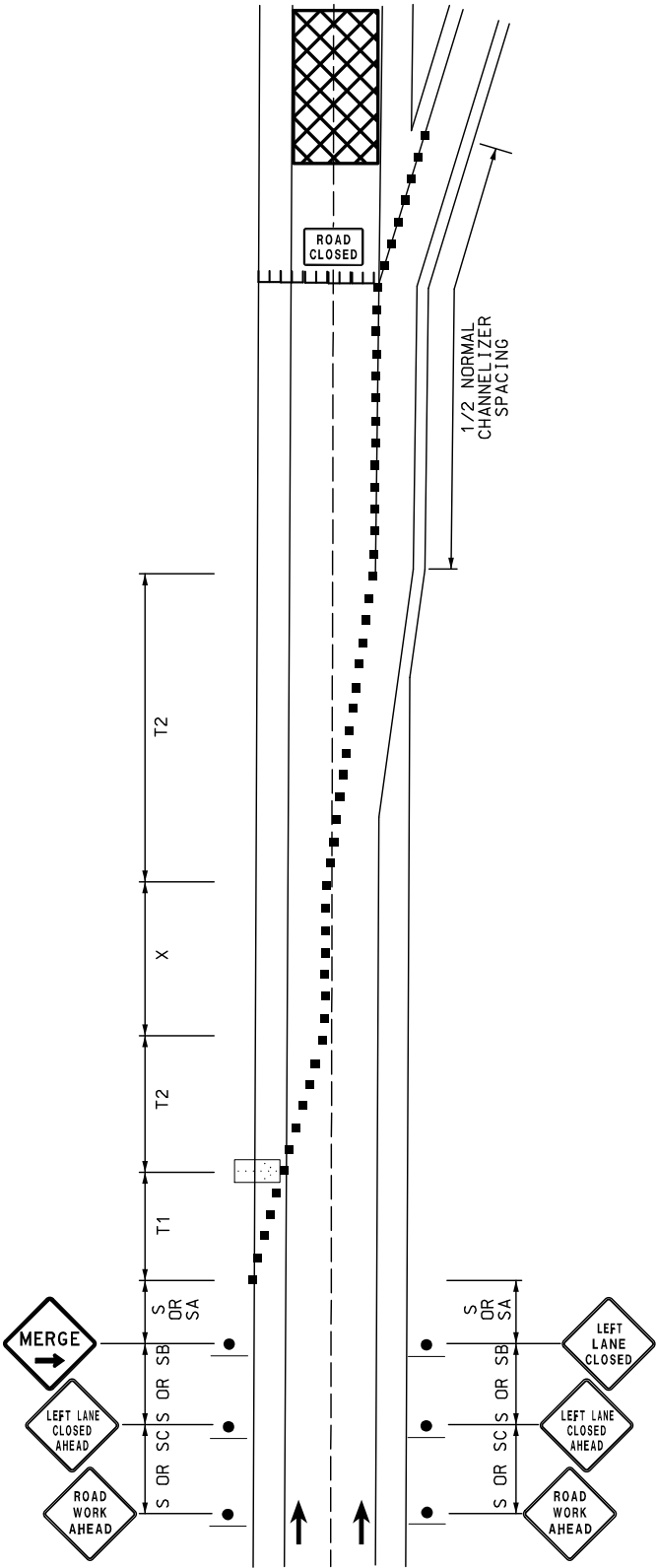
SHEET 1 OF 1

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SPEED	SIGN SPACING (FT.)		TAPER LENGTH (FT.)		RECOMMENDED BUFFER LENGTH (FT.) (B)	CHANNELIZER SPACING (FT.)	
	UNDIVIDED (S)	DIVIDED (S)	SHOULDER (1) (T1)	LANE (2) (T2)		TAPERS	BUFFER/ WORK AREAS
0-35	200	200	70	245	250	35	40
40-45	350	500	150	540	360	40	80
50-55	500	1000	185	660	495	50	80
60-70	1000	SA-1000 SB-1500 SC-2640	235	840	730	60	120
1. SHOULDER TAPER LENGTH BASED ON 10 FT. (STANDARD SHOULDER WIDTH). 2. LANE TAPER LENGTH BASED ON 12 FT. (STANDARD LANE WIDTH) OFFSET.							

NOTES:

1. ALWAYS USE ADVANCE WARNING SIGNS, FLASHING ARROW PANELS, AND CHANNELIZERS
2. USE EPG 616.33SD (TA-33SD) SHORT DURATION LANE CLOSURE ON A MULTI-LANE HIGHWAY FOR SETTING ADVANCED WARNING SIGNS AND CHANNELIZERS.
3. PLACE CHANNELIZERS IMMEDIATELY BEFORE AND AFTER THE EXIT GORE AREA AT $\frac{1}{2}$ THE NORMAL SPACING.



TA-43B RAMP BY-PASS

STATE OF MISSOURI

GRANT C. LUCKENBILL

NUMBER

PE-2012080902

PROFESSIONAL ENGINEER

EXPIRATION DATE 08-24

GRANT C. LUCKENBILL-ENGINEER

MO# PE-2012018100

DATE PREPARED

3/5/2024

ROUTE

76

STATE

MO

DISTRICT

SW

SHEET NO.

7

COUNTY

TANEY

JOB NO.

J7P3548

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

A54341/A54351

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MODOT

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

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

olsson

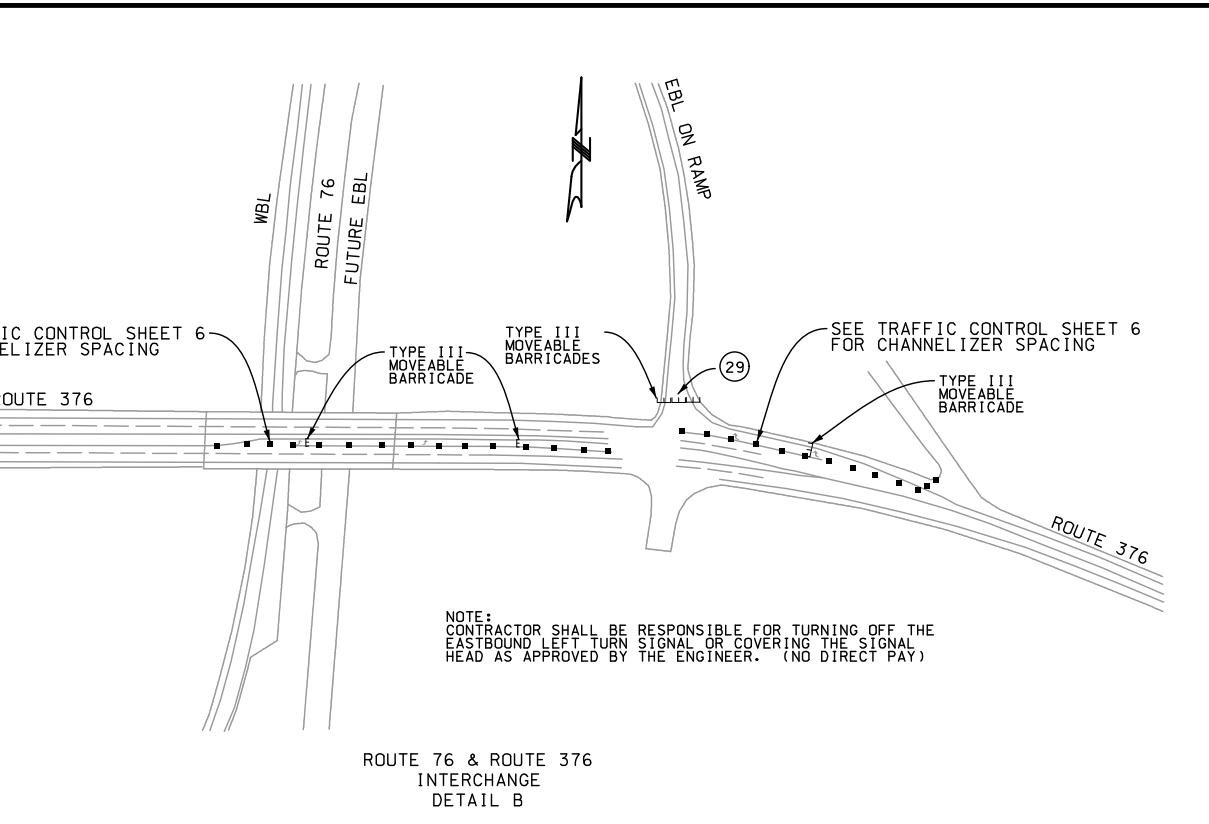
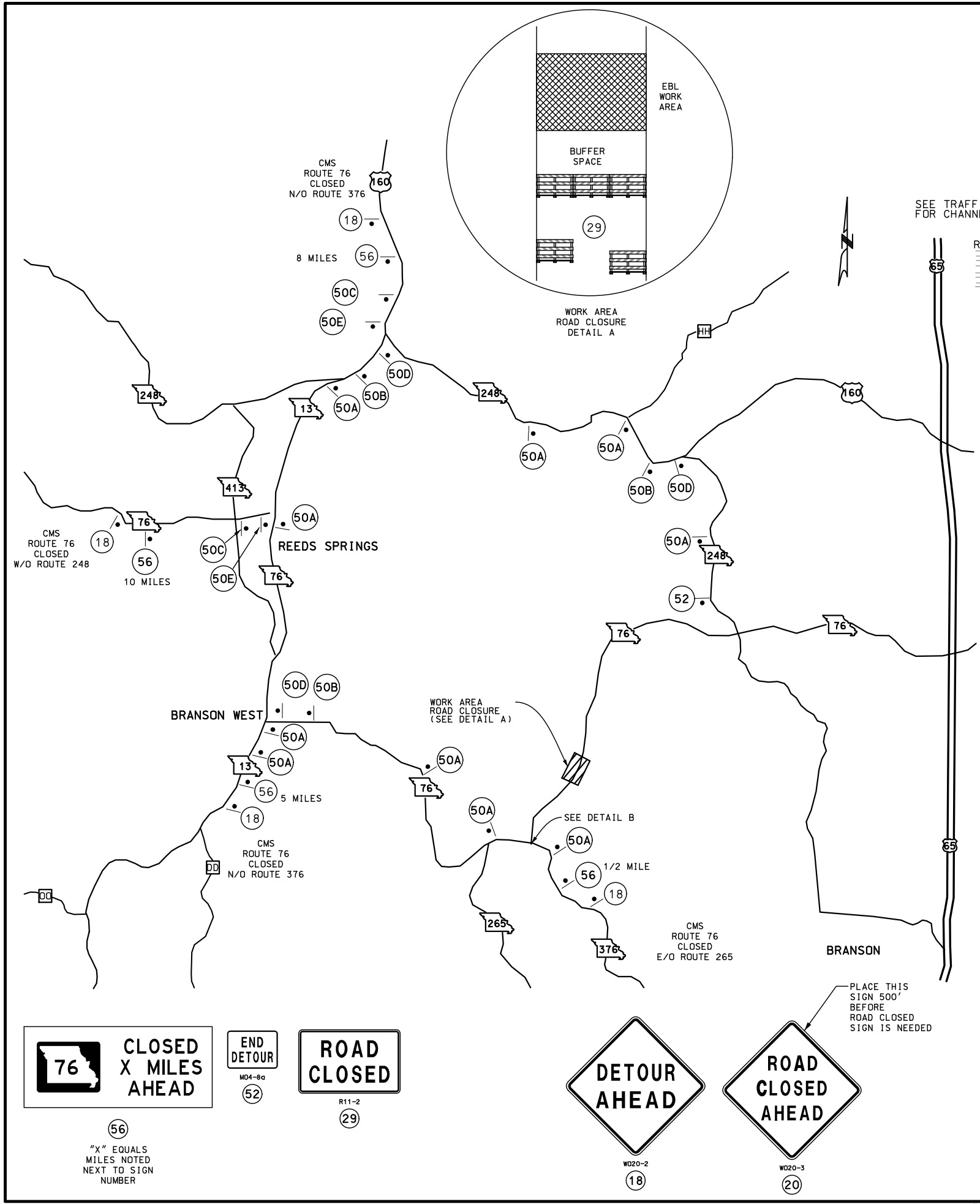
550 ST. LOUIS STREET

SPRINGFIELD, MO 65806

CERTIFICATE OF

AUTHORITY NO. 001592

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CLOSED X MILES AHEAD

56

"X" EQUALS MILES NOTED NEXT TO SIGN NUMBER

END DETOUR

MD4-8a

52

ROAD CLOSED

R11-2

29

DETOUR AHEAD

W20-2

18

ROAD CLOSED AHEAD

W20-3

20

DETOUR	DETOUR	DETOUR	DETOUR	DETOUR	DETOUR	DETOUR
MD4-8	MD4-8	MD4-8	MD4-8	MD4-8	MD4-8	MD4-8
EAST	EAST	EAST	EAST	EAST	EAST	EAST
M3-2	M3-2	M3-2	M3-2	M3-2	M3-2	M3-2
76	76	76	76	76	76	76
M1-5	M1-5	M1-5	M1-5	M1-5	M1-5	M1-5
↑	↗	↖	→	←	↙	↘
M6-3	M5-1R	M5-1L	M6-1	M6-1	M6-2L	M6-2R
50A	50B	50C	50D	50E	50F	50G

ROUTE 76 EBL DETOUR
TRAFFIC CONTROL
SHEET 3 OF 6

STATE OF MISSOURI
GRANT C. LUCKENBILL
NUMBER
PE-2012080902
PROFESSIONAL ENGINEER
MO# PE-201208100

DATE PREPARED
3/5/2024

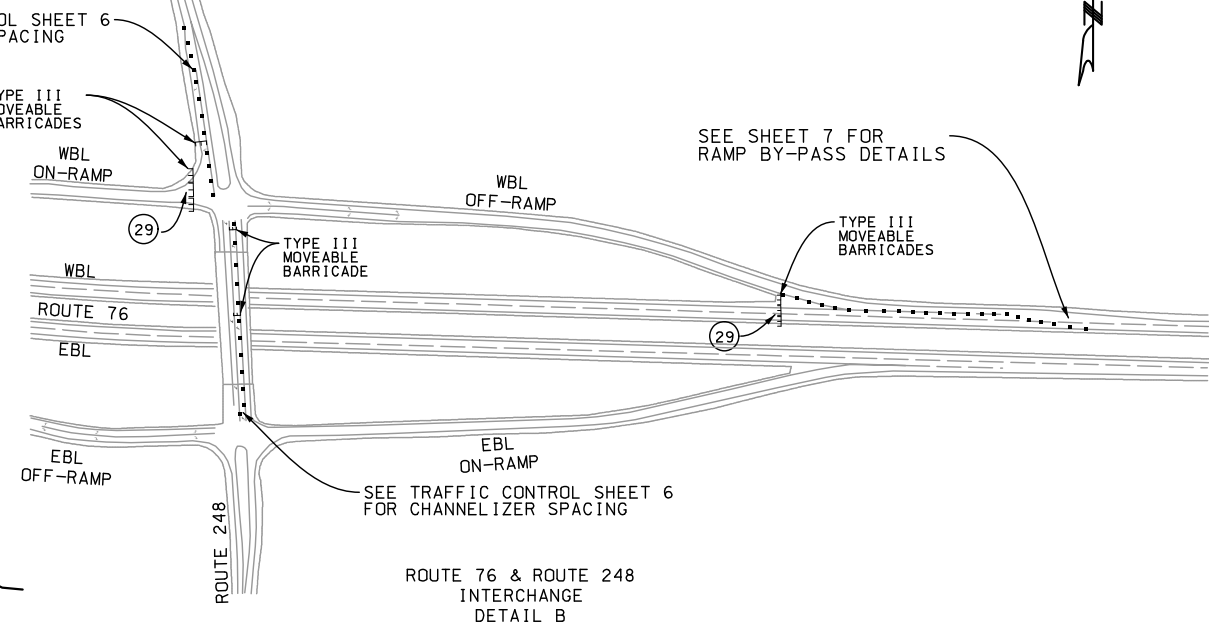
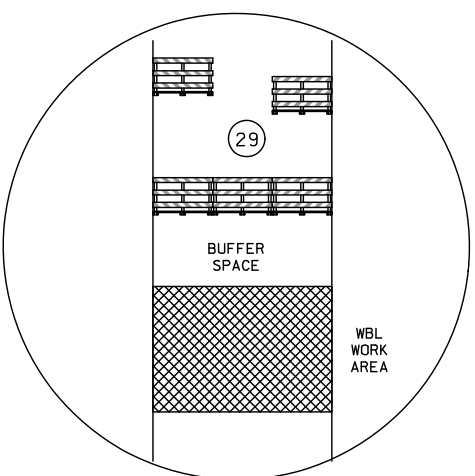
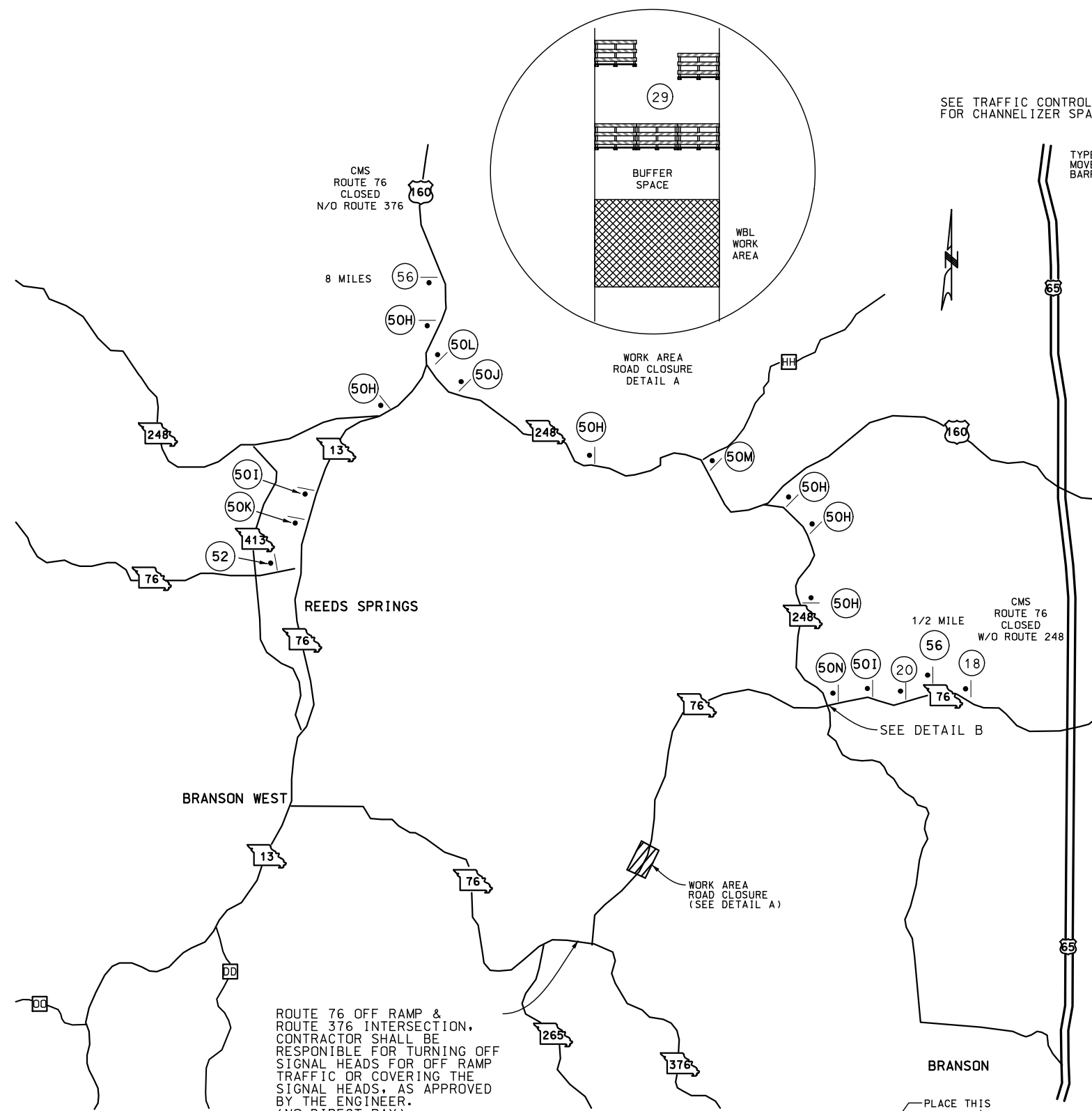
ROUTE 76	STATE MO
DISTRICT SW	SHEET NO. 8
COUNTY TANEY	
JOB NO. J7P3548	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A54341/A54351	

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

REV.



56

"X" EQUALS MILES NOTED NEXT TO SIGN NUMBER

52

29

18

20

DETOUR	DETOUR	DETOUR	DETOUR	DETOUR	DETOUR	DETOUR
MD4-8	MD4-8	MD4-8	MD4-8	MD4-8	MD4-8	MD4-8
WEST	WEST	WEST	WEST	WEST	WEST	WEST
M3-4	M3-4	M3-4	M3-4	M3-4	M3-4	M3-4
76	76	76	76	76	76	76
M1-5	M1-5	M1-5	M1-5	M1-5	M1-5	M1-5
↑	↗	↖	→	←	↙	↘
M6-3	M5-1R	M5-1L	M6-1	M6-1	M6-2L	M6-2R
50H	50I	50J	50K	50L	50M	50N

ROUTE 76 WBL DETOUR
TRAFFIC CONTROL
SHEET 4 OF 6

STATE OF MISSOURI
GRANT C. LUCKENBILL
NUMBER PE-2012918100
PROFESSIONAL ENGINEER
MO# PE-2012918100

DATE PREPARED
3/5/2024

ROUTE 76	STATE MO
DISTRICT SW	SHEET NO. 9

COUNTY
TANEY

JOB NO.
J7P3548

CONTRACT ID.

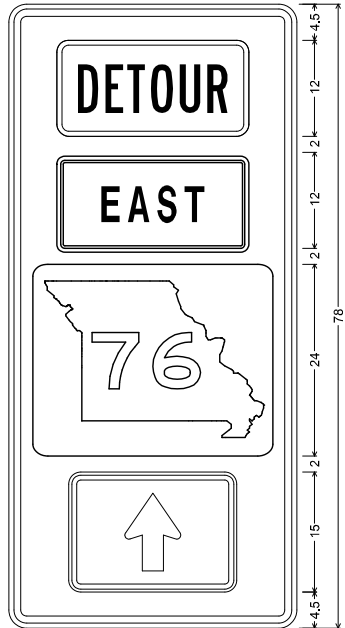
PROJECT NO.

BRIDGE NO.
A54341/A54351

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

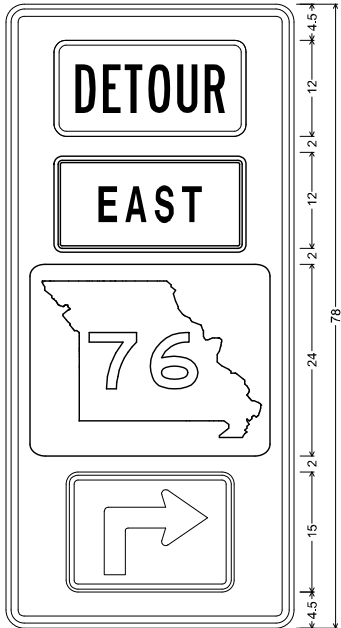
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592



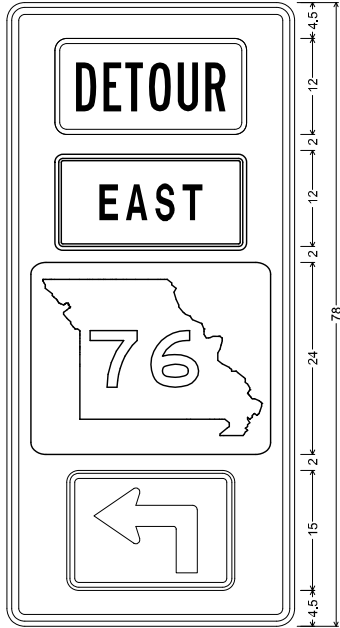
MO4-11-36 SHF-FLAT SHEET FLUORESCENT;
2,250" Radius, 0,875" Border, 0,625" Indent, Black on Orange;
Table of letter and object lefts.

6,000	SIGN NO.	-
6,000	STATION	-
3,000	ROADWAY	-
7,500		



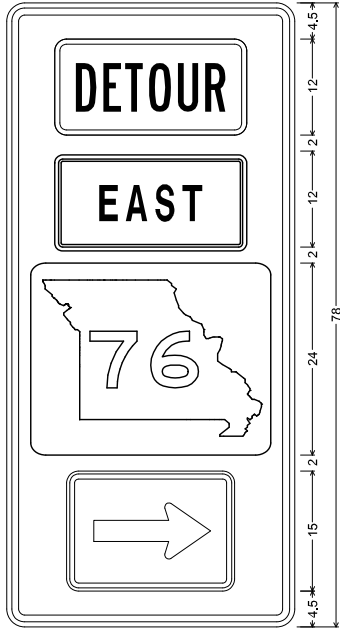
MO4-11-36 SHF-FLAT SHEET FLUORESCENT;
2,250" Radius, 0,875" Border, 0,625" Indent, Black on Orange;
Table of letter and object lefts.

6,000	SIGN NO.	-
6,000	STATION	-
3,000	ROADWAY	-
7,500		



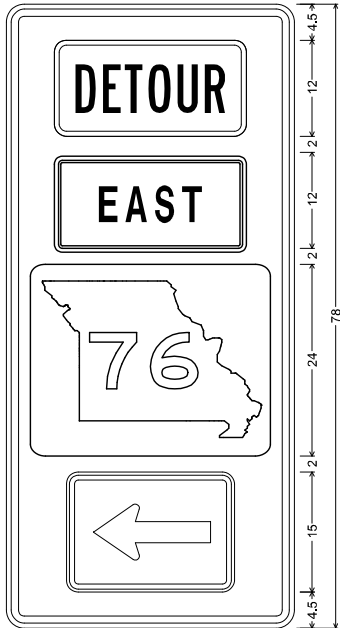
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2,250" Radius, 0,875" Border, 0,625" Indent, Black on Orange;
Table of letter and object lefts.

6,000	SIGN NO.	-
6,000	STATION	-
3,000	ROADWAY	-
7,500		



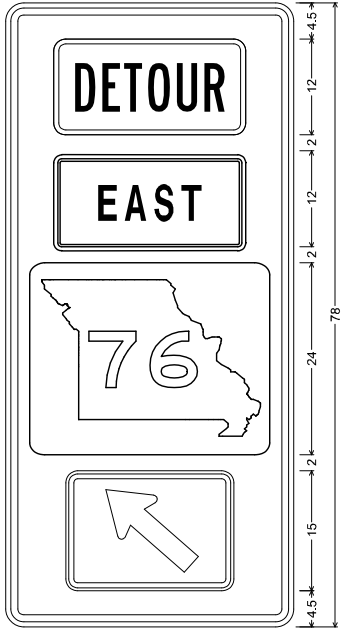
MO4-11-36 SHF-FLAT SHEET FLUORESCENT;
2,250" Radius, 0,875" Border, 0,625" Indent, Black on Orange;
Table of letter and object lefts.

6,000	SIGN NO.	-
6,000	STATION	-
3,000	ROADWAY	-
7,500		



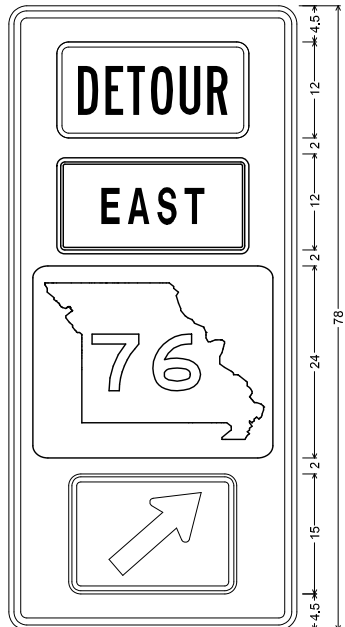
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2,250" Radius, 0,875" Border, 0,625" Indent, Black on Orange;
Table of letter and object lefts.

6,000	SIGN NO.	-
6,000	STATION	-
3,000	ROADWAY	-
7,500		



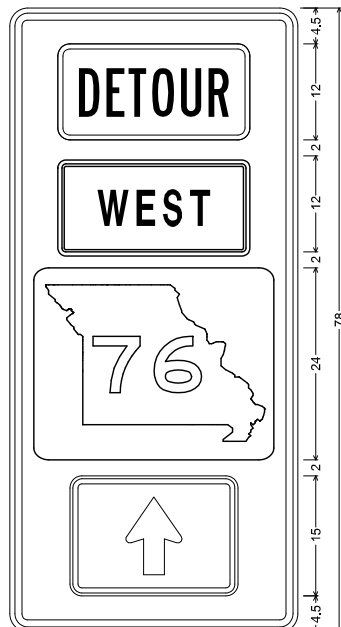
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2,250" Radius, 0,875" Border, 0,625" Indent, Black on Orange;
Table of letter and object lefts.

6,000	SIGN NO.	-
6,000	STATION	-
3,000	ROADWAY	-
7,500		



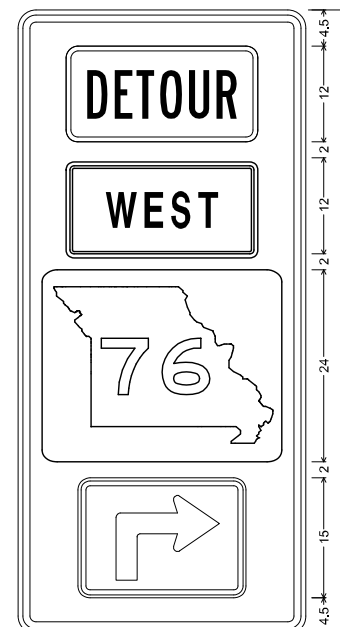
MO4-11-36 SHF-FLAT SHEET FLUORESCENT;
2,250" Radius, 0,875" Border, 0,625" Indent, Black on Orange;
Table of letter and object lefts.

6,000	SIGN NO.	-
6,000	STATION	-
3,000	ROADWAY	-
7,500		



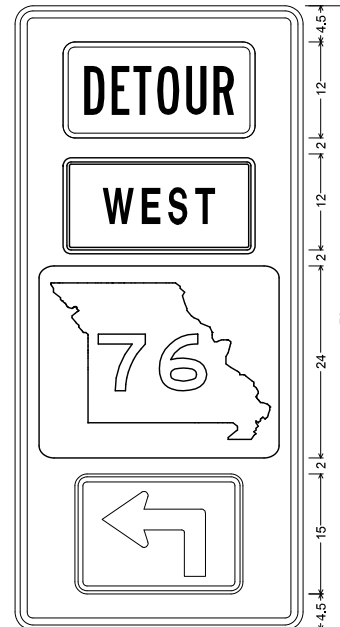
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2,250" Radius, 0,875" Border, 0,625" Indent, Black on Orange;
Table of letter and object lefts.

6,000	SIGN NO.	-
6,000	STATION	-
3,000	ROADWAY	-
7,500		



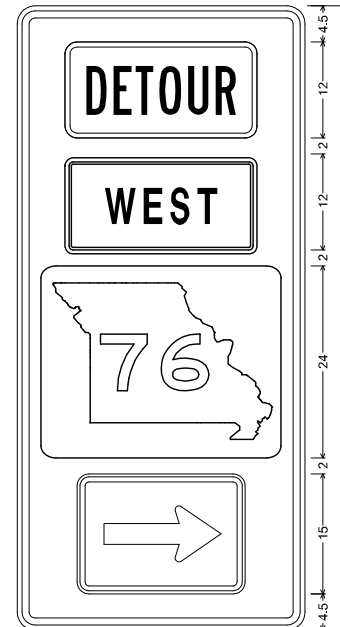
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2,250" Radius, 0,875" Border, 0,625" Indent, Black on Orange;
Table of letter and object lefts.

6,000	SIGN NO.	-
6,000	STATION	-
3,000	ROADWAY	-
7,500		



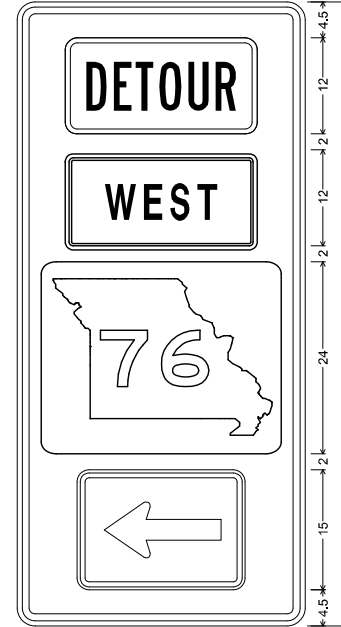
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2,250" Radius, 0,875" Border, 0,625" Indent, Black on Orange;
Table of letter and object lefts.

6,000	SIGN NO.	-
6,000	STATION	-
3,000	ROADWAY	-
7,500		



MO4-11-36 SHF-FLAT SHEET FLUORESCENT;
2,250" Radius, 0,875" Border, 0,625" Indent, Black on Orange;
Table of letter and object lefts.

6,000	SIGN NO.	-
6,000	STATION	-
3,000	ROADWAY	-
7,500		



MO4-11-36 SHF-FLAT SHEET FLUORESCENT;
2,250" Radius, 0,875" Border, 0,625" Indent, Black on Orange;
Table of letter and object lefts.

6,000	SIGN NO.	-
6,000	STATION	-
3,000	ROADWAY	-
7,500		

TRAFFIC CONTROL
SHEET 5 OF 6

STATE OF MISSOURI

GRANT C. LUCKENBILL

NUMBER

PE-2012898100

PROFESSIONAL ENGINEER

06-24

GRANT C. LUCKENBILL-ENGINEER

MO# PE-2012018100

DATE PREPARED
3/5/2024

ROUTE
76

DISTRICT
SW

STATE
MO

SHEET NO.
10

COUNTY
TANEY

JOB NO.
JTP3548

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

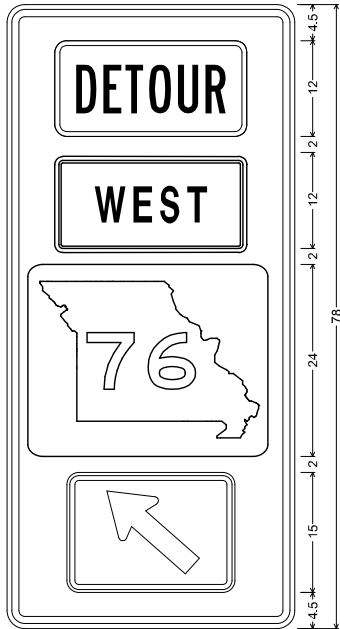
MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

MODOT

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

olsson

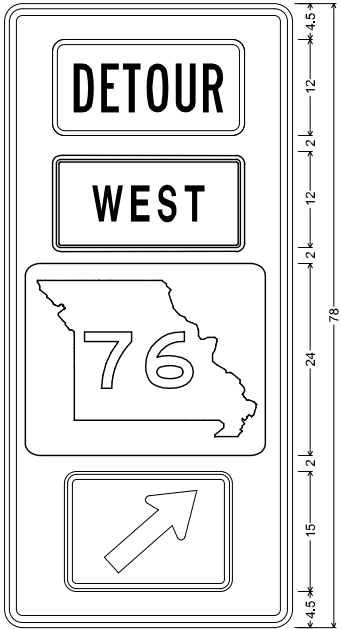
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592



MO4-11-36 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on Orange;
Table of letter and object lefts.

6.000
6.000
3.000
7.500

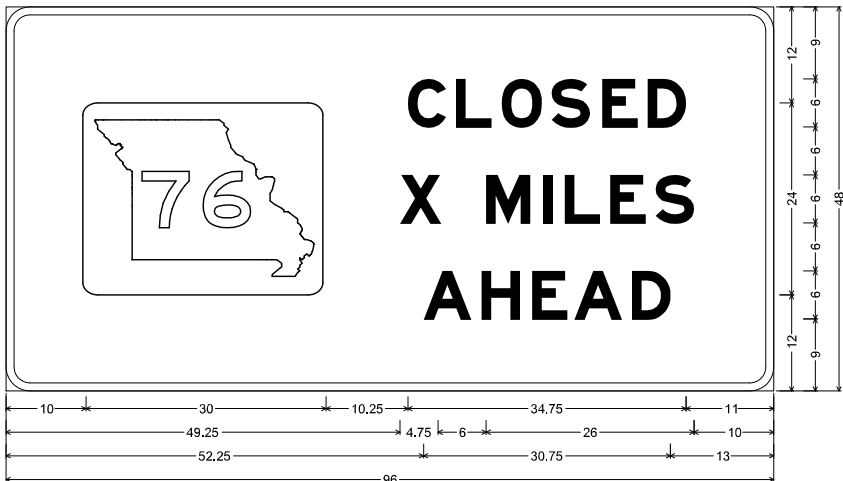
SIGN NO.	.
STATION	.
ROADWAY	.



MO4-11-36 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on Orange;
Table of letter and object lefts.

6.000
6.000
3.000
7.500

SIGN NO.	.
STATION	.
ROADWAY	.

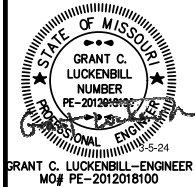


MO4-13-96 SHF-FLAT SHEET FLUORESCENT; 3.000" Radius, 1.000" Border, Black on Orange;
[CLOSED] E Mod; [2 MILES] E Mod; [AHEAD] E Mod;
Table of letter and object lefts.

	C	L	O	S	E	D
10.000	50.250	56.250	62.000	68.250	74.500	80.250
X	M	I	L	E	S	
49.250	60.000	67.125	69.875	75.500	81.250	
A	H	E	A	D		
52.250	59.375	65.750	71.000	78.250		

SIGN NO.	.
STATION	.
ROADWAY	.

NOTE: "X" SHOULD
MATCH THE MILES
INDICATED IN PLANS
(1/2, 5, 8, 10)



DATE PREPARED 3/5/2024	
ROUTE 76	STATE MO
DISTRICT SW	SHEET NO. 11
COUNTY TANEY	
JOB NO. JTP3548	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

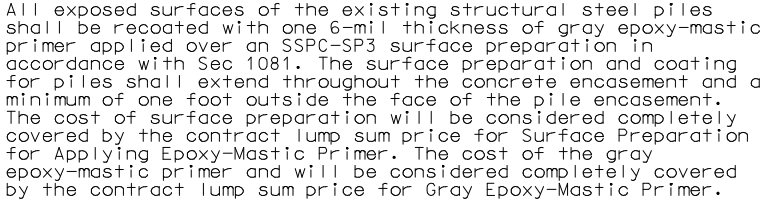
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

MoDOT

olsson

550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

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CERTIFICATE OF
AUTHORITY NO. 001592



Notes:

Fabricated structural steel shall be ASTM A709 Grade 50.

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

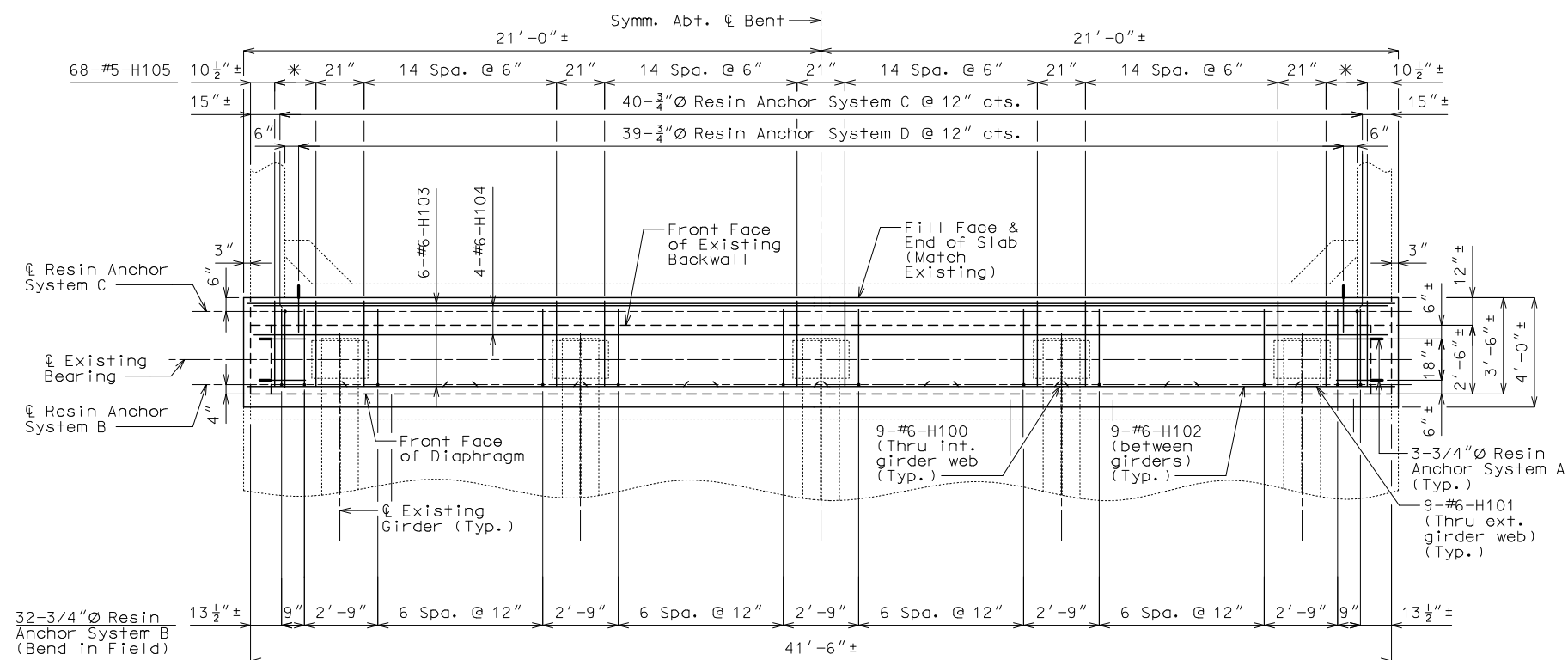
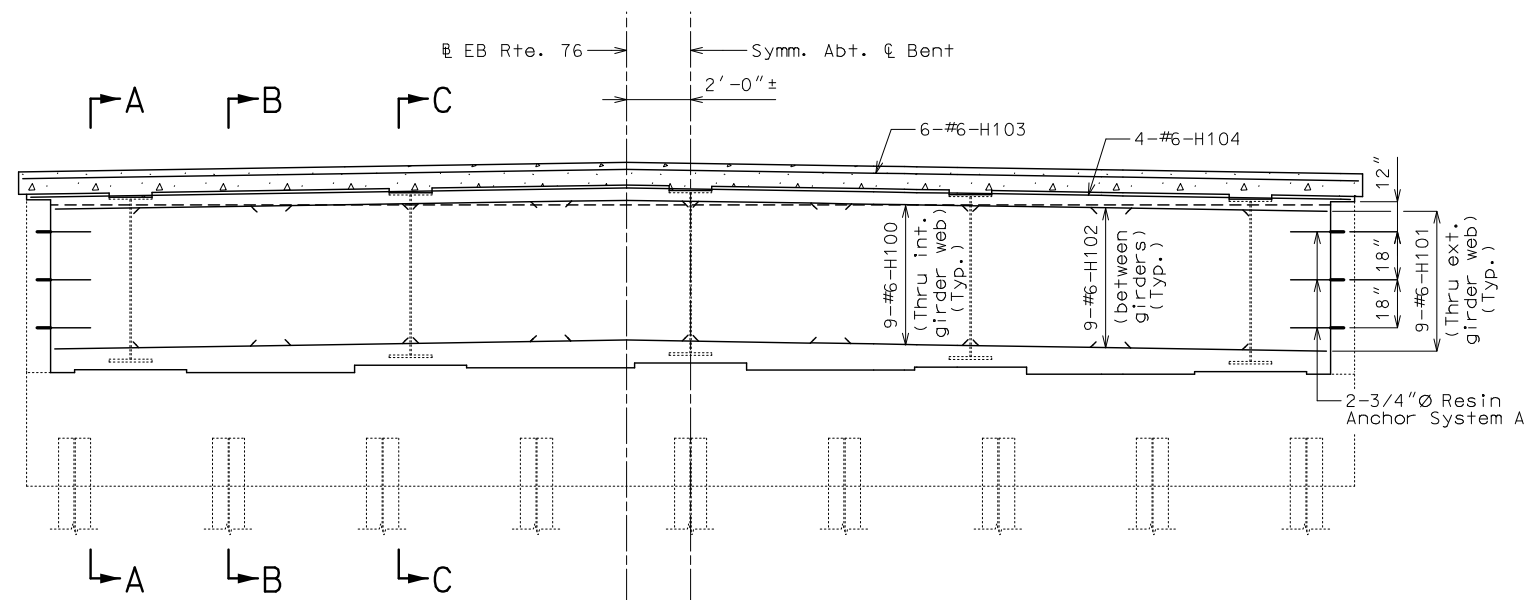
Only one pile shall be repaired at a time.

Instructions for Pile Plating:

- (1) Number of 3" spaces shall be determined in the field to extend past the extents of the deteriorated area.
- (2) Plate length shall be determined in the field.
- (3) Pile Plating is required when section loss exceeds 40%. Limits of Pile Plating shall be determined by the engineer.
- (4) Use plates as templates for field drilling holes in existing pile. Place bolts snug tight as drilled per each. High-strength tightening shall begin after all bolts are installed per flange or web.

PILE REPAIR

		GRANT C. LUCKENBILL - ENGINEER MO# PE-2012018100	
DATE PREPARED 3/5/2024			
ROUTE 76		STATE MO	
DISTRICT BR		SHEET NO. 2	
COUNTY TANEY			
JOB NO. J7P3548			
CONTRACT ID.			
PROJECT NO.			
BRIDGE NO. A54341			
DESCRIPTION			
DATE			
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION			
		105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		550 ST. LOUIS STREET SPRINGFIELD, MO 65806 CERTIFICATE OF AUTHORITY NO. 001592	



DETAILS OF END BENT NO. 1

Notes:

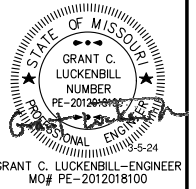
For quantities, see Estimated Quantities Table on Sheet No. 1.

For Sections A-A, B-B, and C-C see Sheet No. 4.

Clean existing backwall, top of beam, all structural steel, and bearings prior to pouring diaphragm.

For details and reinforcement of barrier, see
Sheet No. 8.

For details of Resin Anchor Systems A, B, C, & D,
see Sheet No. 7.

DATE PREPARED
6/5/2024

ROUTE 76	STATE MO
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STRICT	SHEET NO.
BR	3

COUNTY
TANEY

JOB NO.
J7P3548

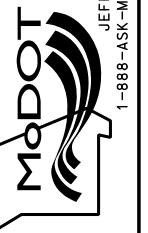
CONTRACT ID.

PROJECT NO.

BRIDGE NO.	A54341
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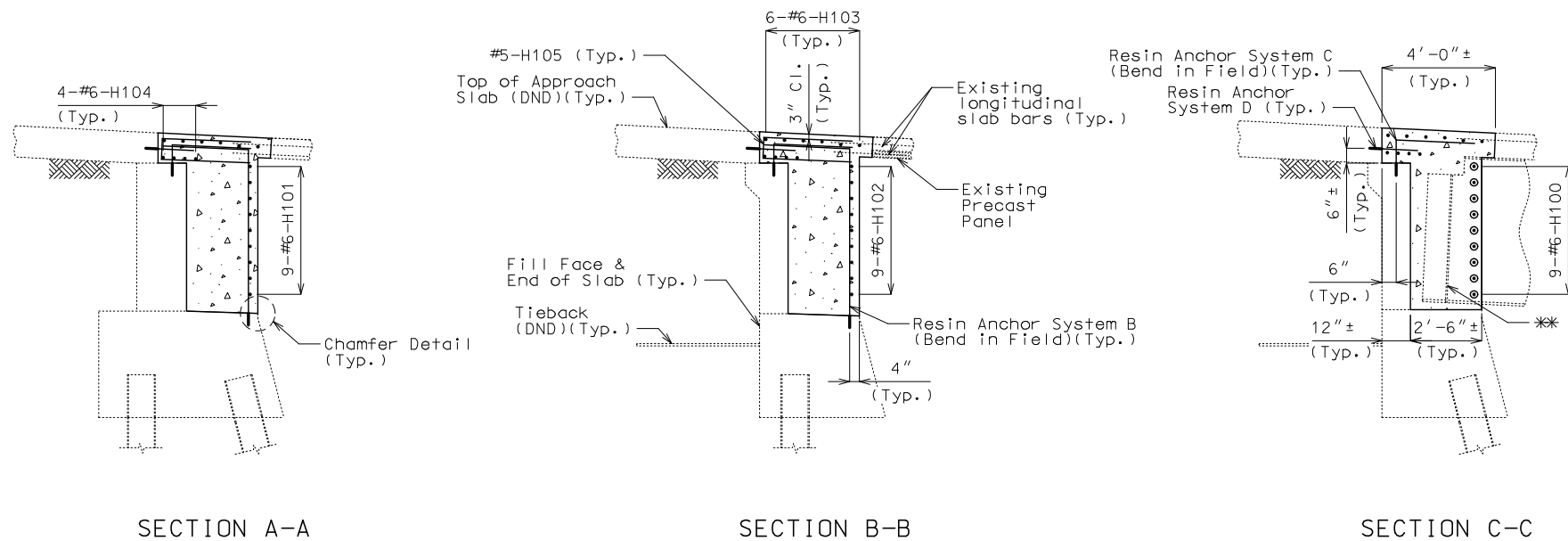
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Missouri Highways and Transportation Commission

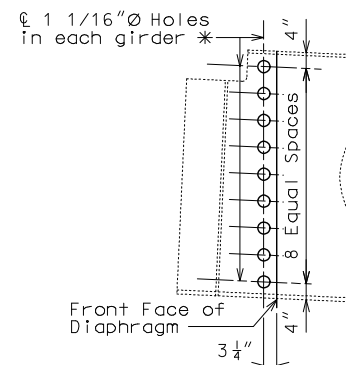
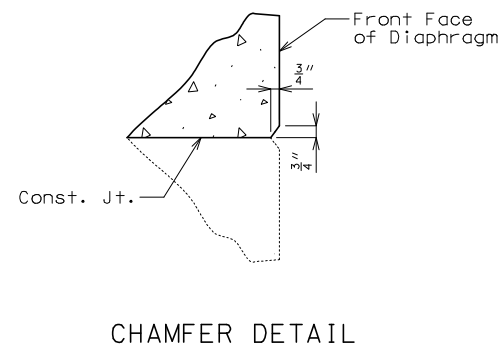


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AUTHORITY NO. 001592



※ All uncoated or corroded surfaces of existing structural steel shall be recoated with one 6-mil thickness of gray epoxy-mastic primer applied over an SSPC-SP3 surface preparation in accordance with Sec 1081 prior to encasing in concrete. All labor and materials necessary to complete this work shall be considered subsidiary to Class B-2 Concrete.



※ Cost of field drilling holes in existing wide flange beam webs will be considered completely covered by the contract unit price for Class B-2 Concrete. No flame cutting will be allowed.

DETAILS OF END BENT NO. 1

Notes:

For locations of Sections A-A, B-B, & C-C, see Sheet No. 3.
For details of Resin Anchor Systems B, C, & D, see Sheet No. 7.



GRANT C. LUCKENBILL
NUMBER
PE-20120808
PROFESSIONAL ENGINEER
MO# PE-201208100

DATE PREPARED 3/5/2024	
ROUTE 76	STATE MO
DISTRICT BR	SHEET NO. 4
COUNTY TANEY	
JOB NO. J7P3548	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A54341	
DESCRIPTION	DATE

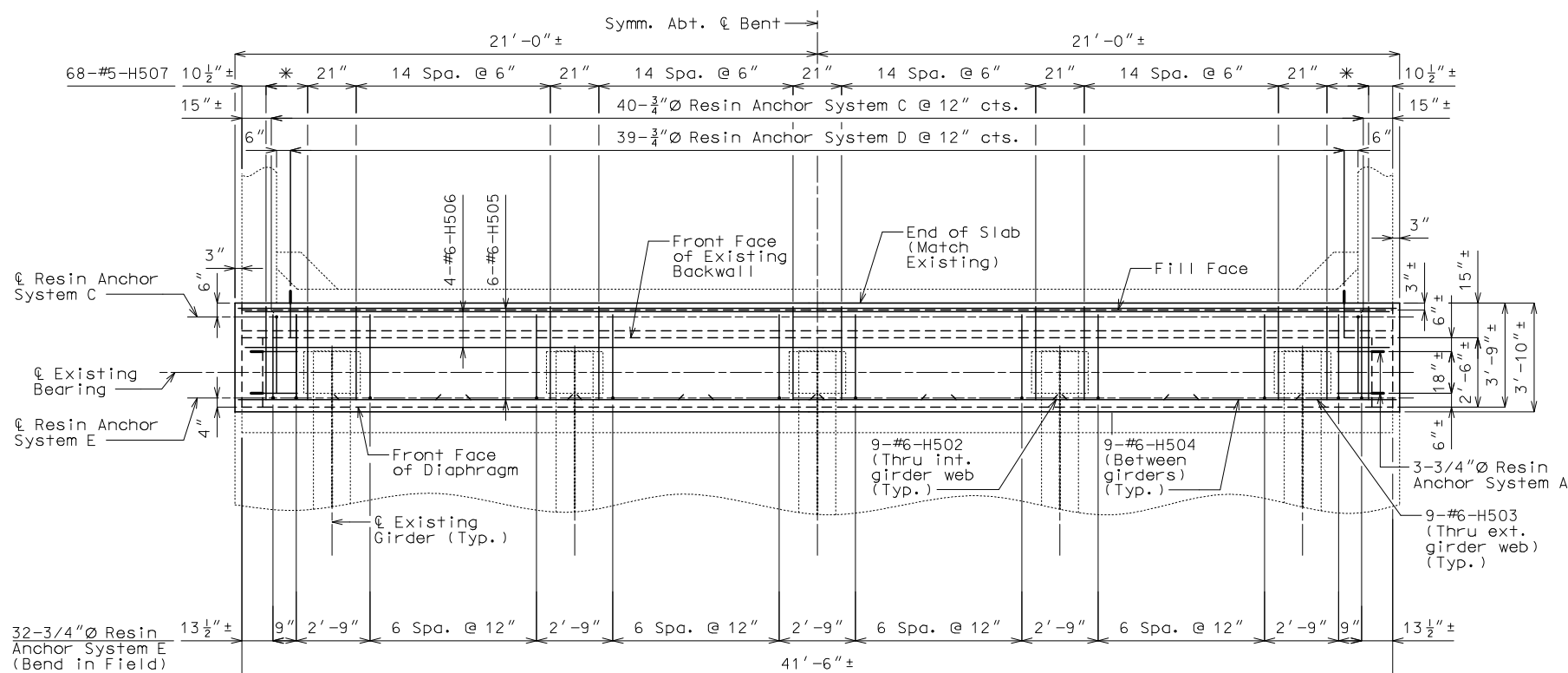
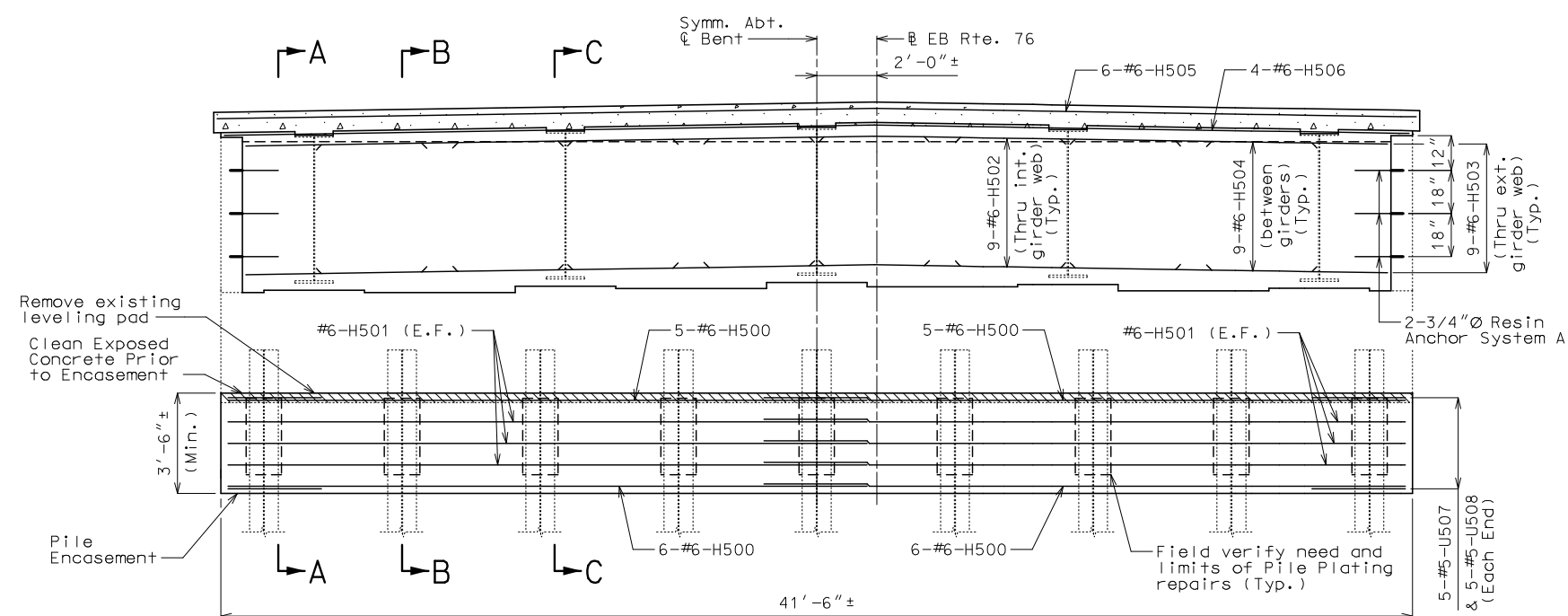
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General Notes:

Contractor shall backfill areas below wingwalls within limits of excavation with flowable backfill to 12" beyond inside and outside faces of walls. Do not excavate more than 2 feet of wingwall behind fill face of end bent without providing temporary shoring.

Cost of all concrete, concrete surface preparation and any other incidental material or labor to complete pile encasement, complete in place, will be considered completely covered by the contract unit price for Class B Concrete (Substructure).

Contractor to provide formwork or other means to temporarily shore the back of the excavation for the pile encasement to protect against subgrade settlement below the approach slab immediately after excavation and prior to construction of the encasement. Should sloughing of the existing backfill occur prior to installation of formwork or shoring, Contractor shall notify the Engineer and obtain direction to fill the cavity. This work is likely to consist of pumping in flowable backfill through the formwork or shoring to restore the subgrade. Cost of all excavation, backfilling, flowable backfill, and temporary shoring (where necessary) including but not limited to that for pile encasement construction, will be considered completely covered by the contract lump sum price for Unclassified Excavation.

Reinforcing steel shall be shifted as necessary to clear existing piles by at least 1 1/2".

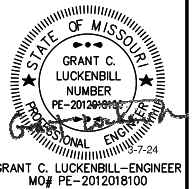
For quantities, see Estimated Quantities Table on Sheet No. 1.

For Sections A-A, B-B and C-C, see Sheet No. 6.

Clean existing backwall, top of beam, all structural steel, and bearings prior to pouring diaphragm.

For details and reinforcement of barrier, see Sheet No. 8.

For details of Resin Anchor Systems A, C, D, & E,
see Sheet No. 7.



DATE PREPARED
3/7/2024

ROUTE	STATE
76	MO

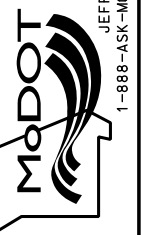
DISTRICT	SHEET NO.
BR	5

COUNTY
TANEY

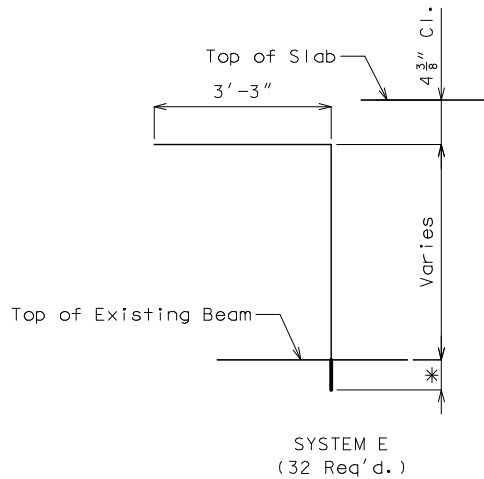
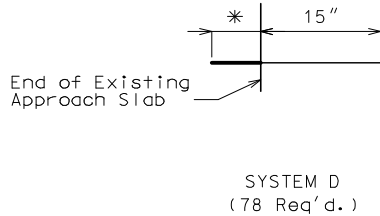
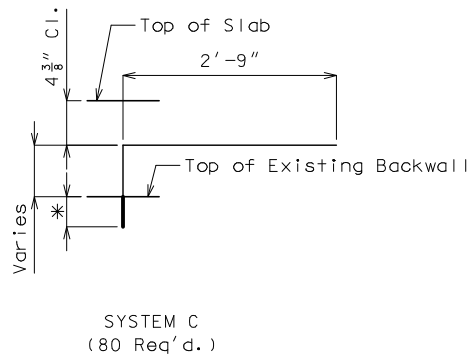
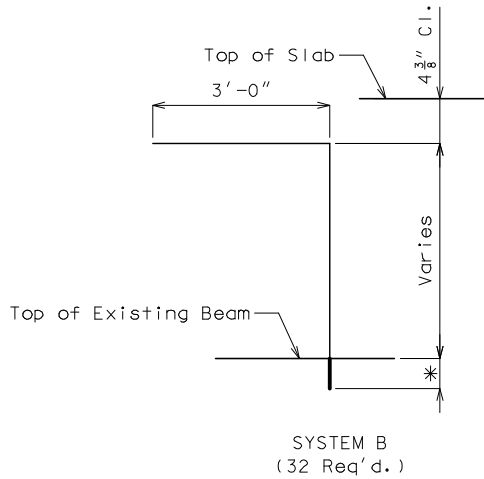
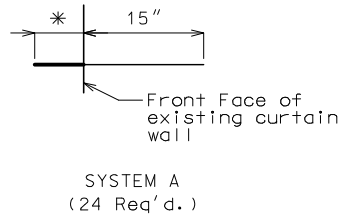
JOB NO.
J7P3548

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A54341[illegible]MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

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SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592



DETAILS OF RESIN ANCHOR SYSTEMS

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

Notes:

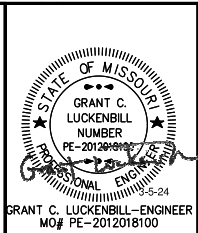
For locations of Resin Anchor Systems, see Sheets No. 3 thru 6.

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-2 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 pull out strength in accordance with Sec 1039 but shall not be less than 5".

An epoxy coated #6 Grade 60 reinforcing bar shall be substituted for the 3/4"Ø threaded rod.



DATE PREPARED 3/5/2024	
ROUTE 76	STATE MO
DISTRICT BR	SHEET NO. 7
COUNTY TANEY	
JOB NO. J7P3548	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A54341	

DESCRIPTION	DATE

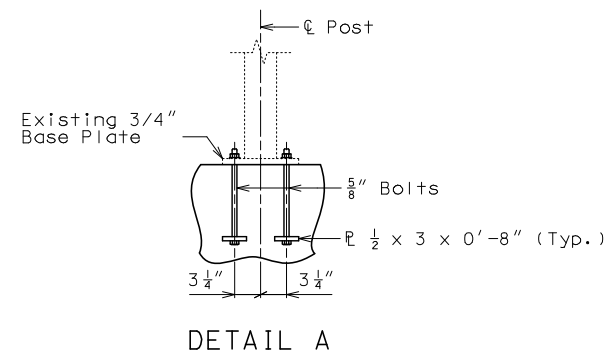
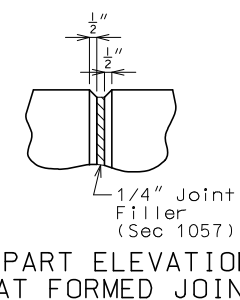
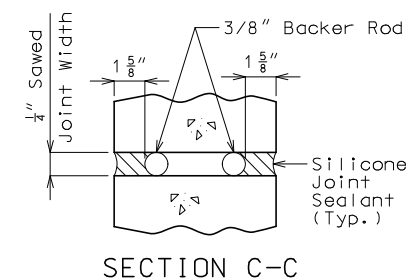
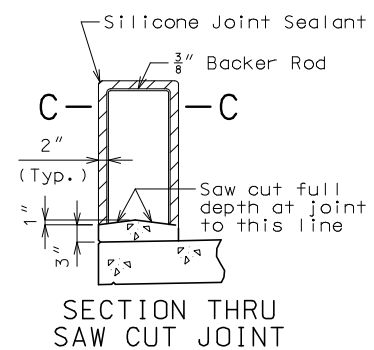
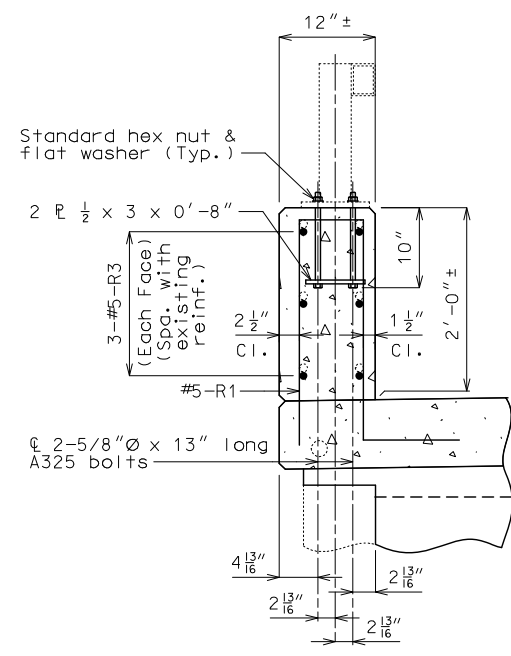
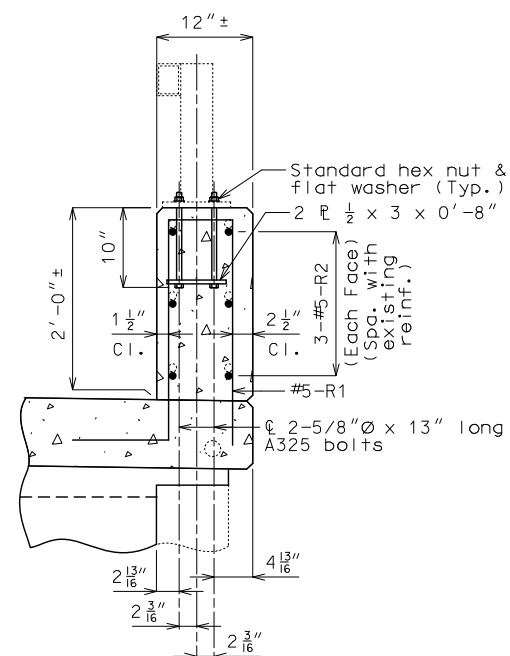
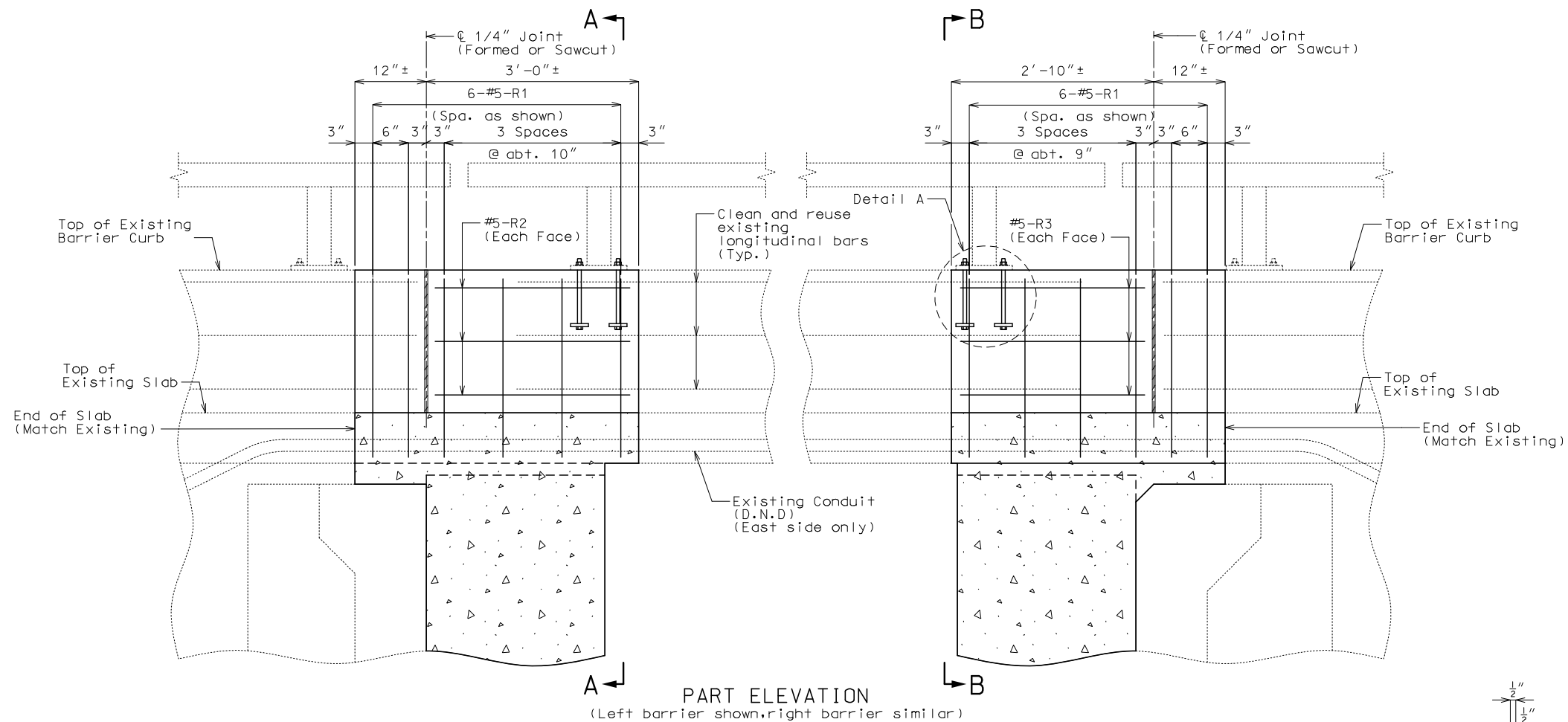
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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JEFFERSON CITY, MO 65102
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General Notes:

Remove existing stirrups within limits of barrier replacement.

Top of barrier shall be built parallel to grade.

All exposed edges of barrier shall have a 3/4" chamfer.

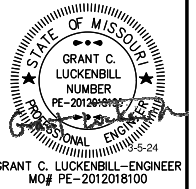
Payment for all concrete, reinforcement, bolts, nuts and washers, complete in place, will be considered completely covered by the contract unit price for Remove and Replace Barrier Curb per linear foot.

Concrete in the barrier shall be Class B-1.

Measurement of barrier is to the nearest linear foot measured along the outside top of slab.

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

Anchor bolts, nuts and washers shall be painted to match existing railing. Cost will be considered covered by the contract unit price for Remove and Replace Barrier Curb.



DATE PREPARED
3/5/2024

ROUTE	STATE
76	MO

DISTRICT	SHEET NO.
BR	8

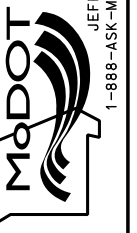
COUNTY
TANEY

JOB NO.
J7P3548

CONTRACT ID.

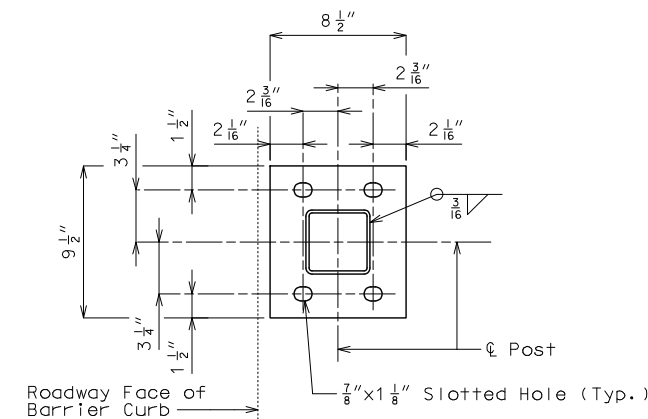
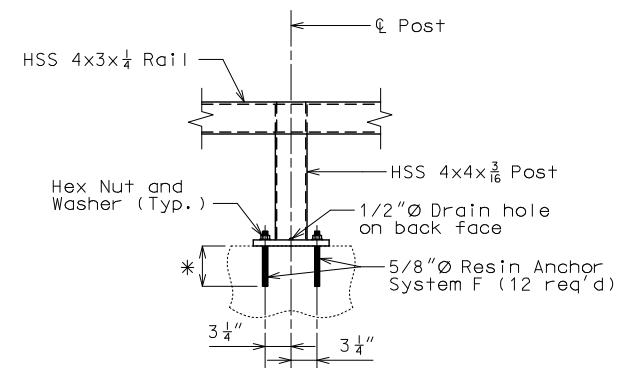
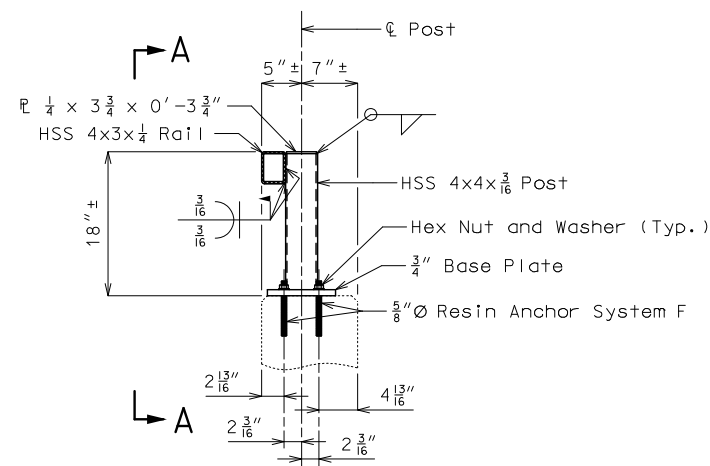
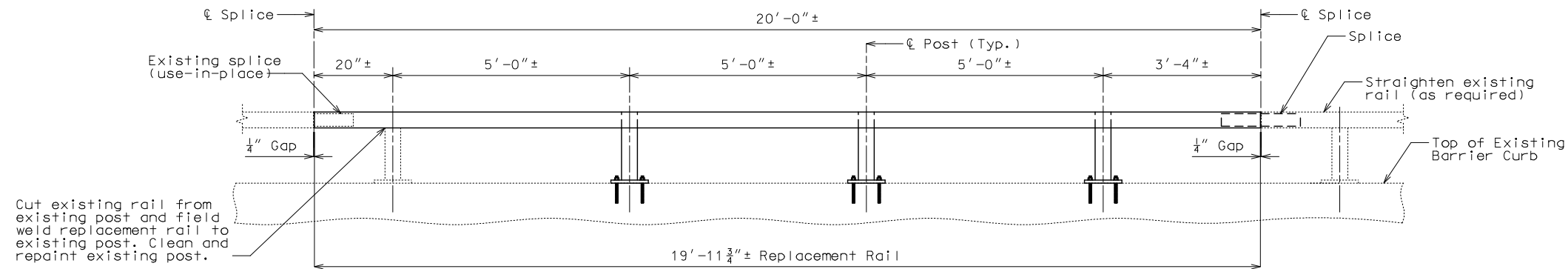
PROJECT NO.

BRIDGE NO.
A54341

[illegible]MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

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550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
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General Notes:

Contractor shall all verify dimensions in field before ordering materials.

Posts shall be set perpendicular to roadway profile grade, vertically in cross section and aligned in accordance with Sec 713.

Rail shall be bent as needed to conform to vertical and horizontal alignment of barrier curb.

Steel shims between top of barrier curb and post base plate may be used for adjusting rail alignment.

Payment for all structural steel, resin anchors, bolts, cap screws and washers, complete in place, will be considered completely covered by the contract lump sum price for Rail Repairs.

Rail shall be painted to match existing.
Cost will be considered covered by the
contract lump sum price for Rail Repairs.

HSS = Hollow Structural Steel Section

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

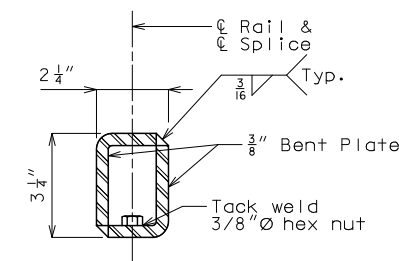
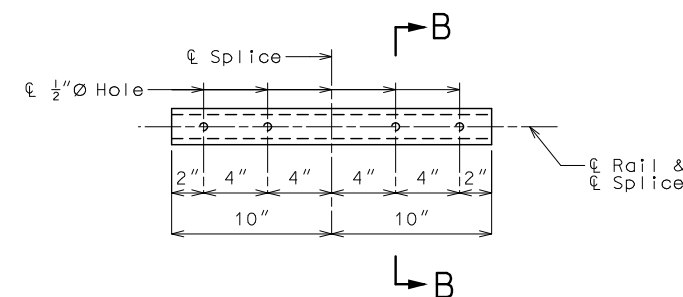
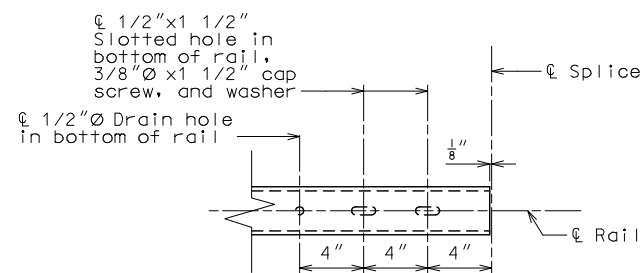
Hollow structural steel sections shall be in accordance with ASTM A500 Grade B and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F. see Sec 1080 for reporting.

All other steel shapes and plates shall be in accordance with ASTM A709 Grade 50.

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

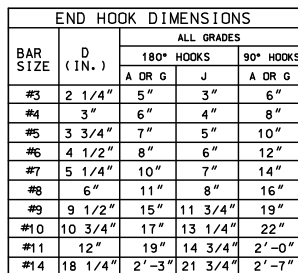
Cost of furnishing and installing the resin anchor systems, complete in place, will be considered completely covered by the contract lump sum price for Rail Repairs.

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 pull out strength in accordance with Sec 1039 but shall not be less than 5".

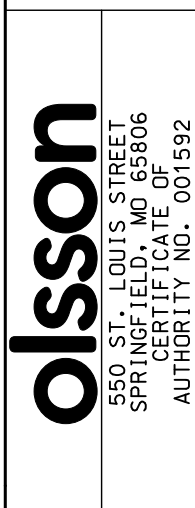
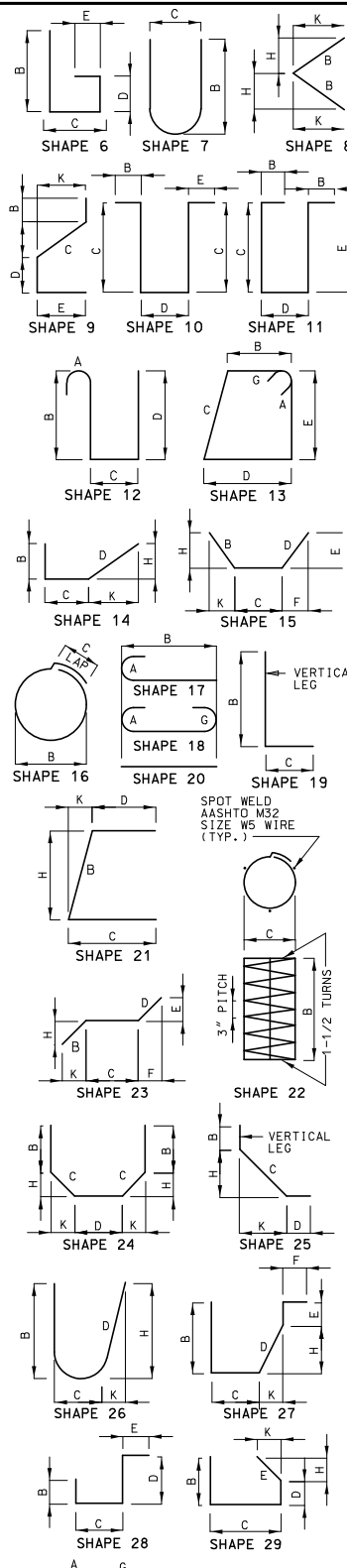


RAIL REPAIR STA. 414+48.00±

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	
										FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.	FT.	IN.	FT.	IN.
			SUBSTRUCTURE																							
			END BENT 1																							
27	6	H100	DIAPHRAGM	E	20						7	8.000					7	8	7	8	311					
18	6	H101	DIAPHRAGM	E	20						6	3.000					6	3	6	3	169					
36	6	H102	DIAPHRAGM	E	20						8	6.000					8	6	8	6	460					
6	6	H103	DIAPHRAGM	E	20						41	9.000					41	9	41	9	376					
4	6	H104	DIAPHRAGM	E	20						41	3.000					41	3	41	3	248					
68	5	H105	DIAPHRAGM	E	10	S					3	3.000	7.500				7	2	6	11	491					
			END BENT 5																							
22	6	H500	BEAM	E	20		X				22	9.000					22	9	22	9	752					
12	6	H501	BEAM	E	20		X				22	9.000					22	9	22	9	410					
27	6	H502	DIAPHRAGM	E	20						7	8.000					7	8	7	8	311					
18	6	H503	DIAPHRAGM	E	20						6	3.000					6	3	6	3	169					
36	6	H504	DIAPHRAGM	E	20						8	6.000					8	6	8	6	460					
6	6	H505	DIAPHRAGM	E	20						41	9.000					41	9	41	9	376					
4	6	H506	DIAPHRAGM	E	20						41	3.000					41	3	41	3	248					
68	5	H507	DIAPHRAGM	E	10	S					3	6.000	7.500				7	8	7	5	526					
44	5	U500	BEAM	E	19	S	X				3	2.000	6.000				3	8	3	7	164					
36	5	U501	BEAM	E	19	S	X				2	9.000	5 5.000				8	2	8	1	304					
36	5	U502	BEAM	E	21	S	X				3	3.000	6.000	4 7.250			3 1.750	9.750	8	4	8	1	304			
6	5	U503	BEAM	E	19	S	X				2	9.000	7 6.000				10	3	10	2	64					
6	5	U504	BEAM	E	21	S	X				3	3.000	6.000	6 8.250			3 1.750	9.750	10	5	10	2	64			
2	5	U505	BEAM	E	19	S	X				2	9.000	6 7.000				9	4	9	3	19					
2	5	U506	BEAM	E	21	S	X				3	3.000	6.000	5 9.250			3 1.750	9.750	9	6	9	3	19			
10	5	U507	BEAM	E	11	S	X	V	2		3	2.000	6 8.250	22.000					11	8	11	6				
			INCREMENT =								3	2.000	7 6.000	22.000					12	6	12	4	124			
			2.438 INCH																							
10	5	U508	BEAM	E	14	S	X						22.000	4 4.250			3 1.000	3 1.000	6	2	6	2</				



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.
S = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NCA = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAM 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 ONE INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

[illegible]

U.I.P. AND REHABILITATE EXISTING (90'-130'-145'-145'-135')
CONTINUOUS COMPOSITE PLATE GIRDER SPANS

SEC/SUR 15 TWP 23N RGE 22W

General Notes:

Design Specifications:

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

Design Loading:

HS20-44 (Existing)

Design Unit Stresses:

Class B Concrete (End Bent Pile Encasement) $f'_c = 3,000$ psi
Class B-1 Concrete (Barriers) $f'_c = 4,000$ psi
Class B-2 Concrete (End Bent Diaphragms) $f'_c = 4,000$ psi
Reinforcing Steel (Grade 60) $f_y = 60,000$ psi
Structural Steel (ASTM A709 Grade 50) $f_y = 50,000$ 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.

Miscellaneous:

High strength bolts, nuts and washers will be sampled for quality assurance as specified in Sec 106.

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

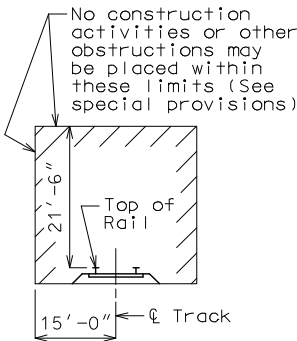
Contractor shall remove, stockpile, and replace rock blanket in-kind. See Roadway Plans for quantities.

Soil and rock below the existing end bent to be removed and replaced with the concrete encasement shall become the property of the Contractor and hauled off the site. No special measurement or payment will be made. This work to be completely covered by other items under the contract.

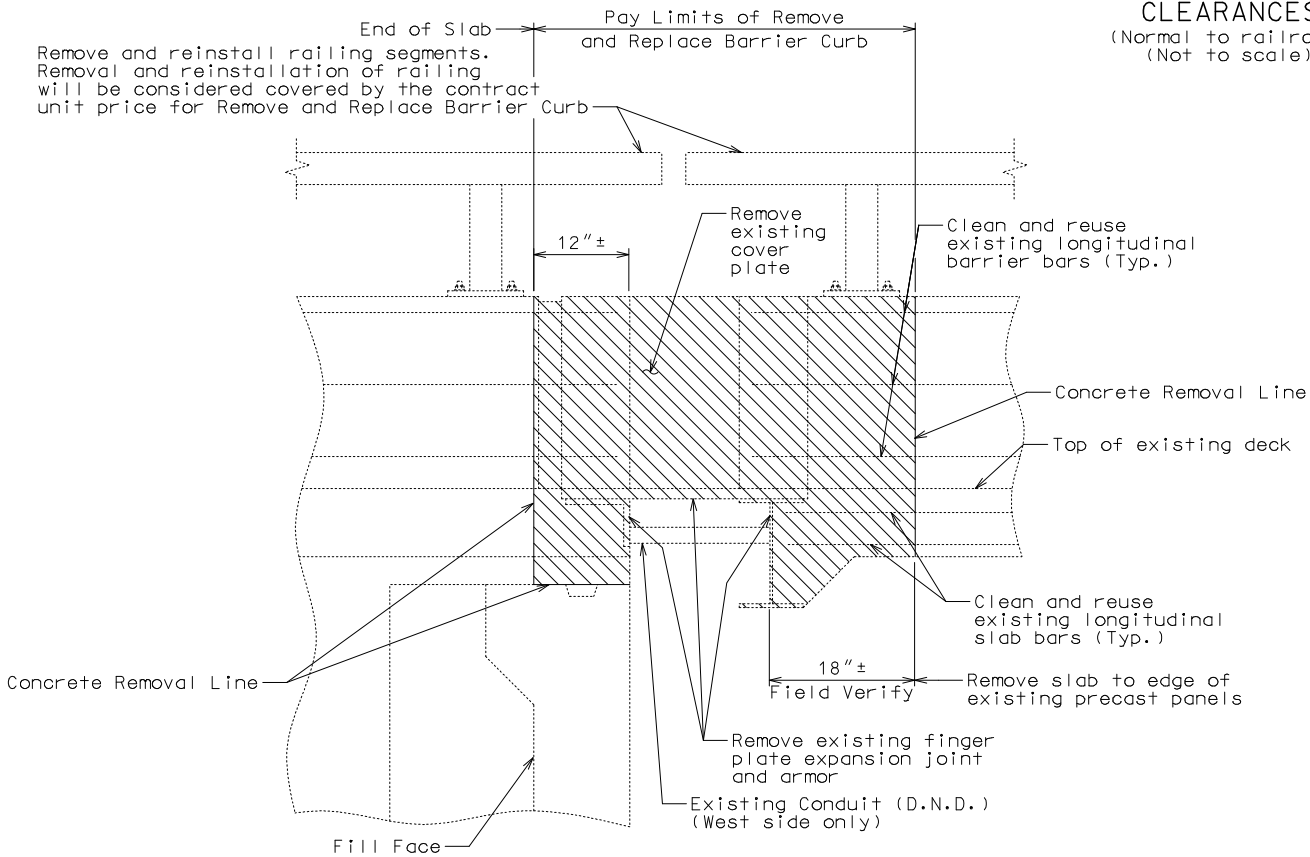
Traffic Handling:

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

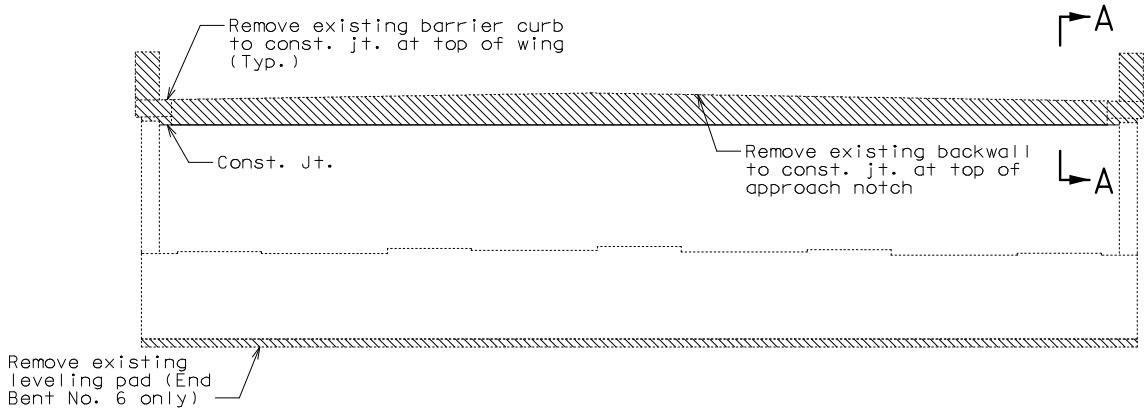
Estimated Quantities		
Item		Total
Unclassified Excavation	lump sum	1
Removal of Existing Expansion Joint & Adjacent Concrete	linear foot	84
Remove and Replace Barrier Curb	linear foot	16
Class B Concrete (Substructure)	cu. yard	30.6
Class B-2 Concrete	cu. yard	56.8
Reinforcing Steel (Epoxy Coated)	pound	6870
Surface Preparation for Applying Epoxy-Mastic Primer	lump sum	1
Gray Epoxy-Mastic Primer	lump sum	1
Steel Pile Repair	linear foot	22



MINIMUM CONSTRUCTION CLEARANCES
(Normal to railroad)
(Not to scale)



SECTION A-A
End Bent No. 1 shown, End Bent No. 6 similar.



DETAILS OF CONCRETE REMOVAL AT END BENTS

The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Expansion Joint & Adjacent Concrete and Remove and Replace Barrier Curb.

A smooth, level surface shall be provided at Bents No. 1 & 6 removal lines.

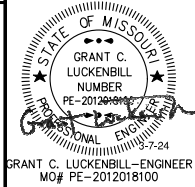
REPAIRS TO BRIDGE: ROUTE 76 WB
OVER MNA RAILROAD AND WEST FORK
OF ROARK CREEK

ROUTE 76 WB FROM ROUTE 248 TO ROUTE 376
ABOUT 3.2 MILES SOUTHWEST OF ROUTE 248
BEGINNING STATION 417+15.75± (MATCH EXISTING)

Detailed Jan. 2024
Checked Jan. 2024

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

Sheet No. 1 of 9

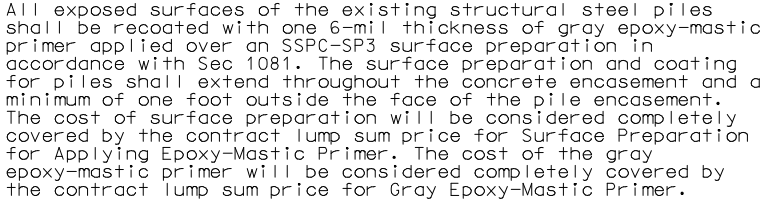


DATE PREPARED
3/7/2024
ROUTE
76
STATE
MO
DISTRICT
BR
SHEET NO.
1
COUNTY
TANEY
JOB NO.
JTP3548
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
A54351

DESCRIPTION	DATE

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

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592



Notes:

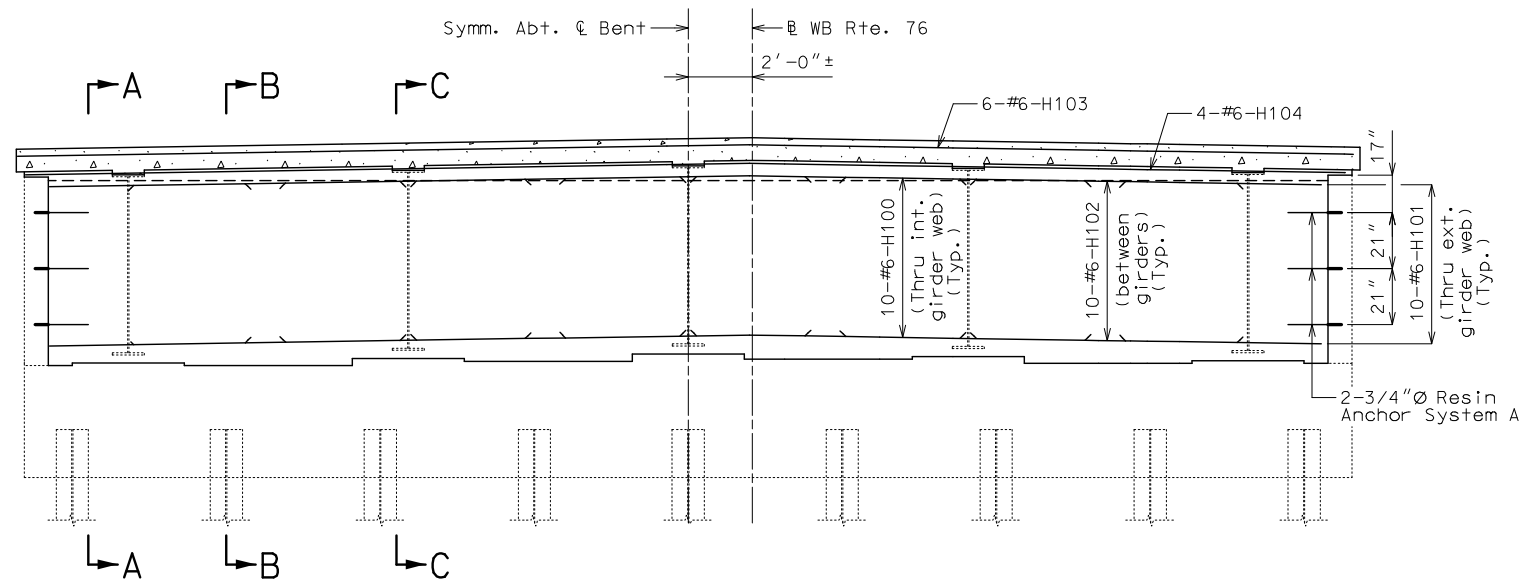
Fabricated structural steel shall be ASTM A709 Grade 50.

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

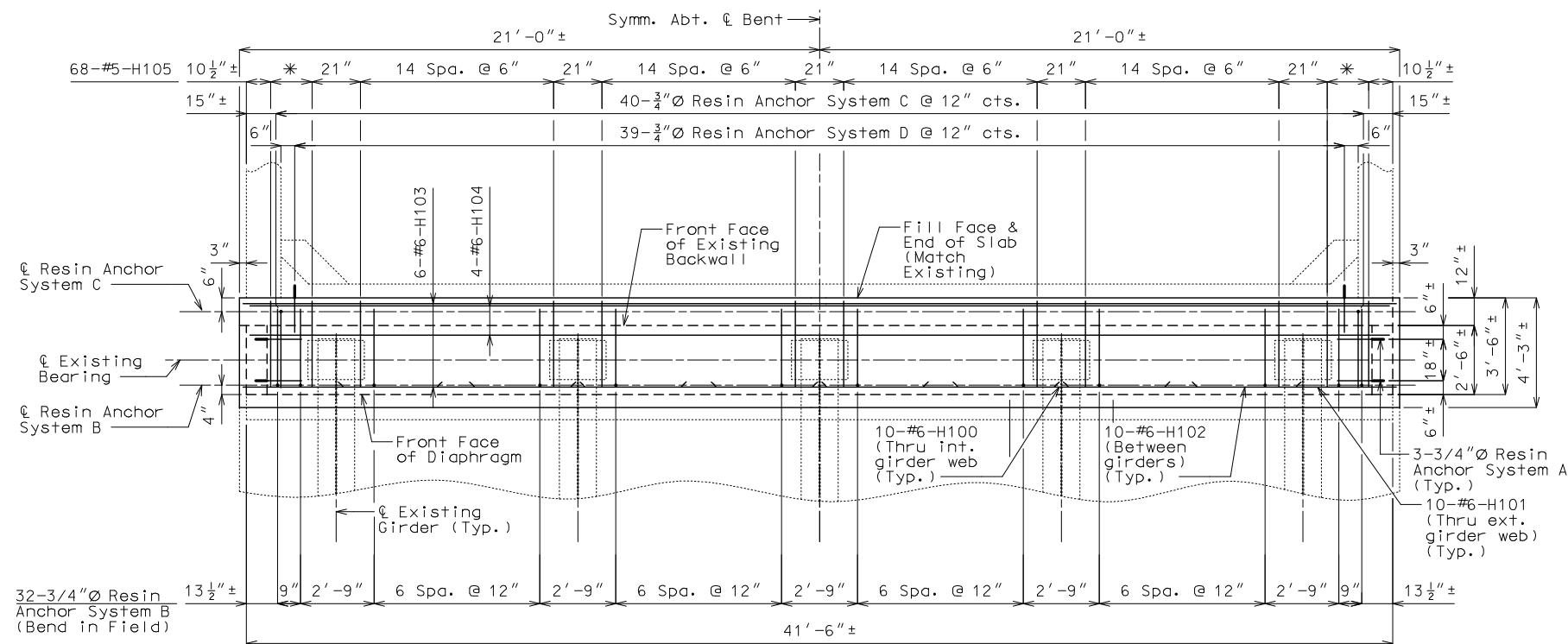
Only one pile shall be repaired at a time.

Instructions for Pile Plating:

- (1) Number of 3" spaces shall be determined in the field to extend past the extents of the deteriorated area.
- (2) Plate length shall be determined in the field.
- (3) Pile plating is required when section loss exceeds 40%. Limits of pile plating shall be determined by the engineer.
- (4) Use plates as templates for field drilling holes in existing pile. Place bolts snug tight as drilled per each. High-strength tightening shall begin after all bolts are installed per flange or web.



SECTION NEAR END BENT
Existing cross-frames, bearing stiffeners, and bearings not shown (use-in-place).
Resin anchor systems except Resin Anchor System A, slab reinforcing, and barrier
not shown for clarity.



PART PLAN
* 3 Spa. @ 6"

DETAILS OF END BENT NO. 1

Notes:

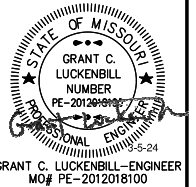
For quantities, see Estimated Quantities Table on Sheet No. 1.

For Sections A-A, B-B, and C-C see Sheet No. 4.

Clean existing backwall, top of beam, all structural steel, and bearings prior to pouring diaphragm.

For details and reinforcement of barrier, see Sheet No. 8.

For details of Resin Anchor Systems A, B, C, & D see Sheet No. 7.



DATE PREPARED
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ROUTE
76

STATE
MO

DISTRICT
BR

SHEET NO.
3

COUNTY
TANEY

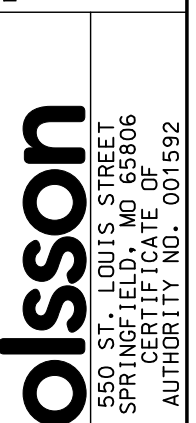
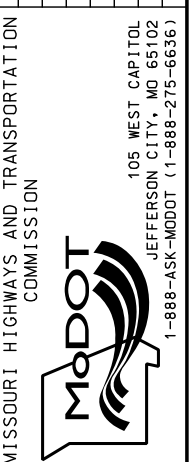
JOB NO.
JTP3548

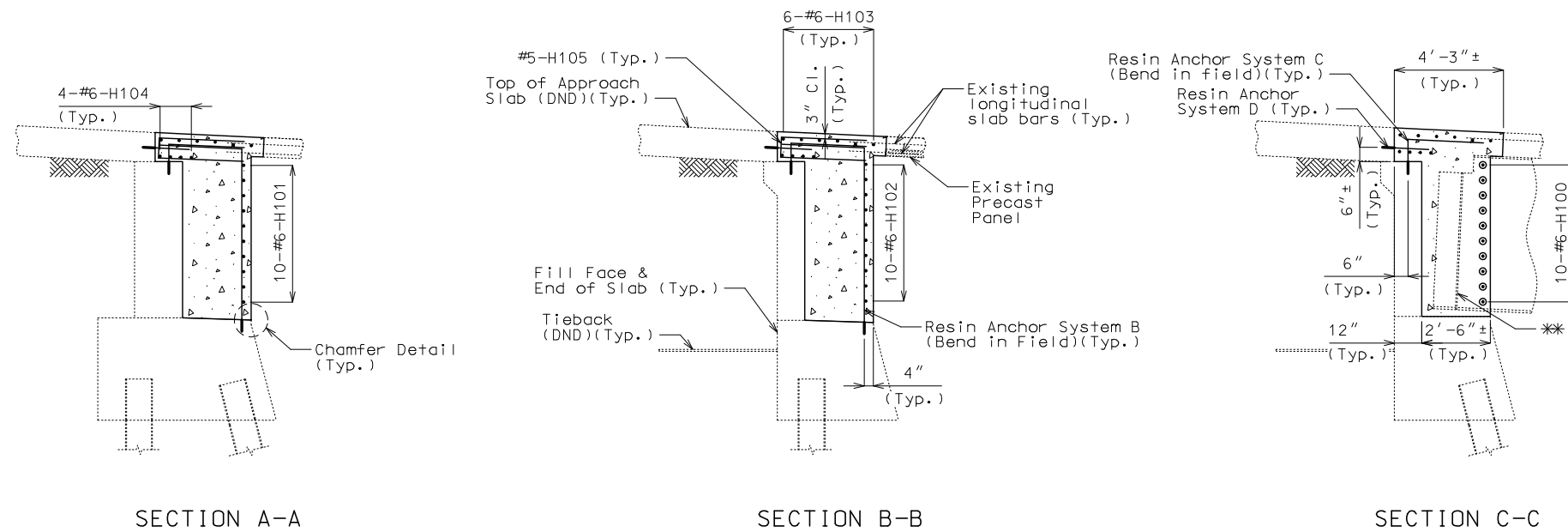
CONTRACT ID.

PROJECT NO.

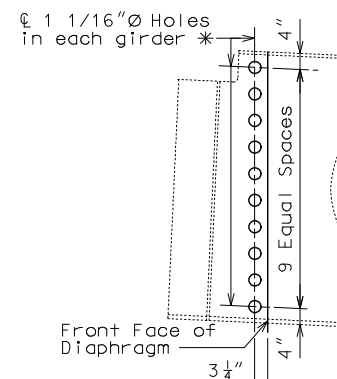
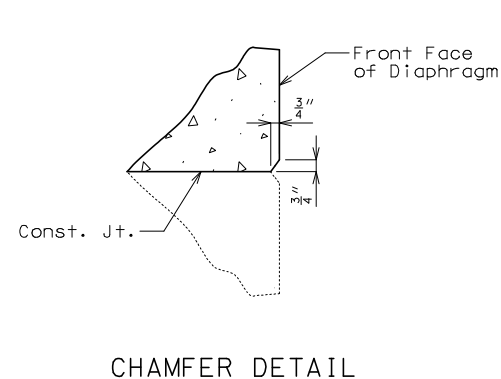
BRIDGE NO.
A54351

DESCRIPTION	DATE





✱ All uncoated or corroded surfaces of existing structural steel shall be recoated with one 6-mil thickness of gray epoxy-mastic primer applied over an SSPC-SP3 surface preparation in accordance with Sec 1081 prior to encasing in concrete. All labor and materials necessary to complete this work shall be considered subsidiary to Class B-2 Concrete.



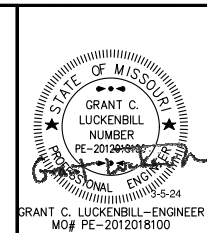
✱ Cost of field drilling holes in existing wide flange beam webs will be considered completely covered by the contract unit price for Class B-2 Concrete. No flame cutting will be allowed.

DETAILS OF END BENT NO. 1

Notes:

For locations of Sections A-A, B-B, & C-C, see Sheet No. 3.

For details of Resin Anchor Systems A, B, C, & D, see Sheet No. 7.



DATE PREPARED 3/5/2024	
ROUTE 76	STATE MO
DISTRICT BR	SHEET NO. 4
COUNTY TANEY	
JOB NO. J7P3548	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A54341	

DESCRIPTION	DATE

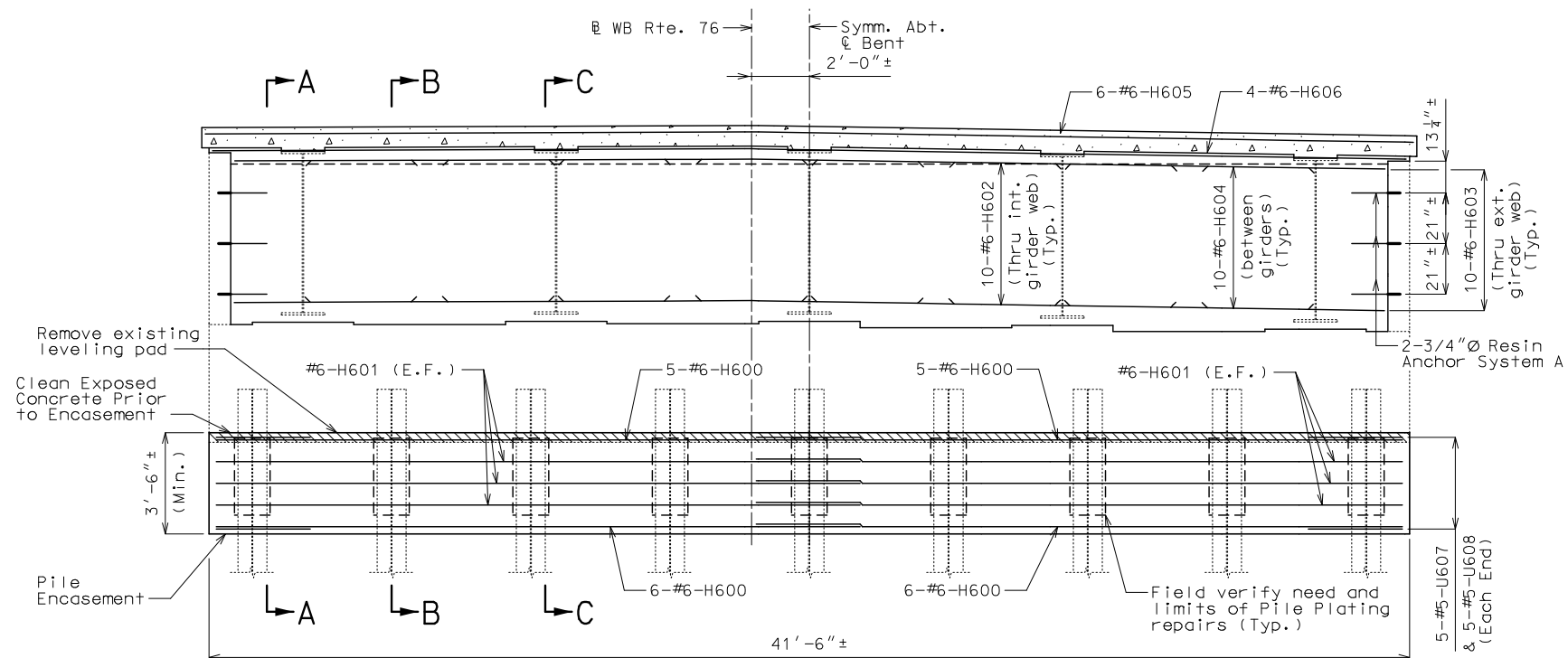
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

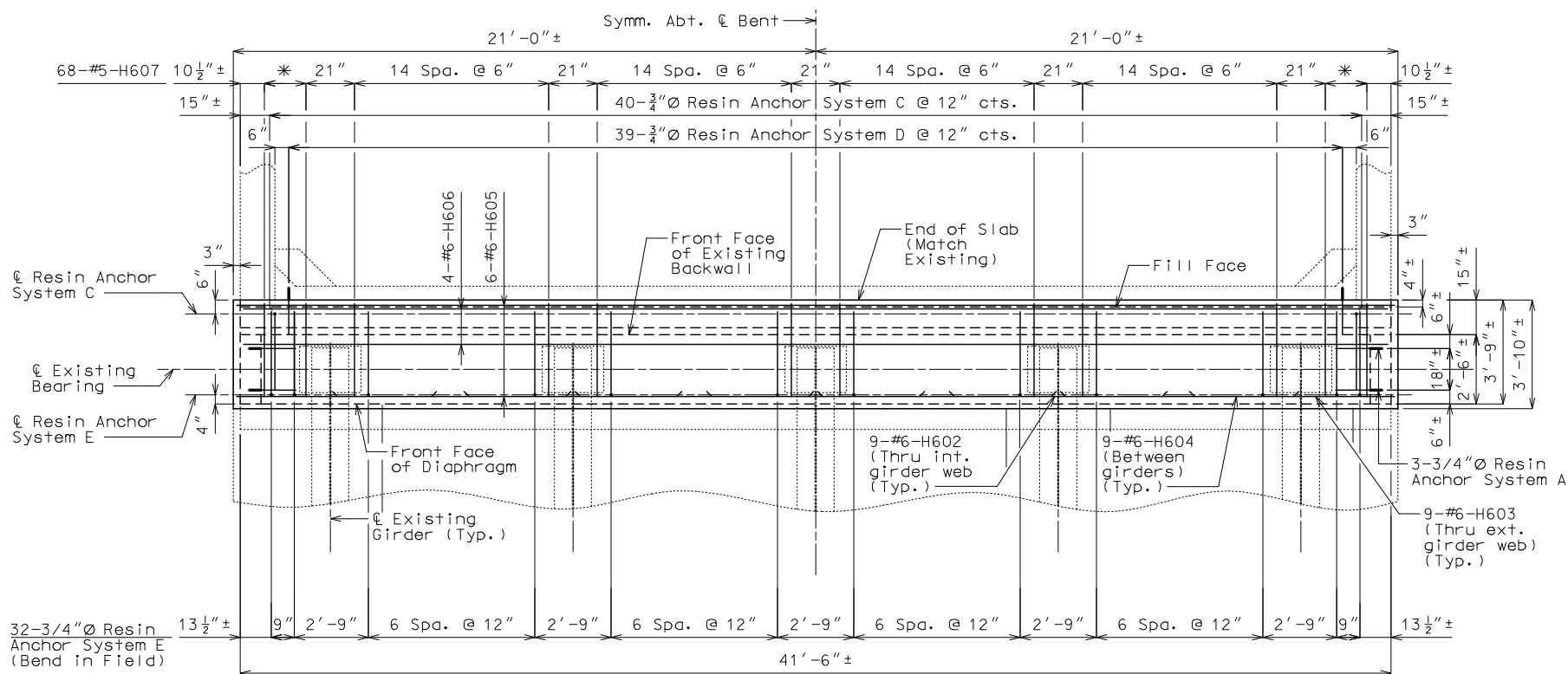
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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SECTION NEAR END BENT
Existing cross-frames, bearing stiffeners, and bearings not shown (use-in-place).
Resin anchor systems except Resin Anchor System A, slab reinforcing, and barrier not shown for clarity.



PART PLAN
* 3 Spa. @ 6"

DETAILS OF END BENT NO. 6

General Notes:

Contractor shall backfill areas below wingwalls within limits of excavation with flowable backfill to 12" beyond inside and outside faces of walls. Do not excavate more than 2 feet of wingwall behind fill face of end bent without providing temporary shoring.

Cost of all concrete, concrete surface preparation and any other incidental material or labor to complete pile encasement, complete in place, will be considered completely covered by the contract unit price for Class B Concrete (Substructure).

Contractor to provide formwork or other means to temporarily shore the back of the excavation for the pile encasement to protect against subgrade settlement below the approach slab immediately after excavation and prior to construction of the encasement. Should sloughing of the existing backfill occur prior to installation of formwork or shoring, Contractor shall notify the Engineer and obtain direction to fill the cavity. This work is likely to consist of pumping in flowable backfill through the formwork or shoring to restore the subgrade. Cost of all excavation, backfilling, flowable backfill, and temporary shoring (where necessary) including but not limited to that for pile encasement construction, will be considered completely covered by the contract lump sum price for Unclassified Excavation.

Reinforcing steel shall be shifted as necessary to clear existing piles by at least 1 1/2".

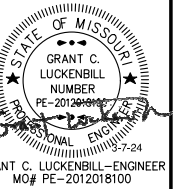
For quantities, see Estimated Quantities Table on Sheet No. 1.

For Sections A-A, B-B and C-C, see Sheet No. 6.

Clean existing backwall, top of beam, all structural steel, and bearings prior to pouring diaphragm.

For details and reinforcement of barrier, see Sheet No. 8.

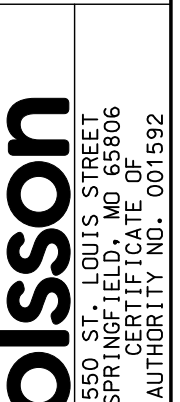
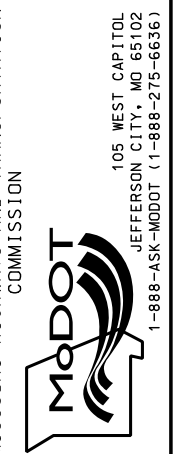
For details of Resin Anchor Systems A, C, D, & E, see Sheet No. 7.

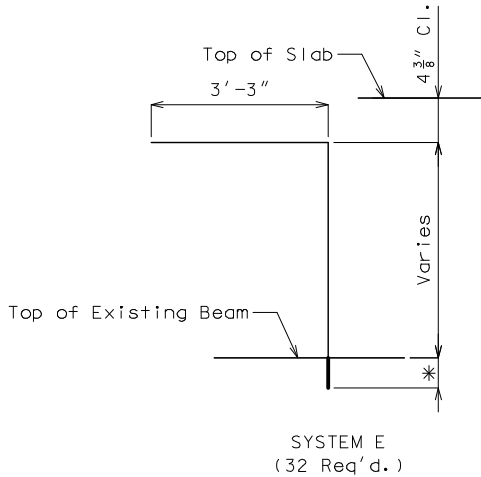
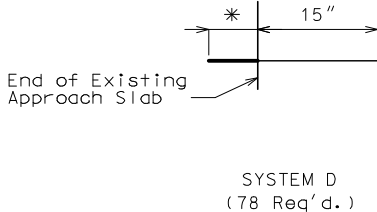
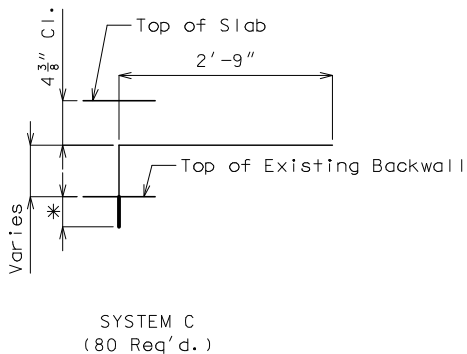
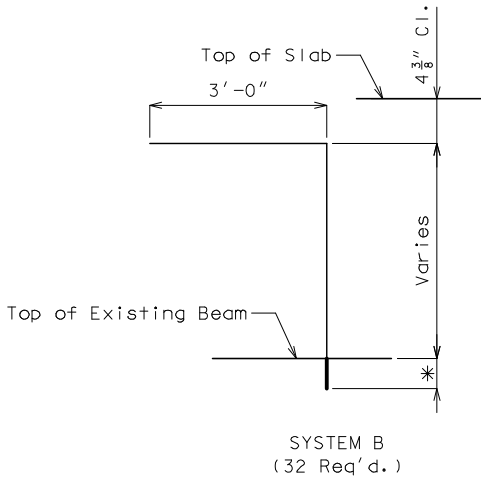
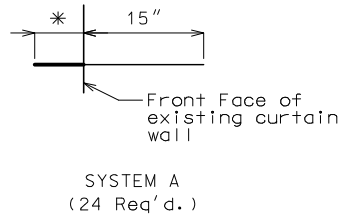


DATE PREPARED
3/7/2024
ROUTE
76
DISTRICT
BR
STATE
MO
SHEET NO.
5
COUNTY
TANEY
JOB NO.
JTP3548
CONTRACT ID.

PROJECT NO.
BRIDGE NO.
A54351

DESCRIPTION	DATE

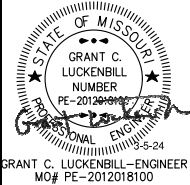




DETAILS OF RESIN ANCHOR SYSTEMS

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

Notes:
For locations of Resin Anchor Systems, see Sheets No. 3 thru 6.
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-2 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 pull out strength in accordance with Sec 1039 but shall not be less than 5".
An epoxy coated #6 Grade 60 reinforcing bar shall be substituted for the 3/4"Ø threaded rod.



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ROUTE 76	STATE MO
DISTRICT BR	SHEET NO. 7

COUNTY
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J7P3548

CONTRACT ID.

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BRIDGE NO.
A54351

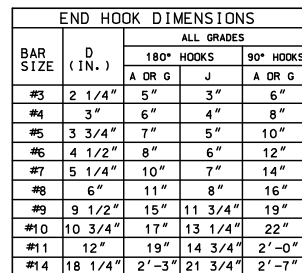
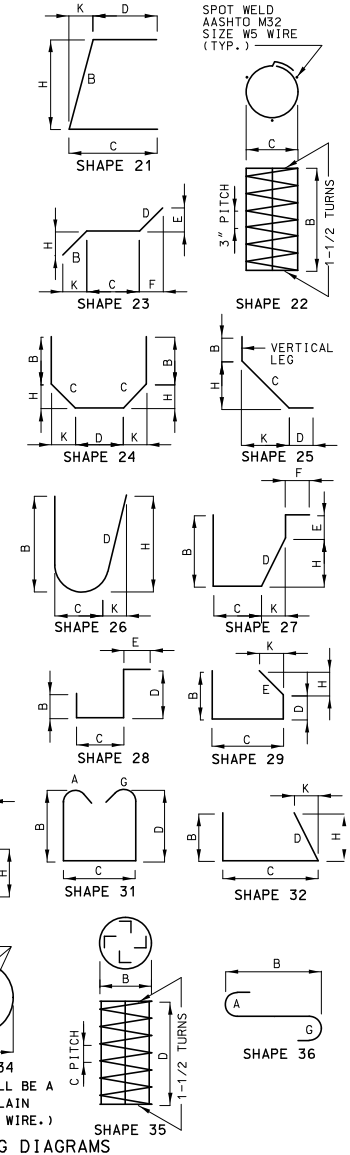
DESCRIPTION	DATE

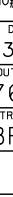
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

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	
										FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.	FT.	IN.	FT.	IN.
			SUBSTRUCTURE																							
			END BENT 1																							
30	6	H100	DIAPHRAGM	E	20					7	8.000						7	8	7	8	345					
20	6	H101	DIAPHRAGM	E	20					6	3.000						6	3	6	3	188					
40	6	H102	DIAPHRAGM	E	20					8	6.000						8	6	8	6	511					
6	6	H103	DIAPHRAGM	E	20					41	9.000						41	9	41	9	376					
4	6	H104	DIAPHRAGM	E	20					41	3.000						41	3	41	3	248					
68	5	H105	DIAPHRAGM	E	10	S					3	3.000	7.500				7	2	6	11	491					
			END BENT 6																							
22	6	H600	BEAM	E	20		X			22	9.000						22	9	22	9	752					
12	6	H601	BEAM	E	20		X			22	9.000						22	9	22	9	410					
30	6	H602	DIAPHRAGM	E	20					7	8.000						7	8	7	8	345					
20	6	H603	DIAPHRAGM	E	20					6	3.000						6	3	6	3	188					
40	6	H604	DIAPHRAGM	E	20					8	6.000						8	6	8	6	511					
6	6	H605	DIAPHRAGM	E	20					41	9.000						41	9	41	9	376					
4	6	H606	DIAPHRAGM	E	20					41	3.000						41	3	41	3	248					
68	5	H607	DIAPHRAGM	E	10	S					3	7.000	7.500				7	10	7	7	538					
44	5	U600	BEAM	E	19	S	X			3	2.000	6.000					3	8	3	7	164					
36	5	U601	BEAM	E	19	S	X			2	9.000	5	5.000				8	2	8	1	304					
36	5	U602	BEAM	E	21	S	X			3	3.000	6.000	4	7.250			3	1.750	9.750	8	4	8	1	304		
6	5	U603	BEAM	E	19	S	X			2	9.000	7	6.000				10	3	10	2	64					
6	5	U604	BEAM	E	21	S	X			3	3.000	6.000	6	8.250			3	1.750	9.750	10	5	10	2	64		
2	5	U605	BEAM	E	19	S	X			2	9.000	6	7.000				9	4	9	3	19					
2	5	U606	BEAM	E	21	S	X			3	3.000	6.000	5	9.250			3	1.750	9.750	9	6	9	3	19		
10	5	U607	BEAM	E	11	S	X	V	2		3	2.000	6	8.250	22.000		11	8	11	6						
			INCREMENT =								3	2.000	7	6.000	22.000		12	6	12	4						
			2.438 INCH																							
10	5	U608	BEAM	E	14	S	X				22.000	4	4.250				3	1.000	1.000	6	2					

[illegible]

 GRANT C. LUCKENBILL—ENGINEER MO# PE-2012018100		DATE PREPARED	
		3/5/2024	
ROUTE	STATE		
76	MO		
DISTRICT	SHEET NO.		
BR	9		
COUNTY			
TANEY			
JOB NO.			
J7P3548			
CONTRACT ID.			
PROJECT NO.			
BRIDGE NO.			
A54351			
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION		DATE	
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 MoDOT		DATE	
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