



GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED
8/31/2020

ROUTE B STATE MO

DISTRICT NW SHEET NO. 2

COUNTY HOLT

JOB NO. J1S3061

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)

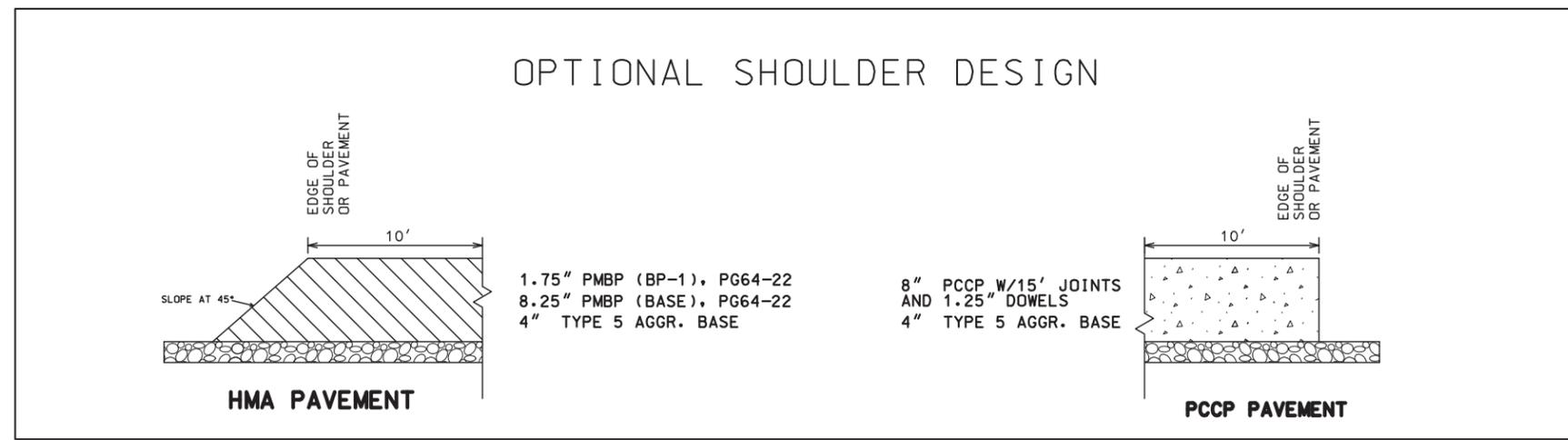
MoDOT

1301 BURLINGTON STREET, STE. 100

NORTH KANSAS CITY, MO 64116

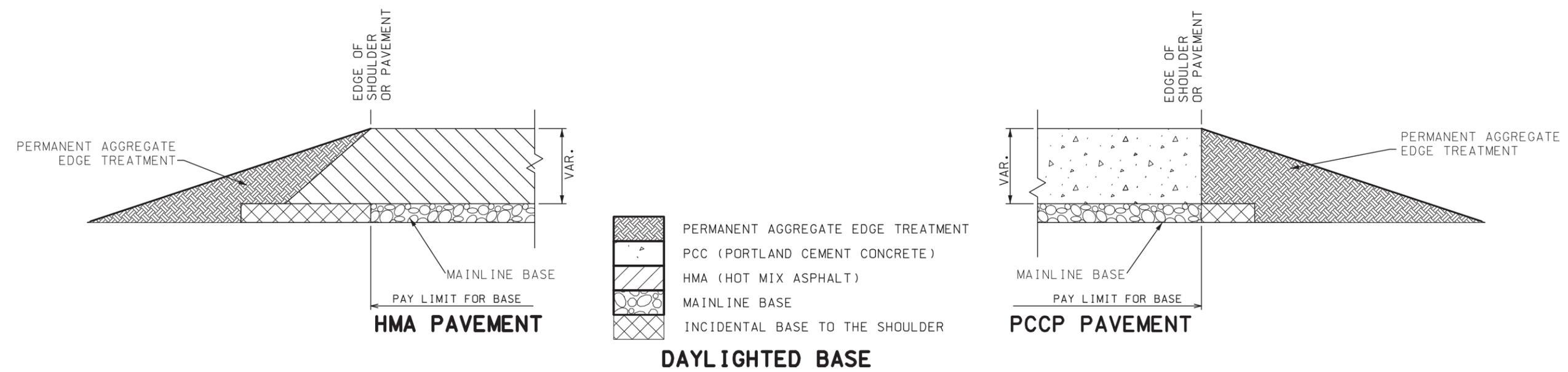
CERTIFICATE OF AUTHORITY NO. 001592

OPTIONAL SHOULDER DESIGN



GENERAL NOTE:

1. PERMANENT AGGREGATE EDGE TREATMENT WILL BE PAID FOR UNDER PAY ITEM 3049910 PERMANENT AGGREGATE EDGE TREATMENT PER TON.
2. VERTICAL SAWCUT WILL BE PAID FOR UNDER REMOVAL OF IMPROVEMENTS.



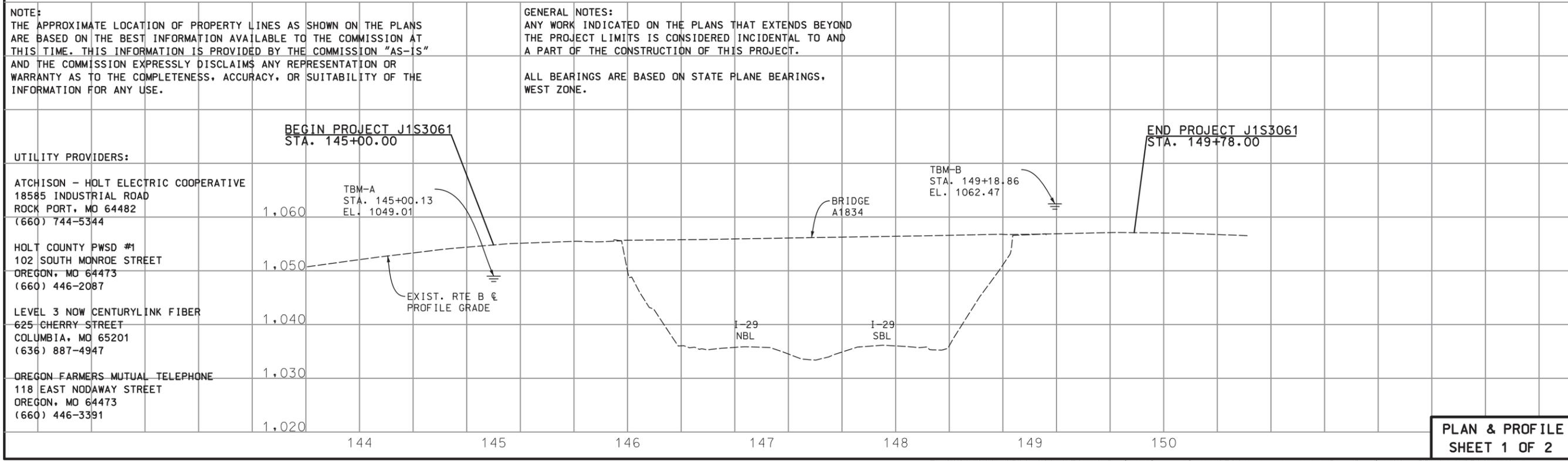
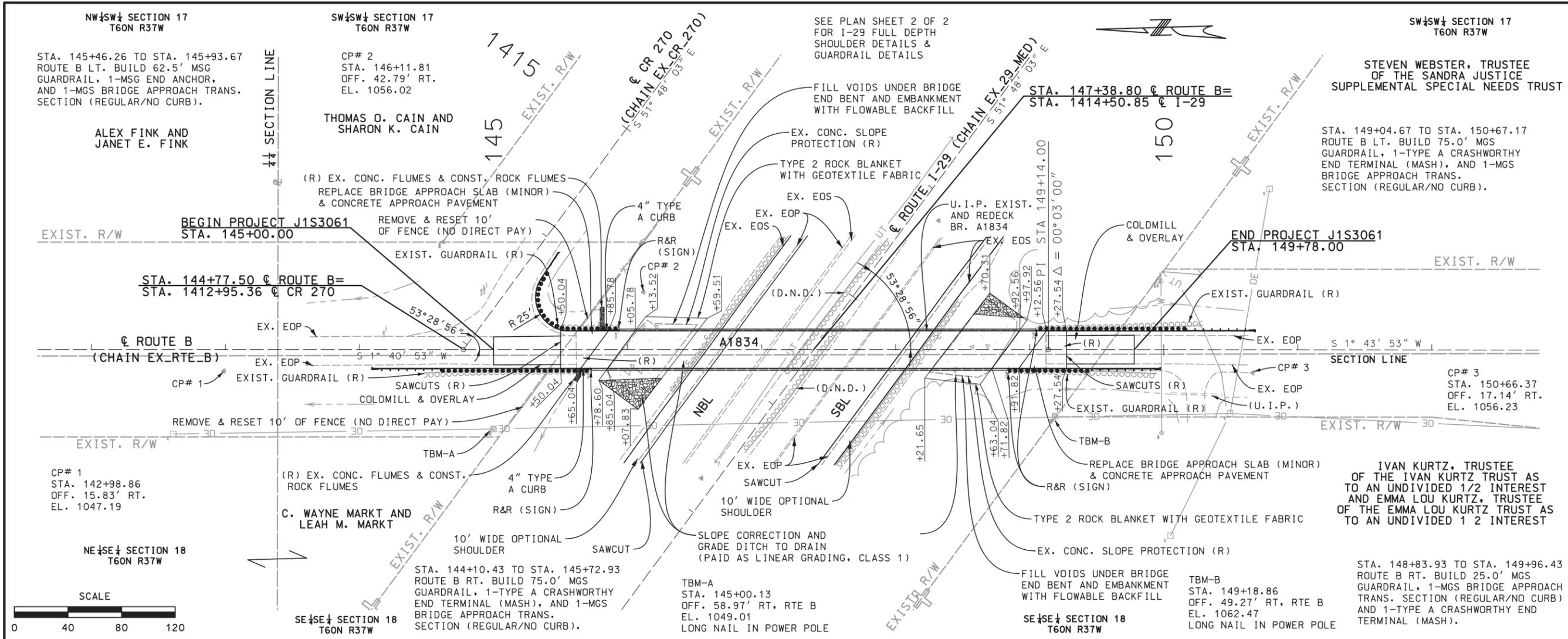
NOT TO SCALE

TYPICAL SECTIONS
SHEET 3 OF 3

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
WARNING SIGNS								
W01-1L	48X48	16.00						TURN (SYMBOL LEFT ARROW)
W01-1R	48X48	16.00						TURN (SYMBOL RIGHT ARROW)
W01-2L	48X48	16.00						CURVE (SYMBOL LEFT ARROW)
W01-2R	48X48	16.00						CURVE (SYMBOL RIGHT ARROW)
W01-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT ARROW)
W01-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT ARROW)
W01-4L	48X48	16.00	4	64.00			15L	REVERSE CURVE (SYMBOL LEFT ARROW)
W01-4R	48X48	16.00	4	64.00			15R	REVERSE CURVE (SYMBOL RIGHT ARROW)
W01-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
W01-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
W01-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
W01-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
W01-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
W01-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
W01-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
W01-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
W01-8	18X24	3.00						CHEVRON (SYMBOL)
W01-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
W03-1	48X48	16.00						STOP AHEAD (SYMBOL)
W03-2	48X48	16.00						YIELD AHEAD (SYMBOL)
W03-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
W03-4	48X48	16.00						BE PREPARED TO STOP
W03-5	48X48	16.00	4	64.00			3	SPEED LIMIT AHEAD
W04-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
W04-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
W04-1aL	48X48	16.00	2	32.00			6AL	MERGE (ARROW SYMBOL)
W04-1aR	48X48	16.00	2	32.00			6AR	MERGE (ARROW SYMBOL)
W05-1	48X48	16.00	4	64.00			43	ROAD/BRIDGE/RAMP NARROWS
W05-3	48X48	16.00						ONE LANE BRIDGE
W05-5	48X48	16.00						NARROW LANES
W06-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
W06-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
W06-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
W07-3a	30X24	5.00	4	20.00			44A	NEXT XX MILES (PLAQUE)
W08-1	48X48	16.00						BUMP
W08-2	48X48	16.00						DIP
W08-3	48X48	16.00						PAVEMENT ENDS
W08-4	48X48	16.00						SOFT SHOULDER
W08-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
W08-6	48X48	16.00						TRUCK CROSSING
W08-6c	48X48	16.00						TRUCK ENTRANCE
W08-7	36X36	9.00						LOOSE GRAVEL
W08-7a	36X36	9.00						FRESH OIL/LOOSE GRAVEL
W08-9	48X48	16.00						LOW SHOULDER
W08-11	48X48	16.00						UNEVEN LANES
W08-12	48X48	16.00						NO CENTER LINE
W08-15	48X48	16.00						GROOVED PAVEMENT
W08-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
W08-17	48X48	16.00						SHOULDER DROP-OFF (SYMBOL)
W08-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
W012-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
W012-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
W012-2X	24X18	3.00						LOW CLEARANCE (PLAQUE)
W012-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
W012-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
W012-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
W013-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
W016-2	30X24	5.00						XXX FEET (PLAQUE)
W016-3	30X24	5.00						X MILE (PLAQUE)
W020-1	48X48	16.00	4	64.00			2	ROAD/BRIDGE/RAMP WORK AHEAD
W020-2	48X48	16.00	5	80.00			18	DETOUR AHEAD
W020-3	48X48	16.00	2	32.00			20	ROAD CLOSED AHEAD
W020-4	48X48	16.00	2	32.00			7	ONE LANE ROAD AHEAD
W020-5	48X48	16.00	4	64.00			5	RIGHT/CENTER/LEFT LANE CLOSED AHEAD
W020-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
W020-6a	48X48	16.00	2	32.00			6	RIGHT/CENTER/LEFT LANE CLOSED
W020-7a	48X48	16.00						FLAGGER (SYMBOL) WITH FLAGS
W021-2	36X36	9.00						FRESH OIL
W021-5	48X48	16.00	4	64.00			21	SHOULDER WORK AHEAD
W021-5a	48X48	16.00						RIGHT (LEFT) SHOULDER CLOSED
W022-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
W022-3	42X36	10.50						END BLASTING ZONE
G022-1	21X15	2.19	2	4.38			59	WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
G020-1	60X24	10.00						ROAD WORK NEXT XX MILES
G020-2	48X24	8.00	4	32.00			26	END ROAD WORK
G020-4	36X18	4.50						PILOT CAR FOLLOW ME
G020-4a	42X30	8.75						PLEASE WAIT FOR PILOT CAR
G020-5aP	36X24	6.00	4	24.00			54	WORK ZONE (PLAQUE)
M04-8a	24X18	3.00	2	6.00			52	END DETOUR
M04-9L	48X36	12.00						DETOUR (LEFT ARROW)
M04-9R	48X36	12.00						DETOUR (RIGHT ARROW)
M04-9P	48X12	4.00						STREET NAME (PLAQUE)
M04-10L	48X18	6.00						DETOUR (ARROW LEFT)
M04-10R	48X18	6.00						DETOUR (ARROW RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TRI.	6.93						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R1-3P	30X12	2.50						ALL WAY (PLAQUE)
R2-1	36X48	12.00	6	72.00			4	SPEED LIMIT XX (4-60, 2-70)
R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45° ARROW)
R11-2	48X30	10.00	4	40.00			29	ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50	4	50.00			58	ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00						FINE SIGN
CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)
MISCELLANEOUS SIGNS								
CONST-5	48X36	12.00						POINT OF PRESENCE
CONST-5	96X48	32.00	2	64.00			55	POINT OF PRESENCE
CONST-7	48X24	8.00						RATE OUR WORK ZONE
CONST-7	72X36	18.00	2	36.00			56	RATE OUR WORK ZONE
CONST-8	48X36	12.00	4	48.00			57	WORK ZONE NO PHONE ZONE
CONST-9	36X78	19.50	8	156.00			50A	DETOUR N ROUTE B
CONST-10	36X78	19.50	3	58.50			50B	DETOUR N ROUTE B
CONST-11	36X78	19.50	3	58.50			50C	DETOUR N ROUTE B
CONST-12	36X78	19.50	3	58.50			50D	DETOUR N ROUTE B
CONST-13	36X78	19.50	3	58.50			50E	DETOUR N ROUTE B
CONST-14	36X78	19.50	10	195.00			50F	DETOUR S ROUTE B
CONST-15	36X78	19.50	2	39.00			50G	DETOUR S ROUTE B
CONST-16	36X78	19.50	3	58.50			50H	DETOUR S ROUTE B
CONST-17	36X78	19.50	2	39.00			50I	DETOUR S ROUTE B
CONST-18	36X78	19.50	3	58.50			50J	DETOUR S ROUTE B
CONST-19	96X48	32.00	1	64.00			59	ROUTE B CLOSED 3 MI
CONST-20	96X60	40.00	2	80.00			51K	ROUTE B CLOSED N OF 59
CONST-21	96X60	40.00	2	80.00			51L	ROUTE B CLOSED S OF H
							TOTAL	
							616-10.05	
							CONSTRUCTION SIGNS	2025
							616-10.10	
							RELOCATED SIGNS	0

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019	2	IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020	2	REPLACEMENT SAND BARREL
6122030	2	IMPACT ATTENUATOR (RELOCATION)
6123000A	2	TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)
6161007		SPEED LIMIT AND STROBE LIGHT ASSEMBLY
6161008	12	ADVANCED WARNING RAIL SYSTEM
6161009	8	FLAG ASSEMBLY
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161024	56	CHANNELIZER (TRIM LINE) WITH LIGHT



NOTE:
 THE APPROXIMATE LOCATION OF PROPERTY LINES AS SHOWN ON THE PLANS ARE BASED ON THE BEST INFORMATION AVAILABLE TO THE COMMISSION AT THIS TIME. THIS INFORMATION IS PROVIDED BY THE COMMISSION "AS-IS" AND THE COMMISSION EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY AS TO THE COMPLETENESS, ACCURACY, OR SUITABILITY OF THE INFORMATION FOR ANY USE.

GENERAL NOTES:
 ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND A PART OF THE CONSTRUCTION OF THIS PROJECT.
 ALL BEARINGS ARE BASED ON STATE PLANE BEARINGS, WEST ZONE.

UTILITY PROVIDERS:	DATE	DESCRIPTION
ATCHISON - HOLT ELECTRIC COOPERATIVE 18585 INDUSTRIAL ROAD ROCK PORT, MO 64482 (660) 744-5344		
HOLT COUNTY PWSD #1 102 SOUTH MONROE STREET OREGON, MO 64473 (660) 446-2087		
LEVEL 3 NOW CENTURYLINK FIBER 625 CHERRY STREET COLUMBIA, MO 65201 (636) 887-4947		
OREGON FARMERS MUTUAL TELEPHONE 118 EAST NODAWAY STREET OREGON, MO 64473 (660) 446-3391		

PLAN & PROFILE
 SHEET 1 OF 2

GRANT C. LUCKENBILL-ENGINEER
 MO# PE-2012018100

DATE PREPARED: 7/1/2020

ROUTE: B, STATE: MO, DISTRICT: NW, SHEET NO.: 4

COUNTY: HOLT, JOB NO.: J1S3061, CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

DESCRIPTION:

DATE:

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

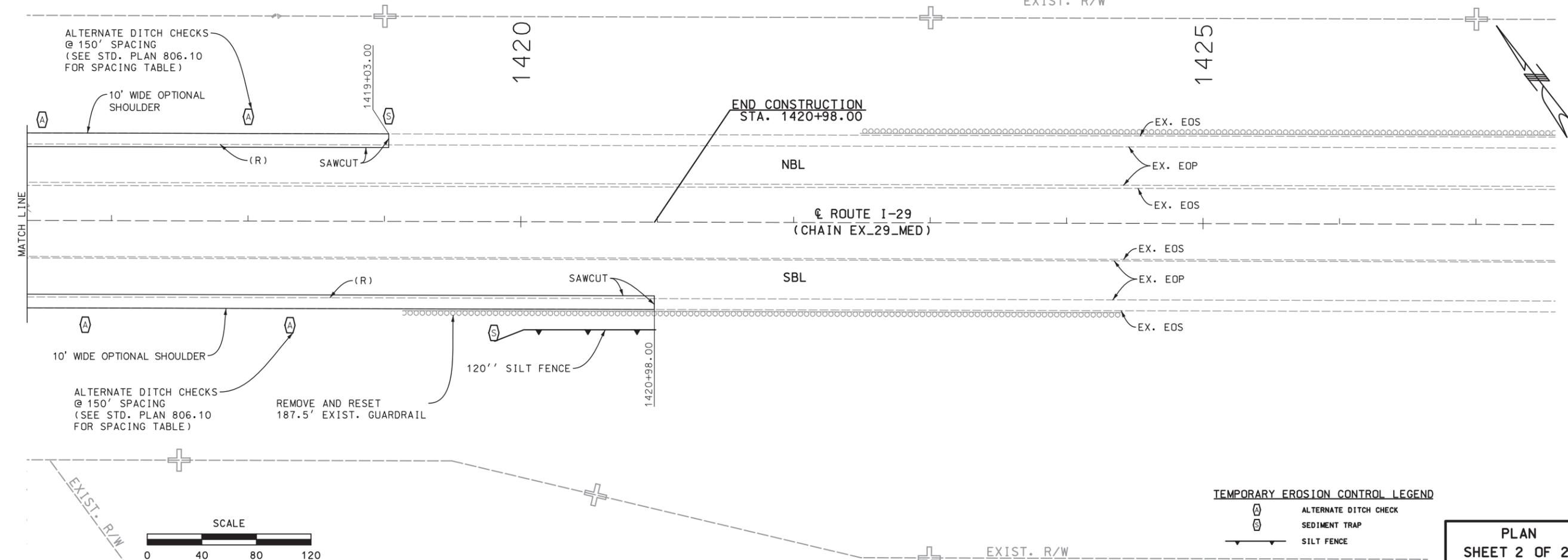
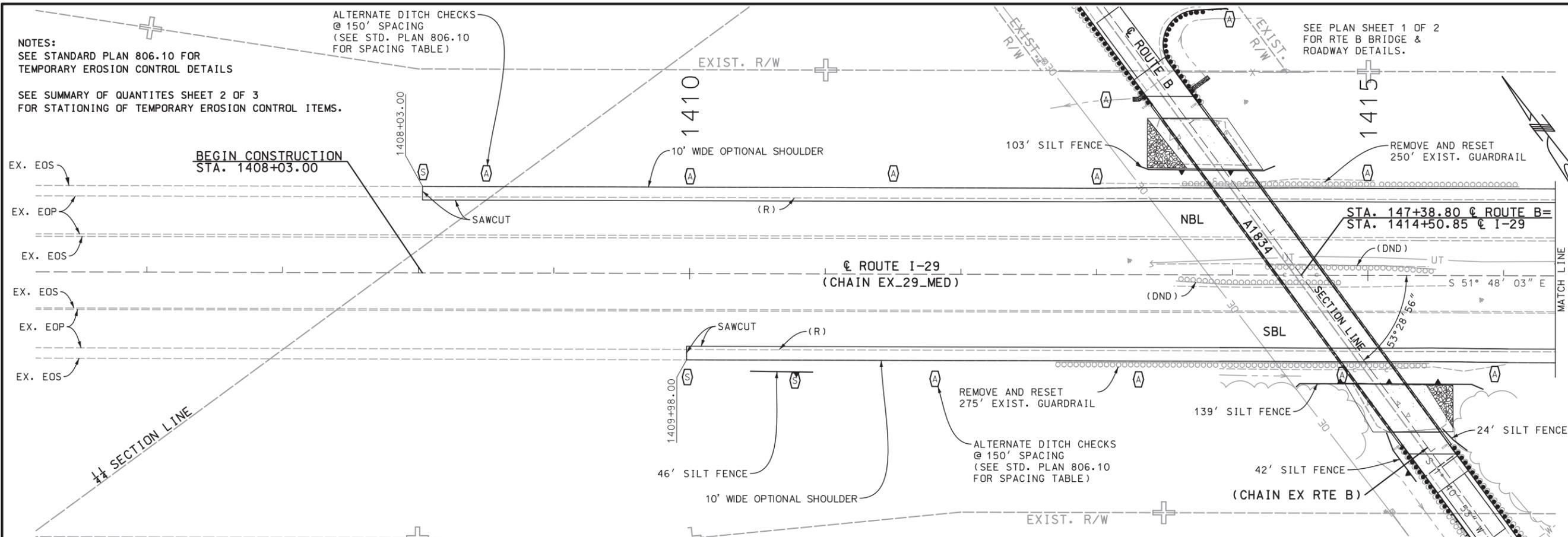
105 WEST CAPITOL JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

Olsson
 1301 BURLINGTON STREET, STE. 100
 NORTH KANSAS CITY, MO 64116
 CERTIFICATE OF AUTHORITY NO. 001592

NOTES:
 SEE STANDARD PLAN 806.10 FOR
 TEMPORARY EROSION CONTROL DETAILS
 SEE SUMMARY OF QUANTITIES SHEET 2 OF 3
 FOR STATIONING OF TEMPORARY EROSION CONTROL ITEMS.

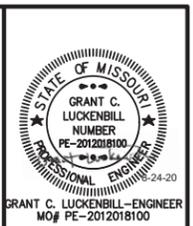
ALTERNATE DITCH CHECKS
 @ 150' SPACING
 (SEE STD. PLAN 806.10
 FOR SPACING TABLE)

SEE PLAN SHEET 1 OF 2
 FOR RTE B BRIDGE &
 ROADWAY DETAILS.



TEMPORARY EROSION CONTROL LEGEND
 (A) ALTERNATE DITCH CHECK
 (S) SEDIMENT TRAP
 S SILT FENCE

PLAN
 SHEET 2 OF 2

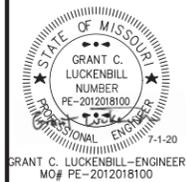


DATE PREPARED
 8/18/2020
 ROUTE B MO
 DISTRICT NW SHEET NO. 5
 COUNTY HOLT
 JOB NO. J1S3061
 CONTRACT ID.
 PROJECT NO.
 BRIDGE NO.

DATE	DESCRIPTION

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

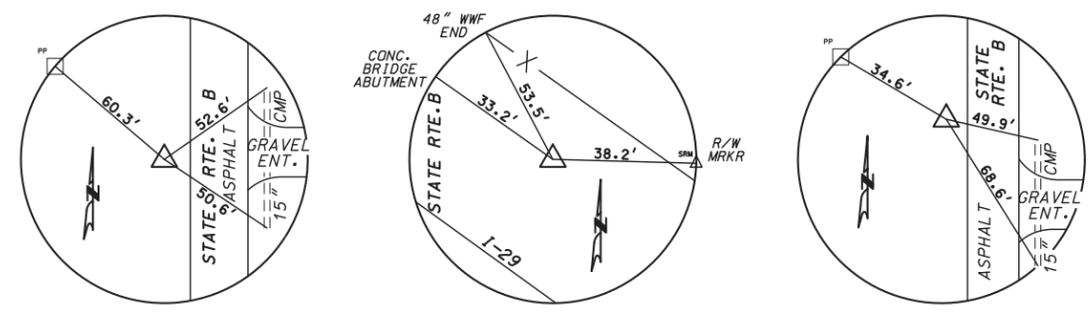
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DATE PREPARED 7/1/2020	
ROUTE B	STATE MO
DISTRICT NW	SHEET NO. 6
COUNTY HOLT	
JOB NO. J1S3061	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

- HORIZONTAL CONTROL STATEMENT: STATE PLANE COORDINATES ON THIS PROJECT WERE ESTABLISHED UTILIZING THE MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION GLOBAL NAVIGATION SATELLITE REAL TIME NETWORK FOR CONTINUOUSLY OPERATING REFERENCE STATIONS DURING FEBRUARY, 2020 AND ARE BASED ON THE MISSOURI COORDINATE SYSTEM OF 1983, WEST ZONE. THE AVERAGE COMBINED PROJECT GRID FACTOR IS 0.99992636 CALCULATED BY TRIMBLE GEOMATICS OFFICE.
- PROJECT COORDINATES ARE MODIFIED MISSOURI STATE PLANE COORDINATES AND WERE ESTABLISHED BY APPLYING THE INVERSE OF THE PROJECT GRID FACTOR (1.0000736433) ABOUT THE ORIGIN (0,0). AS PROVIDED TO EFK MOEN, LLC.
- VERTICAL DATUM IS NAVD 88. ELEVATIONS WERE ESTABLISHED ON CONTROL POINTS 1 THROUGH 4, USING A CELLULAR EQUIPPED SPECTRA PRECISION RANGER, AND BASED ON THE MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION GLOBAL NAVIGATION SATELLITE REAL TIME NETWORK FOR CONTINUOUS OPERATING REFERENCE STATIONS. FIELD WORK WAS PERFORMED DURING FEBRUARY, 2020.

Coordinate Point Listing
Missouri Coordinate System of 1983, West zone
 Reciprocal Average Grid Factor : 1.0000736433



CONTROL POINT NO. 1
 SET IRON ROD W/CAP
 N: 1402248.146
 E: 2625081.164
 EL: 1047.19
 RTE B @ STATION
 142+98.86 15.83' RT

CONTROL POINT NO. 2
 SET IRON ROD W/CAP
 N: 1401933.608
 E: 2625130.573
 EL: 1056.02
 RTE B @ STATION
 146+11.81 42.79' LT
 I-29 @ STATION
 1414+09.67 127.52' LT

CONTROL POINT NO. 3
 SET IRON ROD W/CAP
 N: 1401481.023
 E: 2625057.205
 EL: 1056.23
 RTE B @ STATION
 150+66.37 17.14' RT

COORDINATE POINT SHEET					
STATION (1)	LOC.	OFFSET (1)	MODIFIED STATE PLANE		DESCRIPTION
			NORTHING	EASTING	
I-29					
1399+00.00	CL		1402766.9692	2623865.3196	BEGIN CHAIN EX 29 MED
1434+99.85	CL		1400540.8337	2626694.3195	END CHAIN EX 29 MED
RTE B					
134+25.00	CL		1403121.1629	2625122.6285	BEGIN CHAIN EX RTE B
149+14.00	CL		1401632.8040	2625078.9394	PI CHAIN EX RTE B
156+65.00	CL		1400882.1469	2625056.2490	END CHAIN EX RTE B
CR 270					
1412+95.36	CL		1402069.1161	2625091.7468	BEGIN CHAIN EX CR 270
0+00.00	CL		1400962.0994	2626498.5571	END CHAIN EX CR 270

1 GROUND DISTANCE

TEMPORARY BENCHMARKS								
SHEET NO.	STATION (1)	OFFSET (1)	LOCATION	MODIFIED STATE PLANE		ELEV.	DESCRIPTION	POINT NO.
				NORTHING	EASTING			
4	145+00.13	58.97' RT	ROUTE B	1402048.2230	2625032.1380	1049.0100	LONG NAIL IN PP	TBM-A
4	149+18.86	49.27' RT	ROUTE B	1401629.4310	2625029.5470	1062.4700	LONG NAIL IN PP	TBM-B

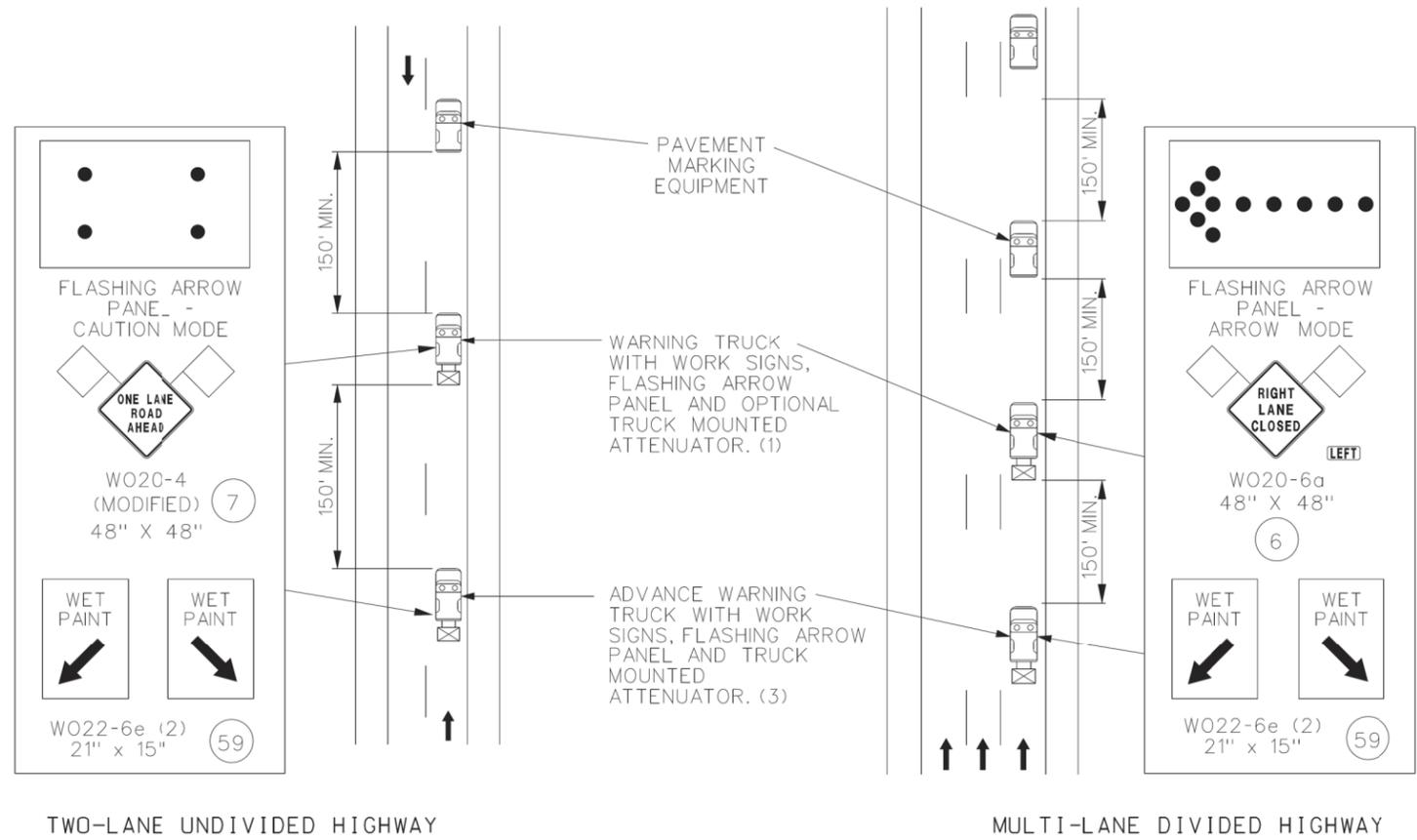
DESCRIPTION							
DATE							

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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COORDINATE POINTS
 SHEET 1 OF 1

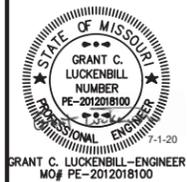


TWO-LANE UNDIVIDED HIGHWAY

MULTI-LANE DIVIDED HIGHWAY

- NOTES:
- ALL SIGNS HAVE TYPE 3 FLUORESCENT ORANGE REFLECTIVE SHEETING.
- (1) TRUCK IS OPTIONAL ON TWO-LANE UNDIVIDED HIGHWAYS IF SIGNING AND ARROW BOARD IS MOUNTED ON THE PAVEMENT MARKING EQUIPMENT.
 - (2) WET PAINT SIGNS ARE INSTALLED TO INDICATE THE SIDE IN WHICH THE PAVEMENT MARKING MATERIAL IS BEING APPLIED. AT THE CONTRACTOR'S OPTION, A FRONT FACING WET PAINT SIGN MAY BE INSTALLED ON THE LEFT SIDE OF THE PAVEMENT MARKING EQUIPMENT.
 - (3) ADVANCE WARNING TRUCK IS POSITIONED AT THE NO TRACK POINT OF THE PAVEMENT MARKING MATERIAL OR SPACING SHOWN, WHICHEVER IS GREATER.

STRIPING OPERATION



DATE PREPARED
7/1/2020

ROUTE B	STATE MO
DISTRICT NW	SHEET NO. 10
COUNTY HOLT	
JOB NO. J1S3061	
CONTRACT ID.	
PROJECT NO.	
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DATE	DESCRIPTION

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JEFFERSON CITY, MO 65102
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olsson

1301 BURLINGTON STREET, STE. 100
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CERTIFICATE OF AUTHORITY NO. 001592

MATCHLINE D

MATCHLINE E



W04-1aL

6AL

1500'

WORK ZONE 54

W020-5aP

SPEED LIMIT 60 4

R2-1

750'



W020-5

5

MEDIAN I-29



W020-6a

6



W03-5

3

2640'

1320'



W020-1

2

MEDIAN I-29

PHASE 1 TRAFFIC CONTROL LEGEND

-  PHASE 1 WORK ZONE
-  SIGN (SINGLE SIDED)
-  CHANNELIZER
-  DIRECTION OF TRAFFIC
-  FLASHING ARROW PANEL



SCALE



TRAFFIC CONTROL SHEET 7 OF 16



DATE PREPARED 7/1/2020

ROUTE B STATE MO

DISTRICT NW SHEET NO. 13

COUNTY HOLT

JOB NO. J1S3061

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)



1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
CERTIFICATE OF AUTHORITY NO. 001592

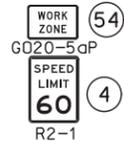
MATCHLINE I

MATCHLINE J



6AL

1500'



750'



MEDIAN I-29



6



3

2640'

1320'

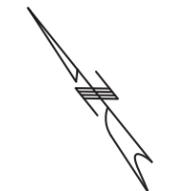
MEDIAN I-29



2

PHASE 2 TRAFFIC CONTROL LEGEND

-  PHASE 2 WORK ZONE
-  SIGN (SINGLE SIDED)
-  CHANNELIZER
-  DIRECTION OF TRAFFIC
-  FLASHING ARROW PANEL



SCALE



TRAFFIC CONTROL SHEET 10 OF 16



DATE PREPARED 7/1/2020

ROUTE B STATE MO DISTRICT NW SHEET NO. 16

COUNTY HOLT JOB NO. J1S3061 CONTRACT ID.

PROJECT NO. BRIDGE NO.

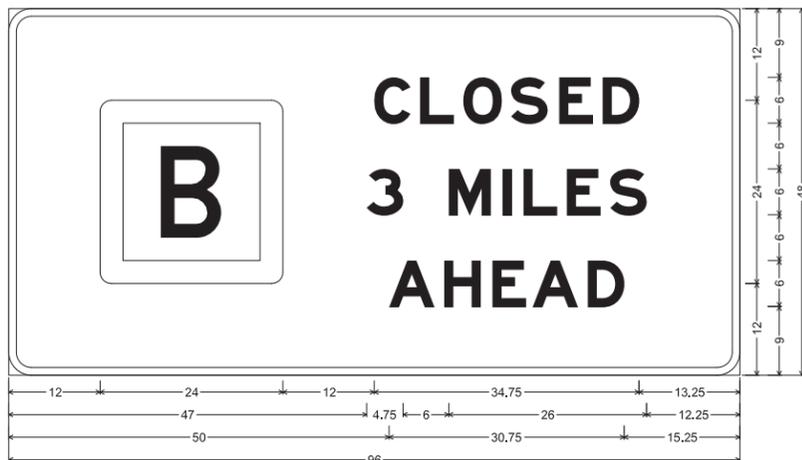
DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION



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

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
CERTIFICATE OF AUTHORITY NO. 001592



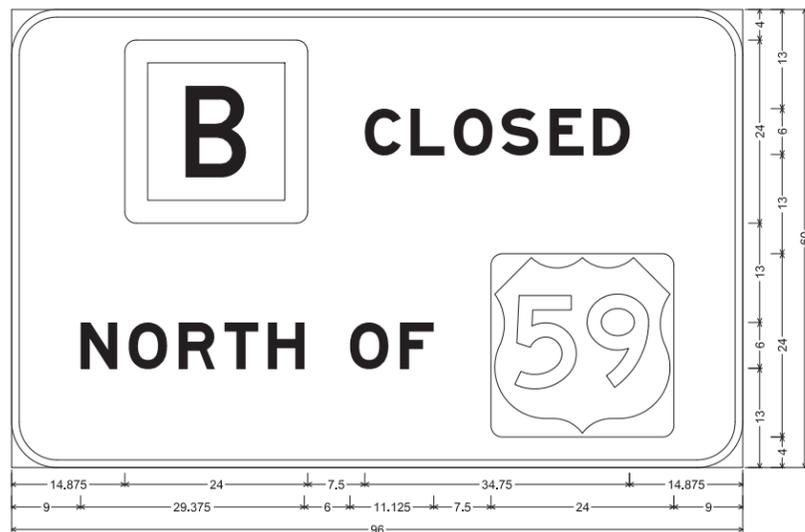
MO4-13 SHF-FLAT SHEET FLUORESCENT; 3,000" Radius, 1,000" Border, Black on Orange;

[CLOSED] E Mod; [3 MILES] E Mod; [AHEAD] E Mod;

Table of letter and object lefts.

B	C	L	O	S	E	D
12,000	48,000	54,000	59,750	66,000	72,250	78,000
3	M	I	L	E	S	
47,000	57,750	64,875	67,625	73,250	79,000	
A	H	E	A	D		
50,000	57,125	63,500	68,750	76,000		

59



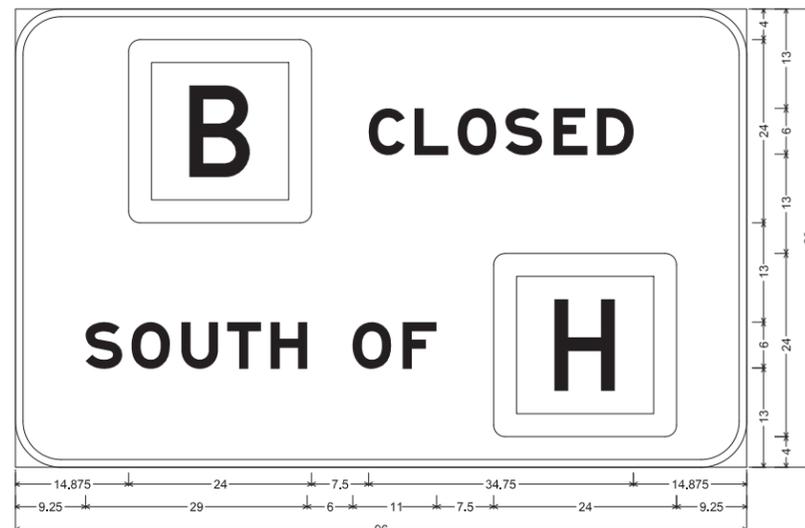
MO4-13 SHF-FLAT SHEET FLUORESCENT; 6,000" Radius, 1,000" Border, Black on Orange;

[CLOSED] E Mod; [NORTH OF] E Mod;

Table of letter and object lefts.

B	C	L	O	S	E	D
14,875	46,375	52,375	58,125	64,375	70,625	76,375
N	O	R	T	H	O	F
9,000	15,375	21,875	28,000	33,625	44,375	51,000

51K



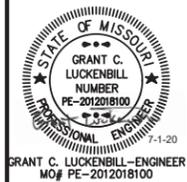
MO4-13 SHF-FLAT SHEET FLUORESCENT; 6,000" Radius, 1,000" Border, Black on Orange;

[CLOSED] E Mod; [SOUTH OF] E Mod;

Table of letter and object lefts.

B	C	L	O	S	E	D
14,875	46,375	52,375	58,125	64,375	70,625	76,375
S	O	U	T	H	O	F
9,250	15,250	21,750	27,750	33,500	44,250	50,875

51L



GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED
7/1/2020

ROUTE
B

STATE
MO

DISTRICT
NW

SHEET NO.
22

COUNTY
HOLT

JOB NO.
J1S3061

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)

1301 BURLINGTON STREET, STE. 100 NORTH KANSAS CITY, MO 64116

CERTIFICATE OF AUTHORITY NO. 001592

olsson

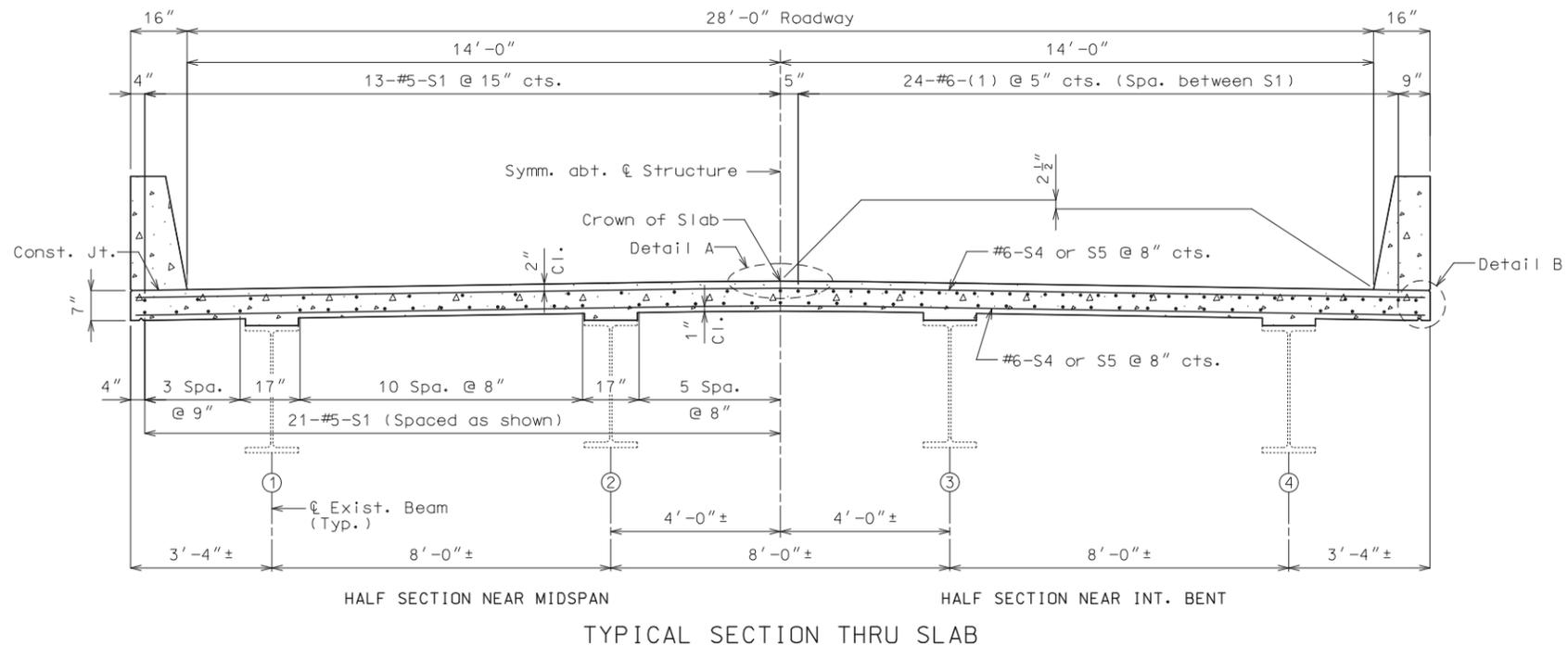
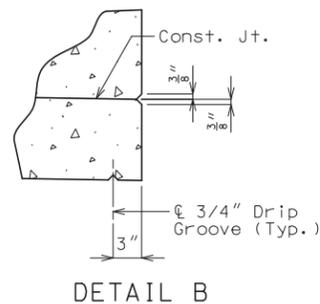
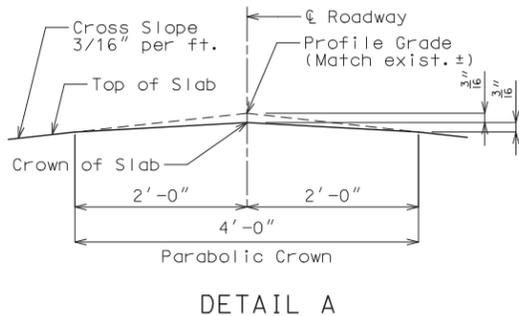
U.I.P. AND REDECK (54'-87'-87'-54') CONTINUOUS WIDE FLANGE BEAM SPANS (SKEW: 36°31' L.A.)

Required Lap Length For Bar Splices **

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

** Unless otherwise shown.

Table Showing S2 & S3 Bar Lengths						
Span	Int. Bent No. 2		Int. Bent No. 3		Int. Bent No. 4	
	Span 1	Span 2	Span 2	Span 3	Span 3	Span 4
Length	21'-6"	30'-0"	30'-0"	30'-0"	30'-0"	21'-6"
(1)	S2		S3		S2	



General Notes:

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

Design Loading:
H15 (1965) (Existing)
HS20-44 (New Construction)
15 lb/sf Future Wearing Surface
Earth - 120 lb/cf, Equivalent Fluid Pressure 30 lb/cf
Fatigue Stress - Case III

Design Unit Stresses:
Class B-1 Concrete (Barrier) $f'c = 4,000$ psi
Class B-2 Concrete (Superstructure, except Barrier) $f'c = 4,000$ 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.

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

Bars bonded in 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.

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

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

Estimated Quantities for Slab on Steel		
Item	Unit	Total
Class B-2 Concrete	cu. yard	194
Reinforcing Steel (Epoxy Coated)	pound	71,090

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

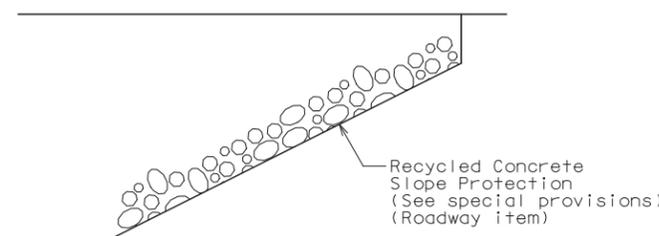
Method of forming the slab shall be in accordance with Sec 703. All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness class SC 4 and a finish type I, II or III.

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

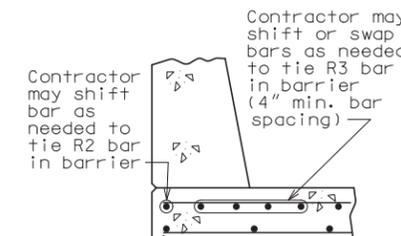
For Optional Stay-In-Place Form Details, see Sheet No. 2.

Estimated Quantities		
Item	Unit	Total
Removal of Existing Bridge Deck	sq. foot	8818
Bridge Approach Slab (Minor Road)	sq. yard	125
Slab on Steel	sq. yard	977
Type H Barrier	linear foot	622
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Slab Drain	each	32
Surface Preparation for Recoating Structural Steel	sq. foot	700
Field Application of Inorganic Zinc Primer	sq. foot	700
Intermediate Field Coat (System G)	sq. foot	700
Finish Field Coat (System G)	sq. foot	700
Non-Destructive Testing	linear foot	77
Strip Seal Expansion Joint System	linear foot	70

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



OPTIONAL SLOPE PROTECTION DETAIL



OPTIONAL SHIFTING TOP BARS AT BARRIER

REPAIRS TO BRIDGE:
ROUTE B FROM ROUTE 59 TO ROUTE 120
ABOUT 3.2 MILES NORTH OF ROUTE 59
STA. 145+95.41± (MATCH EXISTING)

STD. 606.22
STD. 609.00
STD. 706.35

GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED 6/30/2020	
ROUTE B	STATE MO
DISTRICT BR	SHEET NO. 1
COUNTY HOLT	
JOB NO. J1S3061	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A18341	
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

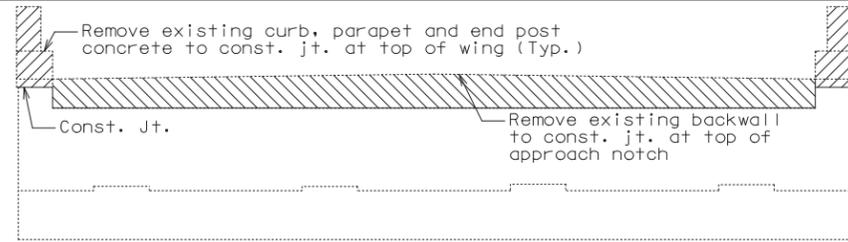
MOTD

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olsson

7301 WEST 133RD STREET
OVERLAND PARK, KS 66213
CERTIFICATE OF AUTHORITY NO. 001592

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



DETAILS OF CONCRETE REMOVAL AT END BENTS

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

A smooth, level surface shall be provided at Bents No. 1 & 5 removal lines.

General Notes:

Stay-In-Place Forms:

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

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

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

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

The contractor shall provide a method of preventing the direct contact of the stay-in-place forms and connection components with uncoated weathering steel members that is approved by the engineer.

Pouring and Finishing Slab:

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

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

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

Haunching:

(1) Slab is to be considered a uniform thickness as shown on the plans. Haunching will vary. See front sheet for slab thickness.

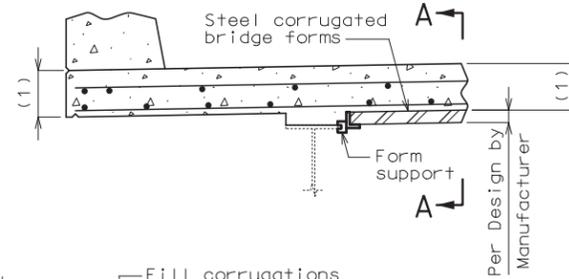
Structural Steel Protective Coating:

Protective Coating: System G in accordance with Sec 1081. All existing structural steel including bearings within 10' of joint at End Bents No. 1 & 5 shall be recoated with System G.

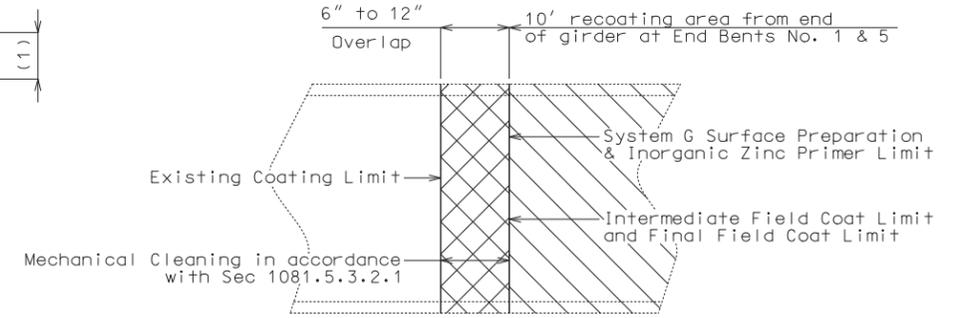
Surface Preparation: Surface preparation of the existing steel shall be in accordance with Sec 1081 for Recoating of Structural Steel (System G, H or I). The cost of surface preparation will be considered completely covered by the contract unit price per sq. foot for Surface Preparation for Recoating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

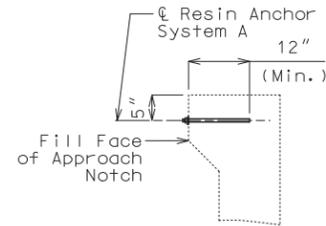


SECTION A-A
OPTIONAL STAY-IN-PLACE FORM DETAILS

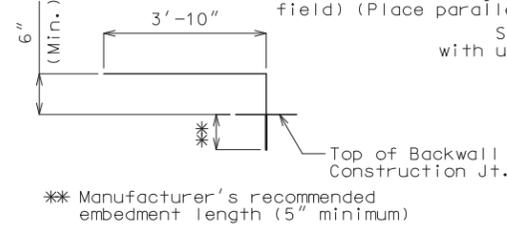


PART ELEVATION SHOWING LIMITS OF PAINT OVERLAP

Limits of Paint Overlap: System G shall overlap the existing coating between 6 inches and 12 inches in order to achieve maximum coverage at the paint limit of each complete system near the expansion and contraction areas. The final field coating shall be masked to provide crisp, straight lines and to prevent overspray beyond the overlap required.



System A
(34 req'd. at End Bent No. 1)
(34 req'd. at End Bent No. 5)



System B
(34 req'd. at End Bent No. 1)
(34 req'd. at End Bent No. 5)

DETAILS OF RESIN ANCHOR SYSTEMS

Resin Anchor System Notes:

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

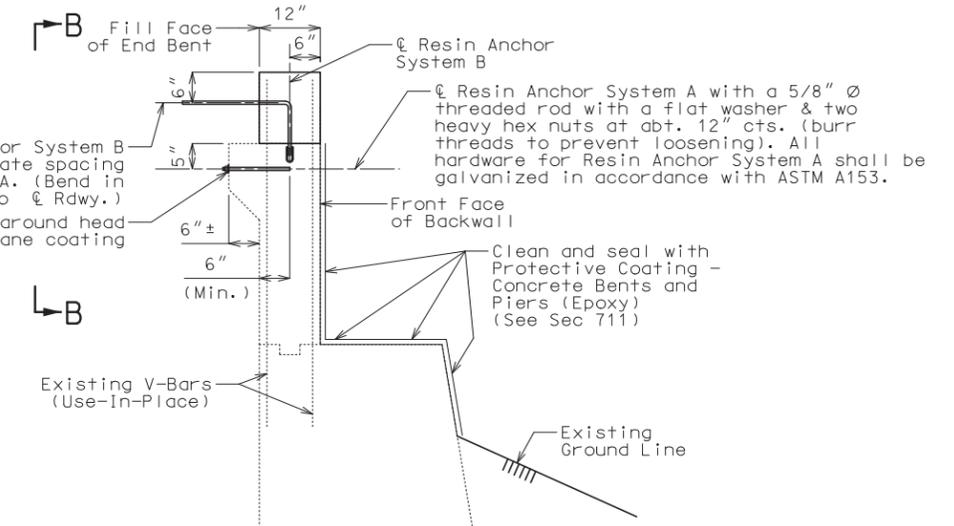
Cost of furnishing and installing the resin anchor systems, complete in place, will be considered completely covered by the contract unit price for Slab on Steel.

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".

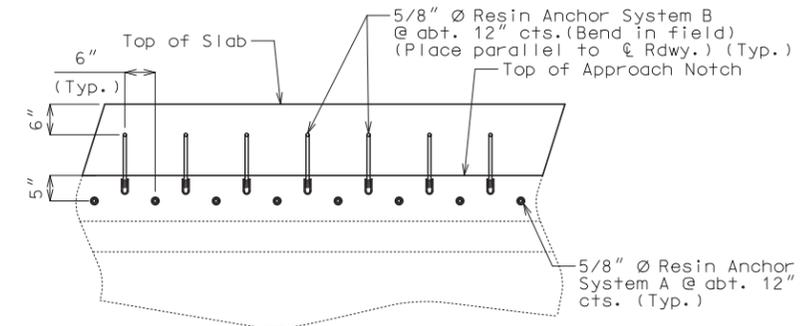
An epoxy coated #5 grade 60 reinforcing bar shall be substituted for the 5/8" Ø threaded rod.

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.



PART SECTION THRU END BENTS NO. 1 & 5



ELEVATION B-B

GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED 6/30/2020	
ROUTE B	STATE MO
DISTRICT BR	SHEET NO. 2
COUNTY HOLT	
JOB NO. J1S3061	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A18341	

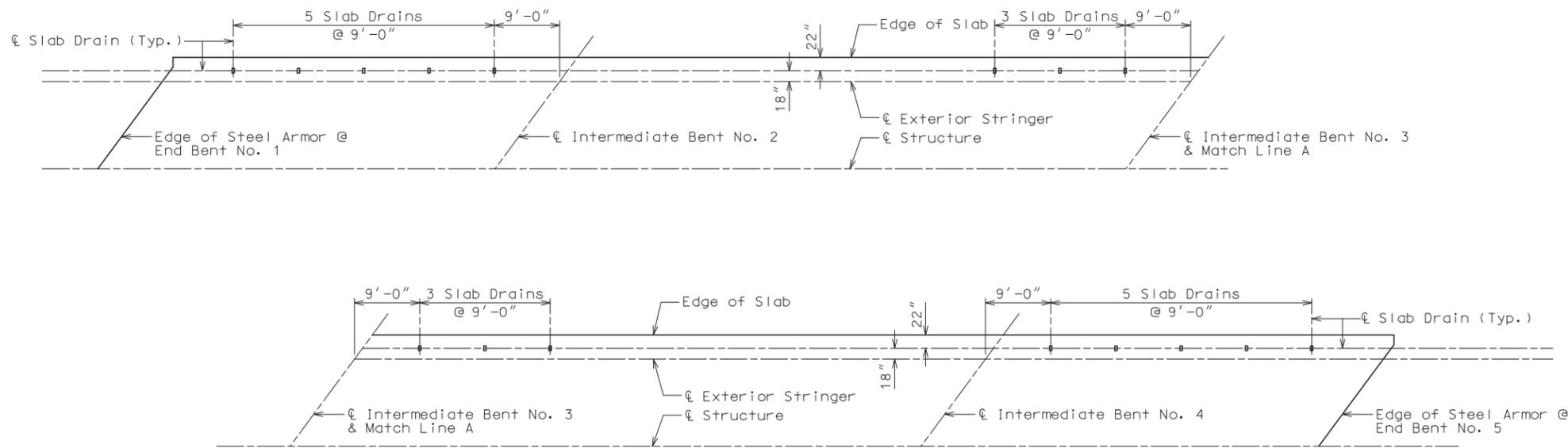
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

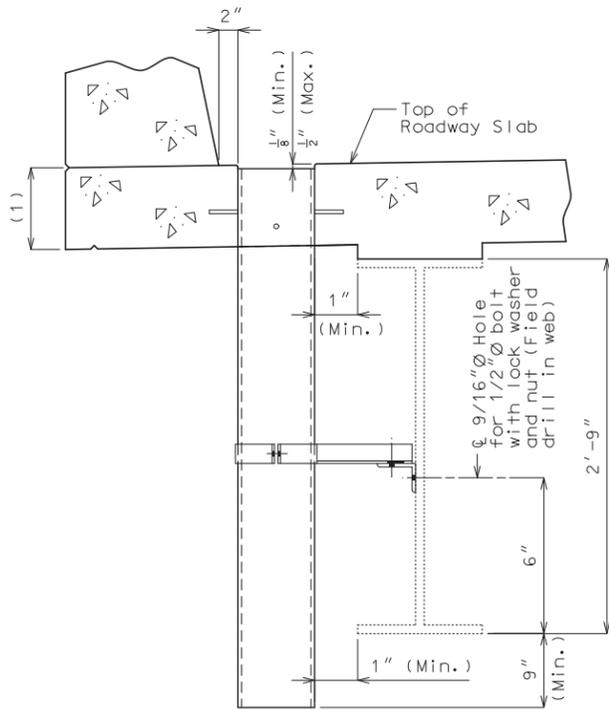
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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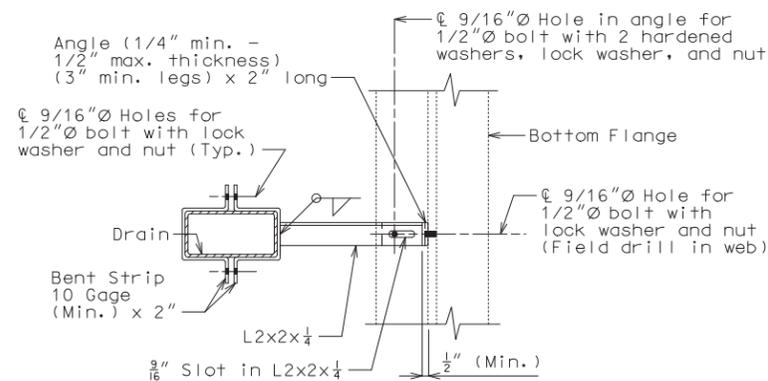
7301 WEST 133RD STREET
OVERLAND PARK, KS 66213
CERTIFICATE OF
AUTHORITY NO. 001592



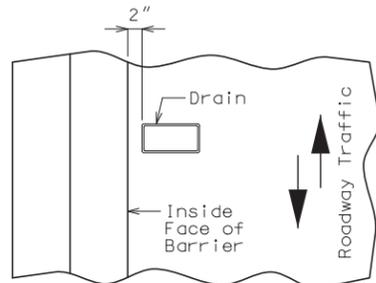
HALF PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS
(Left side drains are shown, right side is similar by 180° rotation)



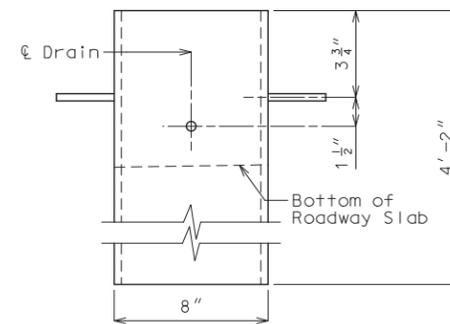
PART SECTION NEAR DRAIN



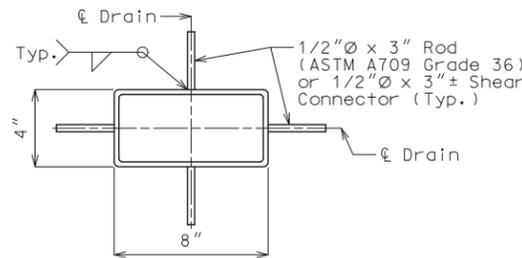
PART SECTION SHOWING BRACKET ASSEMBLY



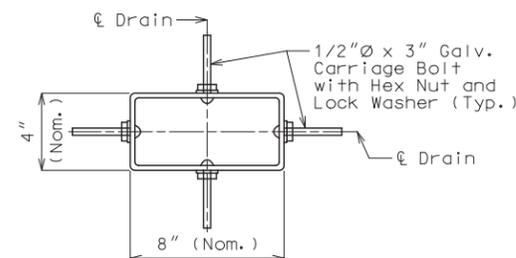
PART PLAN OF SLAB AT DRAIN



ELEVATION OF DRAIN



PLAN OF STEEL DRAIN OPTION



PLAN OF FRP DRAIN OPTION

General Notes:

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

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

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

Reinforcing steel shall be shifted to clear drains.

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

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 shall be shifted to the minimum extent necessary to field drill in the existing web.

(1) See front sheet for slab thickness.

Notes for Steel Drain:

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.

Outside dimensions of drains are 8" x 4".

The drains shall be galvanized in accordance with ASTM A123.

Notes for FRP Drain:

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

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

Minimum reinforced wall thickness shall be 1/4 inch.

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

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

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

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



DATE PREPARED 6/30/2020	
ROUTE B	STATE MO
DISTRICT BR	SHEET NO. 3
COUNTY HOLT	
JOB NO. J1S3061	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A18341	

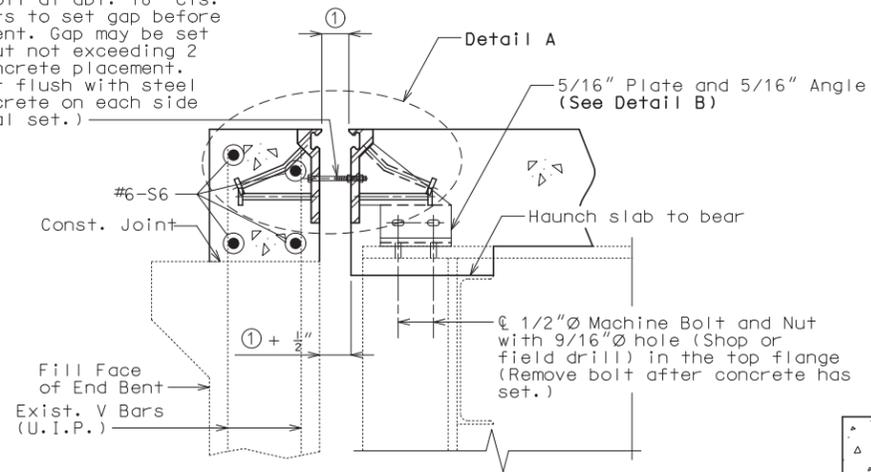
DESCRIPTION	DATE

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

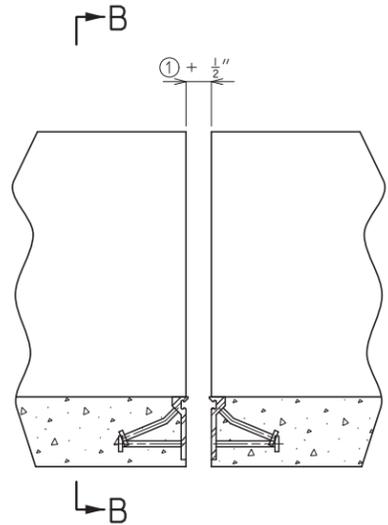
olsson
7301 WEST 133RD STREET
OVERLAND PARK, KS 66213
CERTIFICATE OF AUTHORITY NO. 001592

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

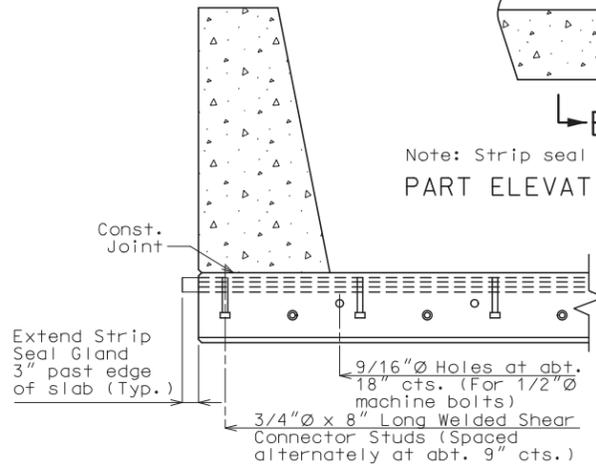
1/2"Ø Machine Bolt at abt. 18" cts.
(Use two hex nuts to set gap before concrete placement. Gap may be set anytime up to but not exceeding 2 hours before concrete placement. Cut machine bolt flush with steel armor after concrete on each side has taken initial set.)



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 SECTION B-B

GENERAL NOTES:

Expansion joint system shall be fabricated in one section, except for staged 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.

Longitudinal reinforcing steel shall be placed so that ends shall be 1" from the vertical leg of the steel armor at the expansion joint system.

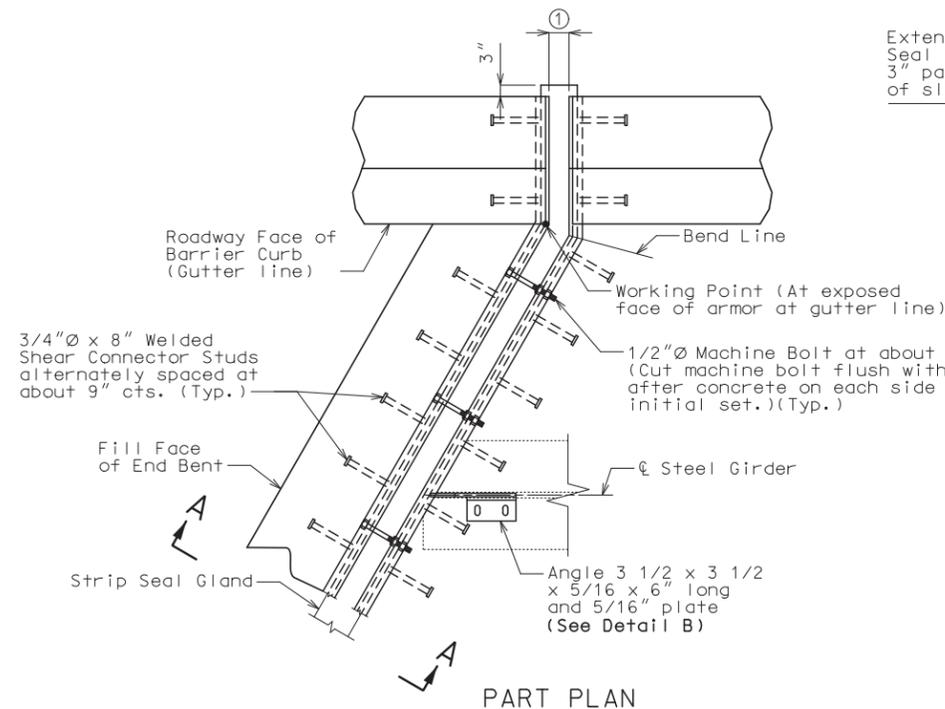
Concrete shall be forced under and around steel armor and anchors. Proper consolidation of the concrete shall be achieved by localized internal vibration.

② The installation temperature shall be taken as the actual air temperature averaged over the 24-hour period immediately preceding installation.

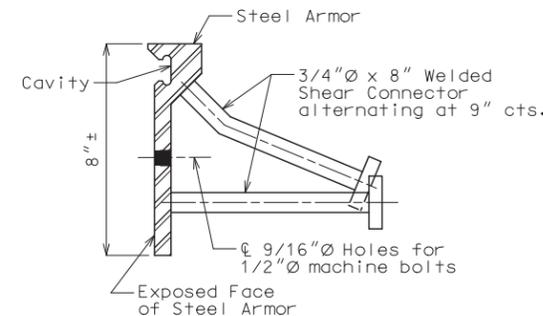
③ MoDOT Construction personnel will indicate the strip seal expansion joint system installed.

Steel armor may also be referred to as extrusion or rail.

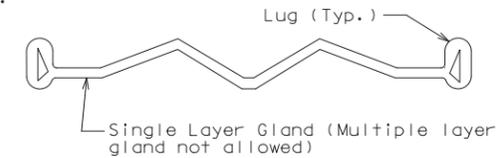
The cost of concrete and reinforcement in the backwall will be considered completely covered by the contract unit price for Slab on Steel.



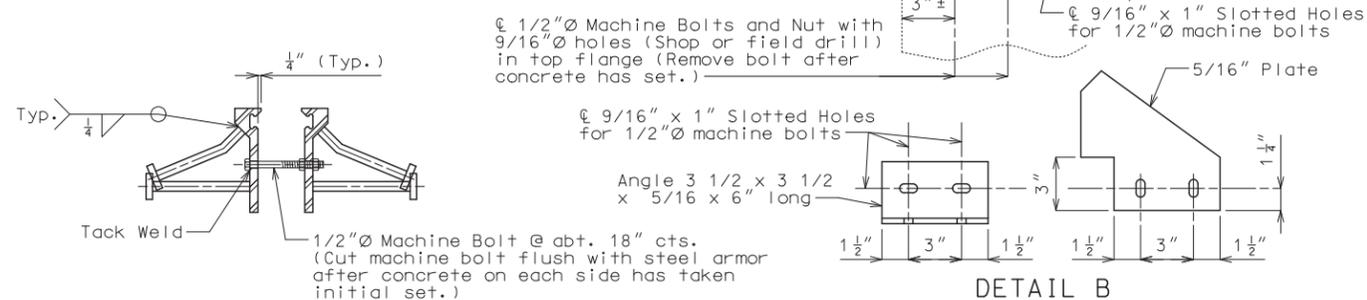
PART PLAN



DETAIL OF JOINT ARMOR



DETAIL OF GLAND



DETAIL B

DETAILS OF STRIP SEAL EXPANSION JOINT SYSTEM AT END BENTS NO. 1 & 5

Table of Allowed Transverse Strip Seal Expansion Joint System									
Manufacturer	Strip Seal System (Designated Name)	Movement Parallel to RDWY	Allowed Installation Gap Normal to Joint at RDWY Surface @ Air/Surface Temperature						③
			①		②		③		
			@ 40°F	@ 50°F	@ 60°F	@ 70°F	@ 80°F	@ 90°F	
D S Brown	Strip seal L2-400	2"	2 3/16"	2 1/8"	2"	1 7/8"	1 13/16"	1 11/16"	□
Watson Bowman Acme (Wabo)	Strip seal SE-300	2"	2 3/16"	2 1/8"	2"	1 7/8"	1 13/16"	1 11/16"	□
Watson Bowman Acme (Wabo)	Strip seal SE-400	2"	2 3/16"	2 1/8"	2"	1 7/8"	1 13/16"	1 11/16"	□

GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED 6/30/2020	
ROUTE B	STATE MO
DISTRICT BR	SHEET NO. 4
COUNTY HOLT	
JOB NO. J1S3061	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A18341	

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

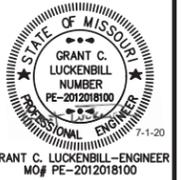
olsson

7301 WEST 133RD STREET
OVERLAND PARK, KS 66213
CERTIFICATE OF AUTHORITY NO. 001592

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

SUMMARY OF QUANTITIES



DATE PREPARED
7/1/2020

ROUTE A STATE MO
DISTRICT NW SHEET NO. 3

COUNTY DEKALB
JOB NO. J1S3136
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)

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
CERTIFICATE OF AUTHORITY NO. 001592

REMOVAL OF IMPROVEMENTS				
SHEET NO.	STA.	STA.	LOCATION	DESCRIPTION
4	415+17.01	416+05.77	ROUTE A RT.	87.5 LF GUARDRAIL
4	415+78.86	416+05.20	ROUTE A LT.	26' LF GUARDRAIL
4	415+92.00		ROUTE A	22' SAWCUT
4	415+92.00	416+07.00	ROUTE A	43.3 SY PAVEMENT
4	416+06.61		ROUTE A RT.	SIGN
4	416+06.76		ROUTE A LT.	SIGN
4	419+23.00	419+38.00	ROUTE A	43.3 SY PAVEMENT
4	419+23.11		ROUTE A LT.	SIGN
4	419+23.24		ROUTE A RT.	SIGN
4	419+24.90	419+50.28	ROUTE A RT.	26' LF GUARDRAIL
4	419+24.58	419+63.49	ROUTE A LT.	39' LF GUARDRAIL
4	419+38.00		ROUTE A	22' SAWCUT
1 LUMP SUM				

MODIFIED COLDMILLING (DEPTH TRANSITIONS)					
SHEET NO.	STA.	STA.	LOCATION	WIDTH (FT.)	AREA (SY)
4	415+07.00	415+92.00	ROUTE A	22	208
4	419+38.00	420+23.00	ROUTE A	22	208
TOTAL					416

ADDITIONAL MOBILIZATION FOR SEEDING
4 EACH

SEEDING AND MULCH				
SHEET NO.	STA.	STA.	LOCATION	SEEDING COOL SEASON MIX (AC.)
4	414+30.00	416+07.00	ROUTE A RT.	0.04
4	415+00.00	416+07.00	ROUTE A LT.	0.02
4	419+23.00	420+23.00	ROUTE A RT.	0.02
4	419+23.00	421+00.00	ROUTE A LT.	0.04
TOTAL				0.1
PAY TOTAL				1.0

ASPHALT PAVEMENT						
SHEET NO.	STA.	STA.	LOCATION	BP-1 PG62-22 1-3/4" (TON)	TACK COAT (GAL)	COMMENTS
4	415+07.00	415+92.00	ROUTE A NORTH	20.0	21	
4	419+38.00	420+23.00	ROUTE A SOUTH	20.0	21	
SAFETY EDGE SLOPE				0.8		ADD 2% FOR SAFETY EDGE SLOPE
TOTALS				40.8	42	

SIGNING								
SHEET NO.	STA.	LOCATION	TYPE, SIZE & SQUARE FEET			PERFORATED SQUARE STEEL TUBE POST (2 IN.)		
			SIGN	SIZE	SH-FLAT SHEET FLUORESCENT 9035004A (SF)	POST 9031270A (LF)	ANCHOR 12 GA. 9031271 (LF)	
4	416+07.00	ROUTE A RT.	OM3-R	12"X36"	3	10	3	
4	416+07.00	ROUTE A LT.	OM3-L	12"X36"	3	10	3	
4	419+23.00	ROUTE A LT.	OM3-L	12"X36"	3	10	3	
4	419+23.00	ROUTE A RT.	OM3-R	12"X36"	3	10	3	
TOTALS						12	40	12

CONCRETE APPROACH PAVEMENT					
SHEET NO.	STA.	STA.	LOCATION	CONCRETE APPROACH PAVEMENT (SY)	4" TYPE 5 AGGREGATE BASE (SY)
4	415+92.00	416+07.00	ROUTE A	43.3	47
4	419+23.00	419+38.00	ROUTE A	43.3	47
TOTAL				86.6	94

MOBILIZATION
1 LUMP SUM

CONTRACTOR FURNISHED
SURVEYING & STAKING
1 LUMP SUM

PAVEMENT MARKING						
SHEET NO.	STA.	STA.	LOCATION	HIGH BUILD WATERBORNE PAINT, TYPE L BEADS		REMARKS
				4" INTERMITTENT YELLOW (L.F.)	6" SOLID WHITE (L.F.)	
4	415+07.00	420+23.00	ROUTE A	129		
4	415+07.00	420+23.00	ROUTE A LT. & RT.		1032	EDGE LINE
TOTALS				129	1032	

TEMPORARY EROSION CONTROL					
SHEET NO.	STA.	STA.	LOCATION	SILT FENCE (FT)	SED. REM. (C.Y.)
4	414+31.10	416+18.00	ROUTE A RT.	210	2
4	415+16.65	416+18.00	ROUTE A LT.	133	1
4	419+12.62	420+12.69	ROUTE A RT.	122	1
4	419+12.62	421+03.03	ROUTE A LT.	214	2
TOTALS				679	6

GUARDRAIL								
SHEET NO.	STA.	STA.	LOCATION	MGS GUARDRAIL 8 FT POST	TYPE A CRASHWORTHY END TERMINAL (MASH) EACH	MGS BRIDGE APPROACH TRANSITION "REGULAR/NO CURB" EACH	SHAPING SLOPES CLASS III	DELINEATORS WHITE 50' SPACING
				LF			100 FT.	EACH
4	414+32.00	416+07.00	ROUTE A RT.	87.5	1	1	1.8	3
4	415+19.50	416+07.00	ROUTE A LT.		1	1	0.9	1
4	419+23.00	420+10.50	ROUTE A RT.		1	1	0.9	3
4	419+23.00	420+98.00	ROUTE A LT.	87.5	1	1	1.8	3
TOTALS				175	4	4	5	

LINEAR GRADING (CLASS 1)				
SHEET NO.	STA.	STA.	LOCATION	LINEAR GRADING STA.
4	415+92.00	416+07.00	ROUTE A	0.2
4	419+23.00	419+38.00	ROUTE A	0.2
TOTAL				0.4

NO DIRECT PAYMENT FOR DELINEATORS

SUMMARY OF QUANTITIES
SHEET 1 OF 2

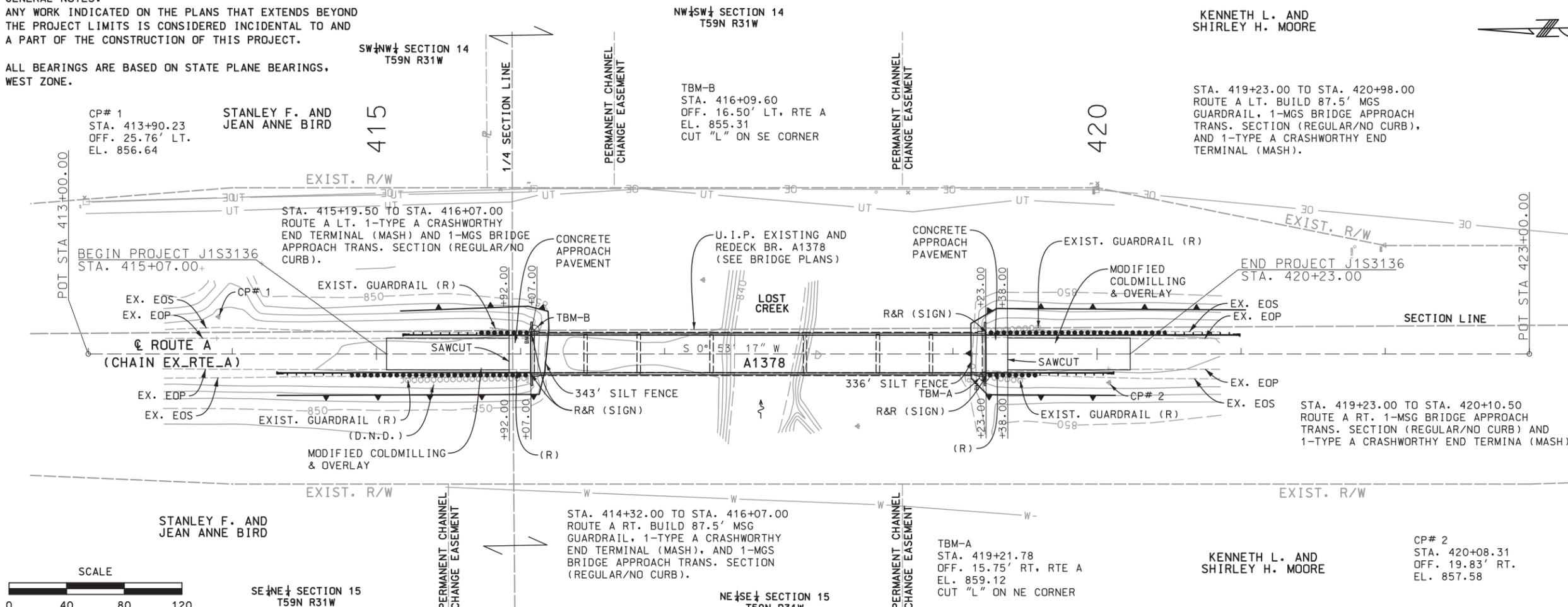
SIGN	SIZE	AREA	QTY	TOTAL	QTY	TOTAL	SIGN	DESCRIPTION
	IN.	SQ.FT.	EACH	AREA	RELOC	RELOC	NUM.	
				SQ.FT.	EACH	SQ.FT.		
WARNING SIGNS								
W01-1L	48X48	16.00						TURN (SYMBOL LEFT ARROW)
W01-1R	48X48	16.00						TURN (SYMBOL RIGHT ARROW)
W01-2L	48X48	16.00						CURVE (SYMBOL LEFT ARROW)
W01-2R	48X48	16.00						CURVE (SYMBOL RIGHT ARROW)
W01-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT ARROW)
W01-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT ARROW)
W01-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT ARROW)
W01-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT ARROW)
W01-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
W01-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
W01-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
W01-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
W01-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
W01-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
W01-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
W01-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
W01-8	18X24	3.00						CHEVRON (SYMBOL)
W01-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
W03-1	48X48	16.00						STOP AHEAD (SYMBOL)
W03-2	48X48	16.00						YIELD AHEAD (SYMBOL)
W03-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
W03-4	48X48	16.00						BE PREPARED TO STOP
W03-5	48X48	16.00						SPEED LIMIT AHEAD
W04-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
W04-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
W04-1aL	48X48	16.00						MERGE (ARROW SYMBOL)
W04-1aR	48X48	16.00						MERGE (ARROW SYMBOL)
W05-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
W05-3	48X48	16.00						ONE LANE BRIDGE
W05-5	48X48	16.00						NARROW LANES
W06-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
W06-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
W06-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
W07-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
W08-1	48X48	16.00						BUMP
W08-2	48X48	16.00						DIP
W08-3	48X48	16.00						PAVEMENT ENDS
W08-4	48X48	16.00						SOFT SHOULDER
W08-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
W08-6	48X48	16.00						TRUCK CROSSING
W08-6c	48X48	16.00						TRUCK ENTRANCE
W08-7	36X36	9.00						LOOSE GRAVEL
W08-7a	36X36	9.00						FRESH OIL/LOOSE GRAVEL
W08-9	48X48	16.00						LOW SHOULDER
W08-11	48X48	16.00						UNEVEN LANES
W08-12	48X48	16.00						NO CENTER LINE
W08-15	48X48	16.00						GROOVED PAVEMENT
W08-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
W08-17	48X48	16.00						SHOULDER DROP-OFF (SYMBOL)
W08-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
W012-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
W012-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
W012-2X	24X18	3.00						LOW CLEARANCE (PLAQUE)
W012-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
W012-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
W012-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
W013-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
W016-2	30X24	5.00						XXX FEET (PLAQUE)
W016-3	30X24	5.00						X MILE (PLAQUE)
W020-1	48X48	16.00	2	32.00			2	ROAD/BRIDGE/RAMP WORK AHEAD
W020-2	48X48	16.00	2	32.00			18	DETOUR AHEAD
W020-3	48X48	16.00	2	32.00			20	ROAD CLOSED AHEAD
W020-4	48X48	16.00						ONE LANE ROAD AHEAD
W020-5	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED AHEAD
W020-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
W020-6a	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED
W020-7a	48X48	16.00						FLAGGER (SYMBOL) WITH FLAGS
W021-2	36X36	9.00						FRESH OIL
W021-5	48X48	16.00						SHOULDER WORK AHEAD
W021-5a	48X48	16.00						RIGHT (LEFT) SHOULDER CLOSED
W022-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
W022-3	42X36	10.50						END BLASTING ZONE
G022-1	21X15	2.19						WET PAINT (ARROW PIVOTS)

SIGN	SIZE	AREA	QTY	TOTAL	QTY	TOTAL	SIGN	DESCRIPTION
	IN.	SQ.FT.	EACH	AREA	RELOC	RELOC	NUM.	
				SQ.FT.	EACH	SQ.FT.		
GUIDE SIGNS								
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
G020-1	60X24	10.00						ROAD WORK NEXT XX MILES
G020-2	48X24	8.00	2	16.00			26	END ROAD WORK
G020-4	36X18	4.50						PILOT CAR FOLLOW ME
G020-4a	42X30	8.75						PLEASE WAIT FOR PILOT CAR
G020-5aP	36X24	6.00						WORK ZONE (PLAQUE)
M04-8a	24X18	3.00	2	6.00			52	END DETOUR
M04-9L	48X36	12.00						DETOUR (LEFT ARROW)
M04-9R	48X36	12.00						DETOUR (RIGHT ARROW)
M04-9P	48X12	4.00						STREET NAME (PLAQUE)
M04-10L	48X18	6.00						DETOUR (ARROW LEFT)
M04-10R	48X18	6.00						DETOUR (ARROW RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TRI.	6.93						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R1-3P	30X12	2.50						ALL WAY (PLAQUE)
R2-1	36X48	12.00						SPEED LIMIT XX
R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45° ARROW)
R11-2	48X30	10.00	8	80.00			29	ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50	3	37.50			58	ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00						FINE SIGN
CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)
MISCELLANEOUS SIGNS								
CONST-5	48X36	12.00						POINT OF PRESENCE
CONST-5	96X48	32.00	2	64.00			55	POINT OF PRESENCE
CONST-7	48X24	8.00						RATE OUR WORK ZONE
CONST-7	72X36	18.00	2	36.00			56	RATE OUR WORK ZONE
CONST-8	48X36	12.00	2	24.00			57	WORK ZONE NO PHONE ZONE
CONST-9	36X78	19.50	4	78.00			50A	DETOUR N ROUTE A
CONST-10	36X78	19.50	5	97.50			50B	DETOUR N ROUTE A
CONST-11	36X78	19.50	2	39.00			50C	DETOUR N ROUTE A
CONST-12	36X78	19.50	5	97.50			50D	DETOUR N ROUTE A
CONST-13	36X78	19.50	2	39.00			50E	DETOUR N ROUTE A
CONST-14	36X78	19.50	8	156.00			50F	DETOUR S ROUTE A
CONST-15	36X78	19.50	2	39.00			50G	DETOUR S ROUTE A
CONST-16	36X78	19.50	3	58.50			50H	DETOUR S ROUTE A
CONST-17	36X78	19.50	2	39.00			50I	DETOUR S ROUTE A
CONST-18	36X78	19.50	3	58.50			50J	DETOUR S ROUTE A
CONST-19	96X48	32.00	2	64.00			59	ROUTE A CLOSED X MI
CONST-20	96X60	40.00	2	80.00			51M	ROUTE A CLOSED S OF RTE W
CONST-21	96X60	40.00	3	120.00			51N	ROUTE A CLOSED N OF RTE 6
							TOTAL	
							616-10.05	
							CONSTRUCTION SIGNS	1326
							616-10.10	
							RELOCATED SIGNS	0

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6123000A		TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)
6161007		SPEED LIMIT AND STROBE LIGHT ASSEMBLY
6161008	4	ADVANCED WARNING RAIL SYSTEM
6161009	4	FLAG ASSEMBLY
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL

GENERAL NOTES:
 ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND A PART OF THE CONSTRUCTION OF THIS PROJECT.

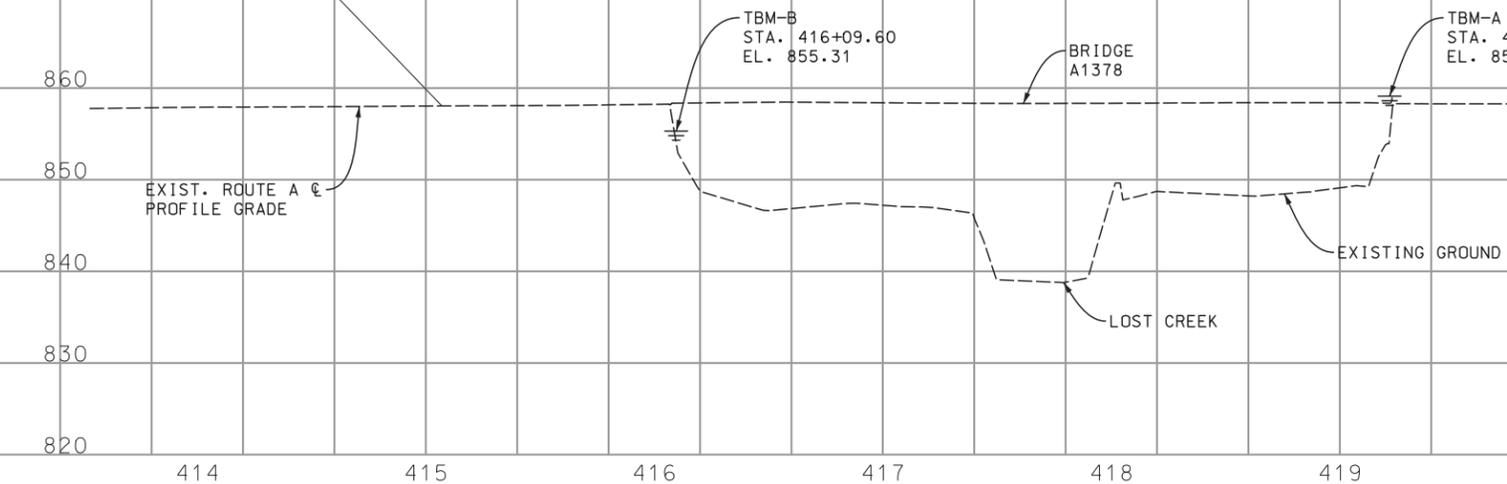
ALL BEARINGS ARE BASED ON STATE PLANE BEARINGS, WEST ZONE.



NOTE:
 THE APPROXIMATE LOCATION OF PROPERTY LINES AS SHOWN ON THE PLANS ARE BASED ON THE BEST INFORMATION AVAILABLE TO THE COMMISSION AT THIS TIME. THIS INFORMATION IS PROVIDED BY THE COMMISSION "AS-IS" AND THE COMMISSION EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY AS TO THE COMPLETENESS, ACCURACY, OR SUITABILITY OF THE INFORMATION FOR ANY USE.

BEGIN PROJECT J1S3136
 STA. 415+07.00

END PROJECT J1S3136
 STA. 420+23.00



- UTILITY PROVIDERS:
- BLUEBIRD NETWORK
 800 NW CHIPMAN ROAD
 SUITE 5750
 LEE'S SUMMIT, MO 64063
 (800) 778-9140
 - CENTURYLINK
 625 CHERRY STREET
 COLUMBIA, MO 65201
 (573) 634-1615
 - DEKALB COUNTY PWS #1
 302 NORTH MAIN STREET
 CLARKSDALE, MO 64430
 (816) 393-5311
 - UNITED ELECTRIC COOPERATIVE
 401 NORTH US HIGHWAY 71
 SAVANNAH, MO 64485
 (800) 748-1488

PLAN & PROFILE
 SHEET 1 OF 1

GRANT C. LUCKENBILL-ENGINEER
 MO# PE-2012018100

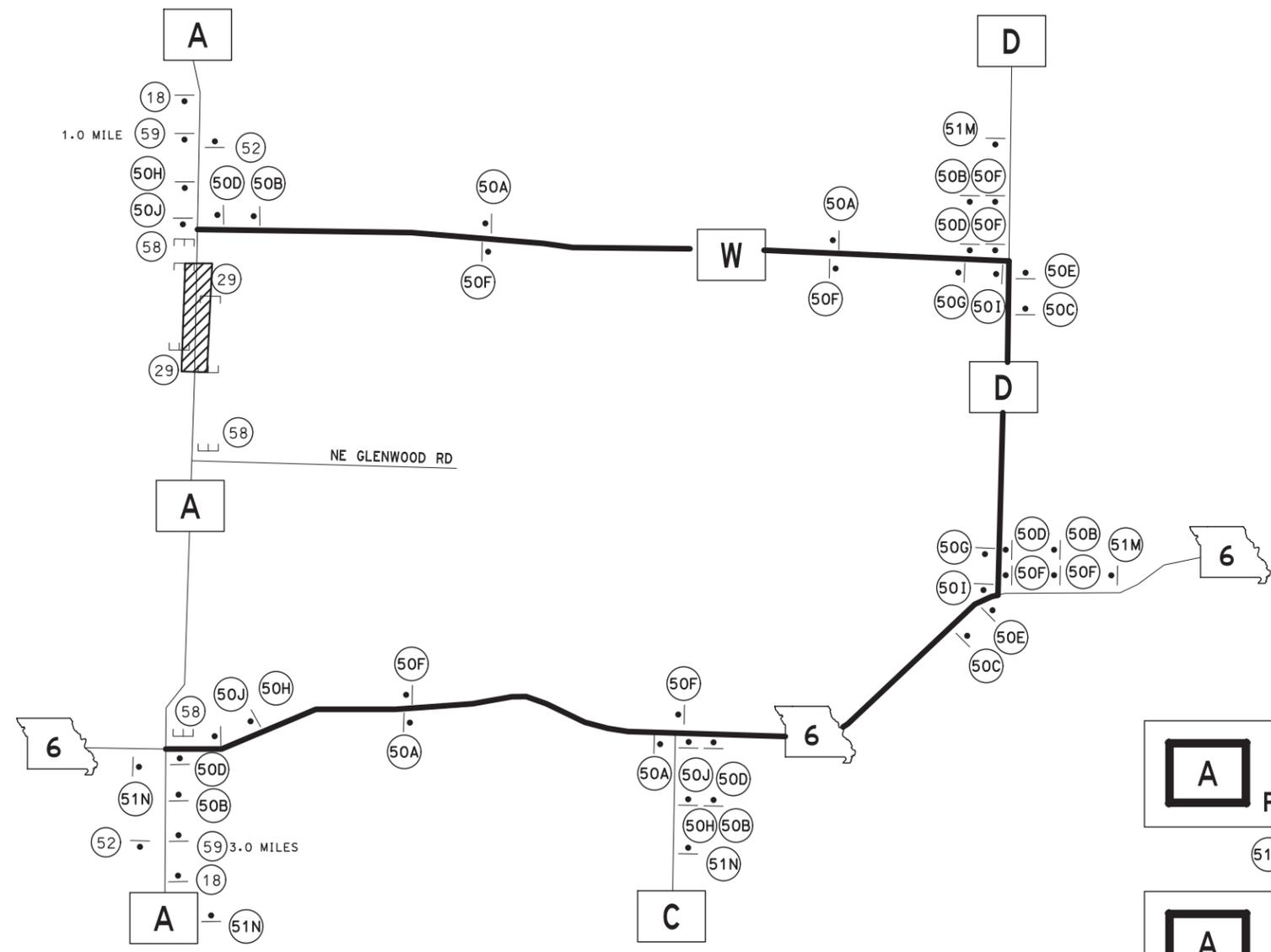
DATE PREPARED 7/1/2020	
ROUTE A	STATE MO
DISTRICT NW	SHEET NO. 4
COUNTY DEKALB	
JOB NO. J1S3136	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

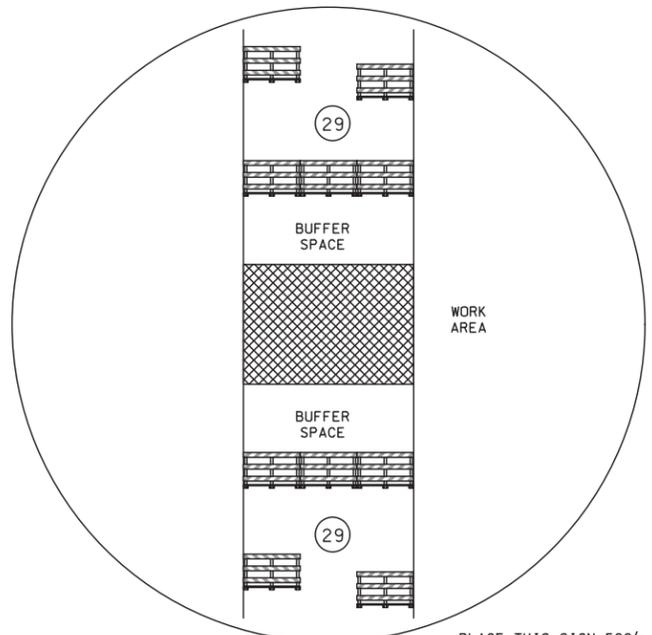
olsson

1301 BURLINGTON STREET, STE. 100
 NORTH KANSAS CITY, MO 64116
 CERTIFICATE OF AUTHORITY NO. 001592



A CLOSED S/O ROUTE W
51M

A CLOSED N/O ROUTE 6
51N



A CLOSED X MILES AHEAD

59
"X" EQUALS MILES NOTED NEXT TO SIGN NUMBER



W020-2
18



PLACE THIS SIGN 500' BEFORE ROAD CLOSED SIGN IS NEEDED

END DETOUR
M04-8a
52

ROAD CLOSED
R11-2
29

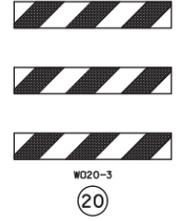
ROAD CLOSED TO THRU TRAFFIC
R11-4
58

DETOUR NORTH
M04-8 M04-8 M04-8 M04-8 M04-8
M3-1 M3-1 M3-1 M3-1 M3-1

A **A** **A** **A** **A**
M1-5a M1-5a M1-5a M1-5a M1-5a
↑ ↗ ↖ → ←
M6-3 M5-1R M5-1L M6-1 M6-1
50A 50B 50C 50D 50E

DETOUR SOUTH
M04-8 M04-8 M04-8 M04-8 M04-8
M3-3 M3-3 M3-3 M3-3 M3-3

A **A** **A** **A** **A**
M1-5a M1-5a M1-5a M1-5a M1-5a
↑ ↗ ↖ → ←
M6-3 M5-1R M5-1L M6-1 M6-1
50F 50G 50H 50I 50J



W020-3
20

DETOUR FOR ROUTE A TRAFFIC CONTROL
SHEET 2 OF 4



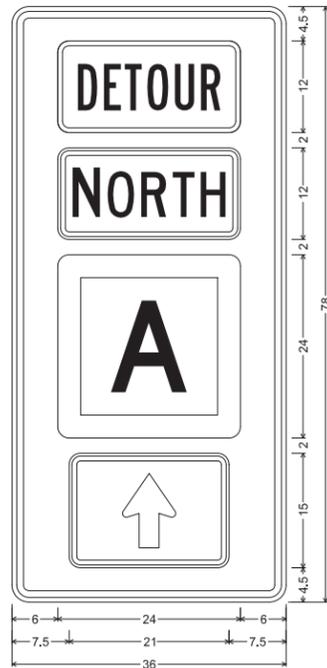
DATE PREPARED
7/1/2020
ROUTE A STATE MO
DISTRICT NW SHEET NO. 7
COUNTY DEKALB
JOB NO. J1S3136
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE

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

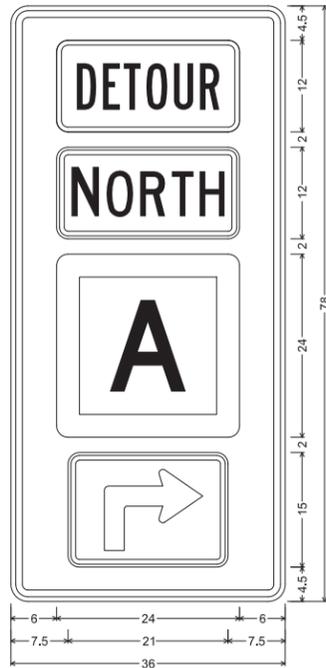
olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
CERTIFICATE OF AUTHORITY NO. 001592

NOT TO SCALE



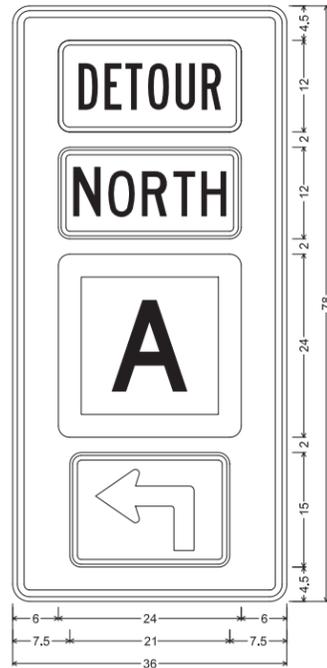
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2,250" Radius, 0,875" Border, 0,625" Indent, Black on Orange;
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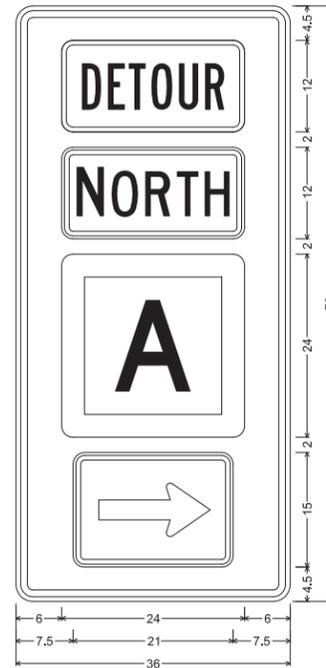
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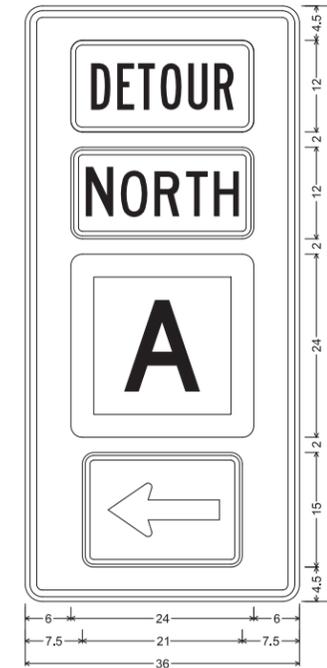
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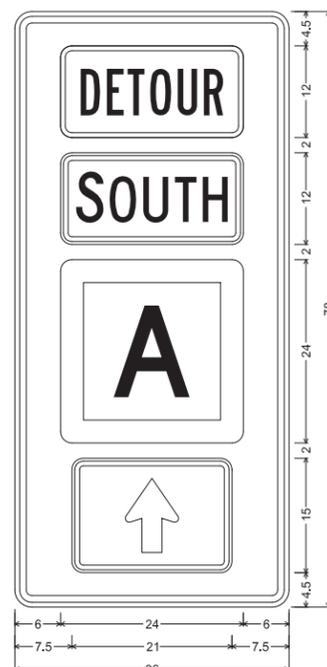
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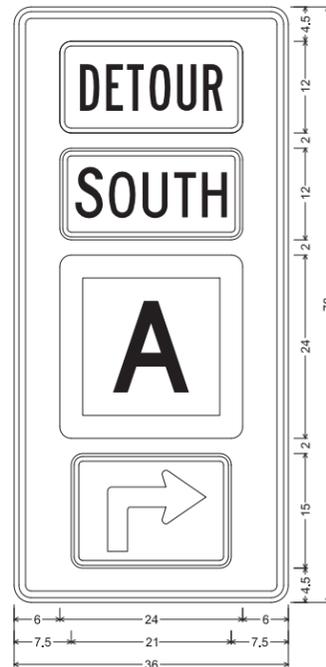
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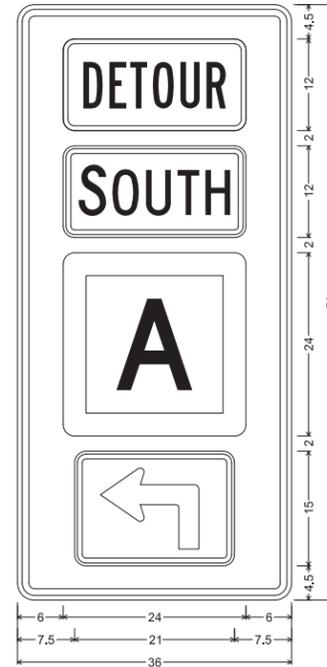
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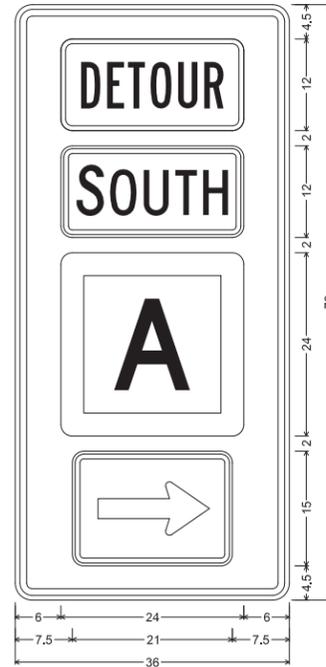
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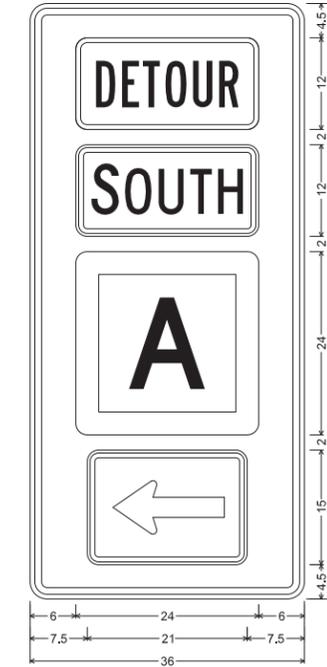
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MO4-11 SHF-FLAT SHEET FLUORESCENT;
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MO4-11 SHF-FLAT SHEET FLUORESCENT;
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Table of letter and object lefts.

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6,000	
7,500	



DATE PREPARED
7/1/2020

ROUTE	A	STATE	MO
DISTRICT	NW	SHEET NO.	8
COUNTY	DEKALB		
JOB NO.	J1S3136		
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)

Olsson
 1301 BURLINGTON STREET, STE. 100
 NORTH KANSAS CITY, MO 64116
 CERTIFICATE OF AUTHORITY NO. 001592

General Notes:

Stay-In-Place Forms:

Corrugated steel forms, supports, closure elements and accessories shall be in accordance with grade requirement and coating designation C165 of ASTM A653. Complete shop drawings of the permanent steel deck forms shall be required in accordance with Sec 1080.

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

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

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

The contractor shall provide a method of preventing the direct contact of the stay-in-place forms and connection components with uncoated weathering steel members that is approved by the engineer.

Pouring and Finishing Slab:

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

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

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

Haunching:

(1) Slab is to be considered a uniform thickness as shown on the plans. Haunching will vary. See front sheet for slab thickness.

Structural Steel Protective Coating:

Protective Coating: System G in accordance with Sec 1081. All existing structural steel including bearings shall be recoated with System G:
 - 10' from each side of ϕ joint near Int. Bents No. 3 & 6.
 - 5' from each side of ϕ joint near Int. Bents No. 2 & 7.
 - 10' in span 5 near Int. Bent No. 4 (outside face and bottom flange of stringer no. 1 only).

Surface Preparation: Surface preparation of the existing steel shall be in accordance with Sec 1081 for Recoating of Structural Steel (System G, H or I). 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.

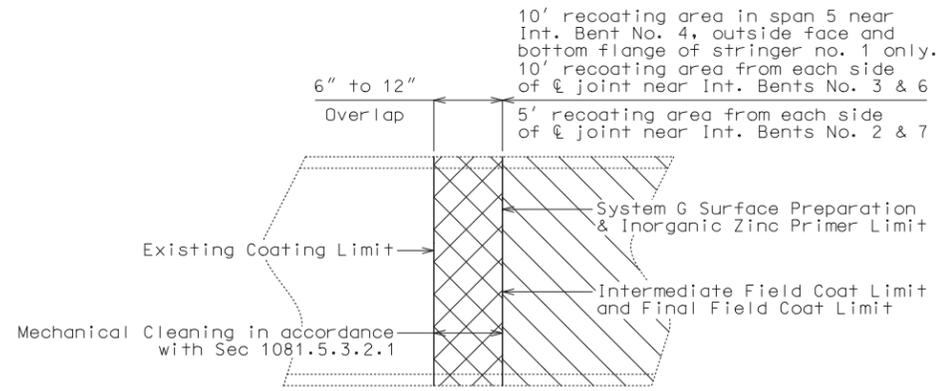
Field Coats: The color of the field coats shall be Gray (Federal Standard # 26373). The cost of the intermediate field coat will be considered completely covered by the contract unit price per sq. foot for Intermediate Field Coat (System G). The cost of the finish field coat will be considered completely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

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.

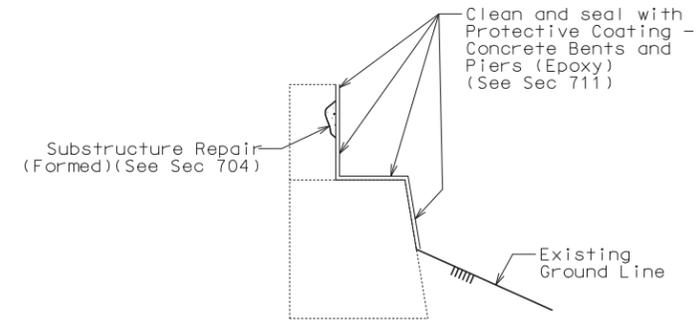
Top Flange Cleaning and Preparation:

Standards specification 216.50.2.2 indicating stringer surface limits for cleaning, preparation, and installation of a gray epoxy-mastic primer (non-aluminum) shall be modified to include the sides and bottom of the top flange of all stringers. See Job Special Provisions.

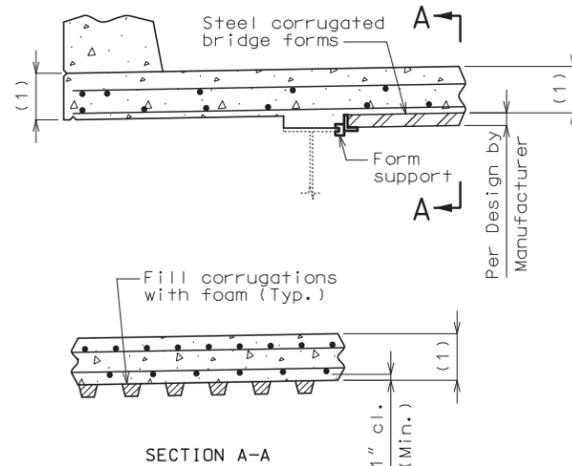


PART ELEVATION SHOWING LIMITS OF PAINT OVERLAP

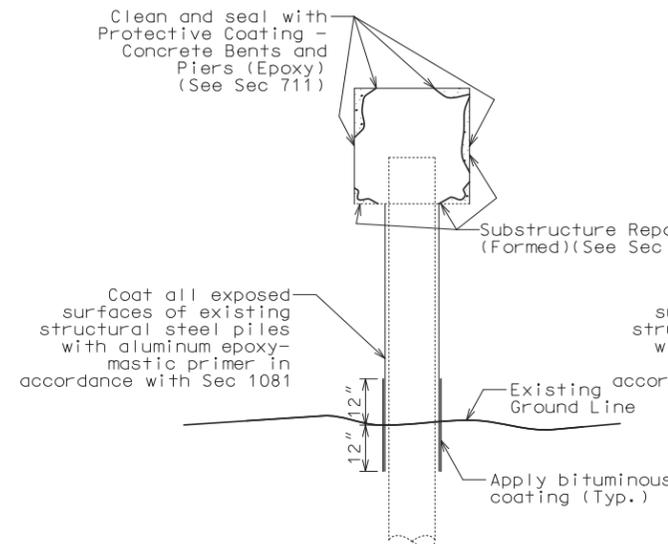
Limits of Paint Overlap: System G shall overlap the existing coating between 6 inches and 12 inches in order to achieve maximum coverage at the paint limit of each complete system near the expansion and contraction areas. The final field coating shall be masked to provide crisp, straight lines and to prevent overspray beyond the overlap required.



TYPICAL SECTION THRU END BENTS NO. 1 & 8 SHOWING SUBSTRUCTURE REPAIR AND PROTECTIVE COATING

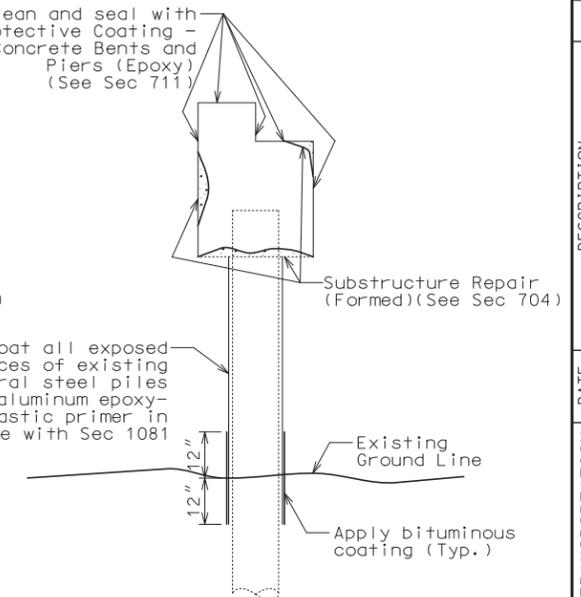


OPTIONAL STAY-IN-PLACE FORM DETAILS

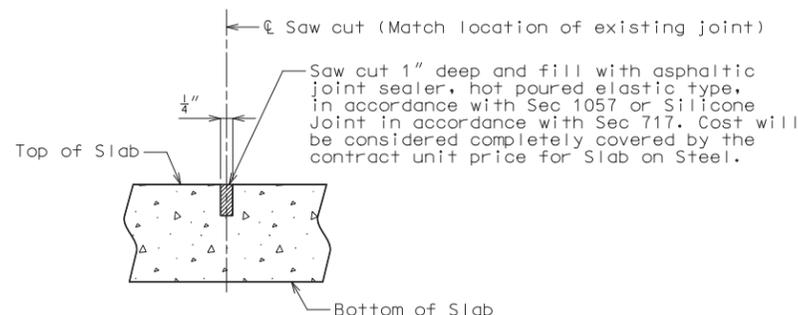


TYPICAL SECTION THRU INT. BENTS NO. 2 & 7 SHOWING SUBSTRUCTURE REPAIR AND PROTECTIVE COATING

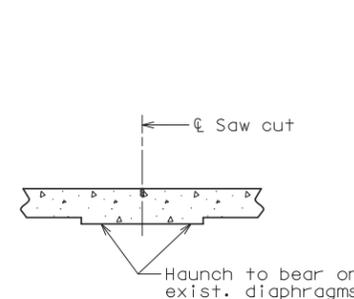
All exposed surfaces of the existing structural steel piles shall be recoated with one 6-mil thickness of aluminum epoxy-mastic primer applied over an SSPC-SP3 surface preparation in accordance with Sec 1081. The bituminous coating shall be applied one foot above and below the existing ground line and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



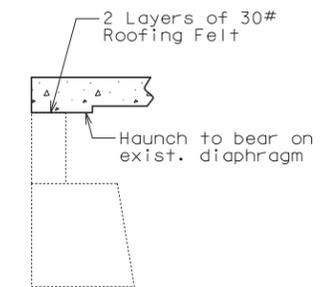
TYPICAL SECTION THRU INT. BENTS NO. 3 & 6 SHOWING SUBSTRUCTURE REPAIR AND PROTECTIVE COATING



TYPICAL SECTION THRU SAW CUT AT INTERMEDIATE BENTS NO. 2 & 7



PART SECTION THRU SLAB AT INT. BENTS NO. 2 & 7

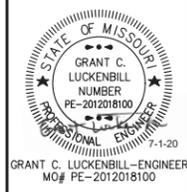


PART SECTION THRU SLAB AT END BENTS NO. 1 & 8

GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED 6/30/2020	
ROUTE A	STATE MO
DISTRICT BR	SHEET NO. 2
COUNTY DEKALB	
JOB NO. J1S3136	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A13781	
DESCRIPTION	DATE
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)
olsson	7301 WEST 133RD STREET OVERLAND PARK, KS 66213 CERTIFICATE OF AUTHORITY NO. 001592

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



DATE PREPARED
6/30/2020

ROUTE A STATE MO

DISTRICT BR SHEET NO. 3

COUNTY DEKALB

JOB NO. J1S3136

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A13781

GENERAL NOTES:

Anchor bolts shall be 1 1/2" Ø ASTM F1554 Grade 55 swaged bolts and shall extend 15" into the concrete with ASTM A563 Grade A Hex or Heavy Hex nuts. Actual manufacturer's certified mill test reports (chemical and mechanical) shall be provided. Swedging shall be 1" less than extension into the concrete.

Anchor bolt shall be at the C of slotted hole at 60°F. Bearing position shall be adjusted R for each 10° fall or rise in temperature at installation.

All structural steel for the anchor bolts and heavy hexagon nuts shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum).

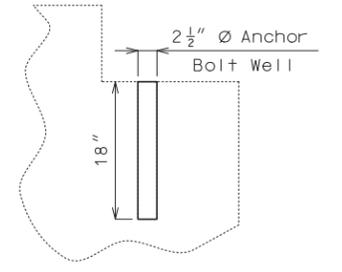
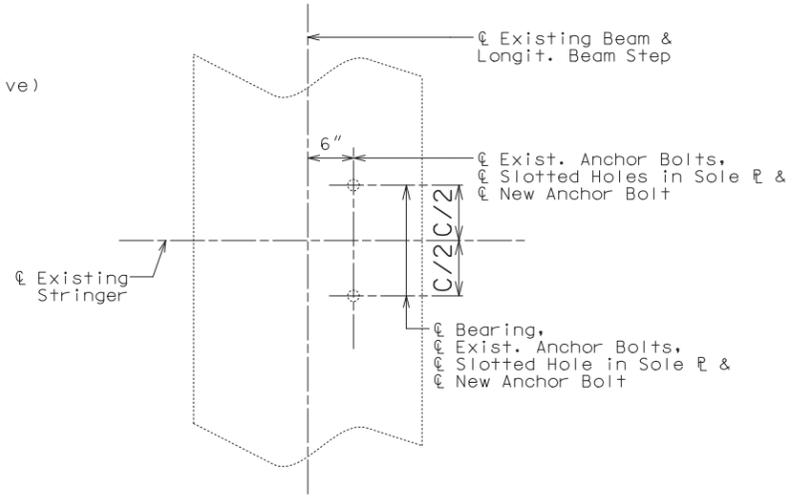
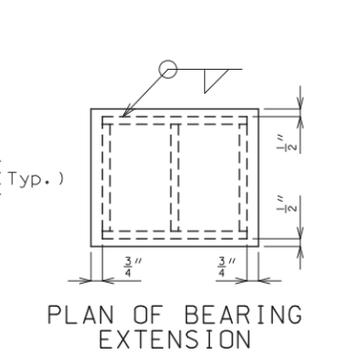
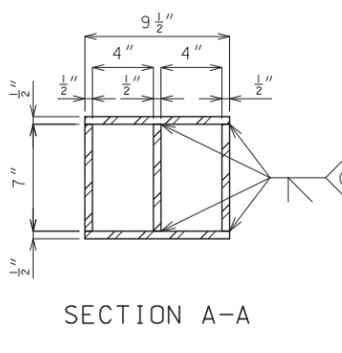
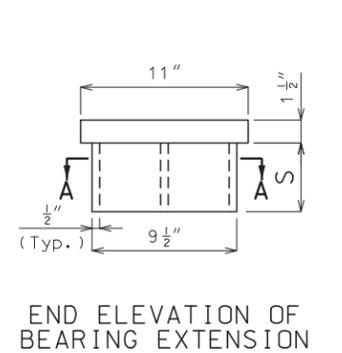
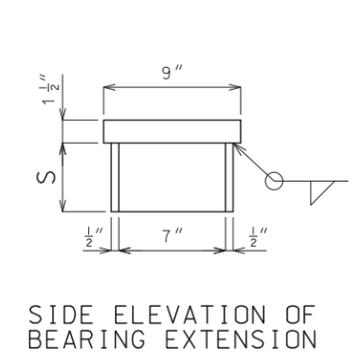
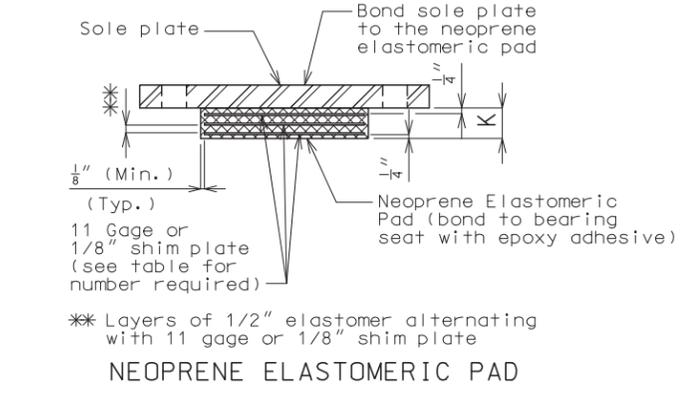
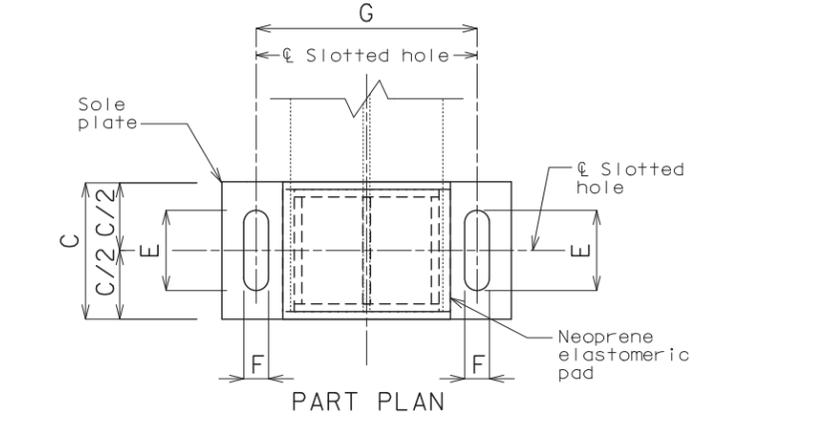
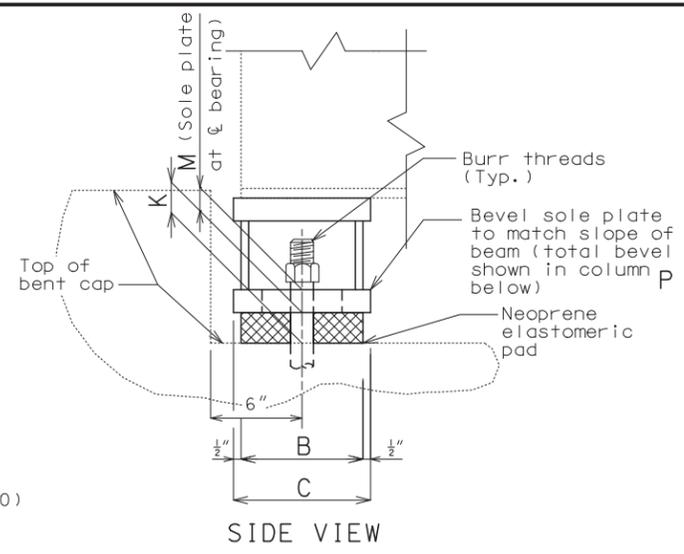
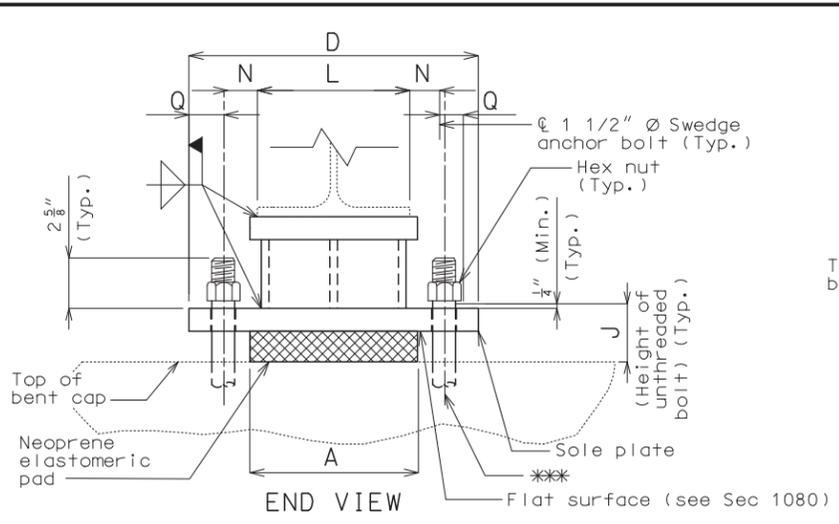
Neoprene Elastomeric Pads shall be 60 Durometer.

Structural steel for sole plate and bearing extension shall be ASTM A709 Grade 50 and shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum).

Laminated Neoprene Bearing Pad Assembly shall be in accordance with Sec 716.

Cost of anchor bolts, drilling, grouting and all bearing extension plates, complete in place, will be considered completely covered by the contract unit price for Laminated Neoprene Bearing Pad Assembly.

**Existing anchor bolts and surrounding concrete within existing bolts wells shall be cored, removed and replaced with the new anchor rods shown.

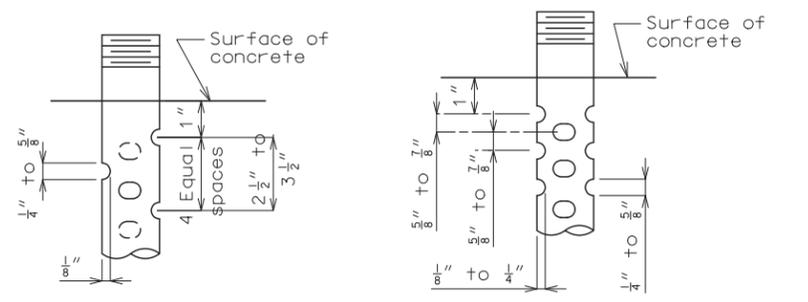


PART PLAN OF EXISTING INT. BENT NO. 3 SHOWING ANCHOR BOLT LOCATION (Int. Bent No. 6 Similar)

DETAIL OF ANCHOR BOLT WELLS

EXPANSION BEARINGS																		
BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	Q	R	S	NUMBER OF SHIM PLATES *	NUMBER REQUIRED
3 (Span 3 Side Only)	11"	8"	9"	19"	5 1/4"	1 5/8"	14 1/2"	3 5/8"	1 7/8"	10"	1 1/2"	2 1/4"	0"	2 1/4"	1 1/16"	4 5/8"	3	4
6 (Span 5 Side Only)	11"	8"	9"	19"	5 1/4"	1 5/8"	14 1/2"	3 5/8"	1 7/8"	10"	1 1/2"	2 1/4"	0"	2 1/4"	1 1/16"	4 5/8"	3	4
TOTAL BEARINGS																		
8																		

* The required shim plate shall be placed between layers of elastomer and molded together to form an integral unit.



DETAIL OF 3/4" Ø THRU 2 1/2" Ø ANCHOR BOLTS

SWEDGE ANCHOR BOLT DETAILS

DETAILS OF LAMINATED NEOPRENE BEARING PAD ASSEMBLY & BEARING EXTENSION

Detailed May 2020
Checked May 2020

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

Sheet No. 3 of 8

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

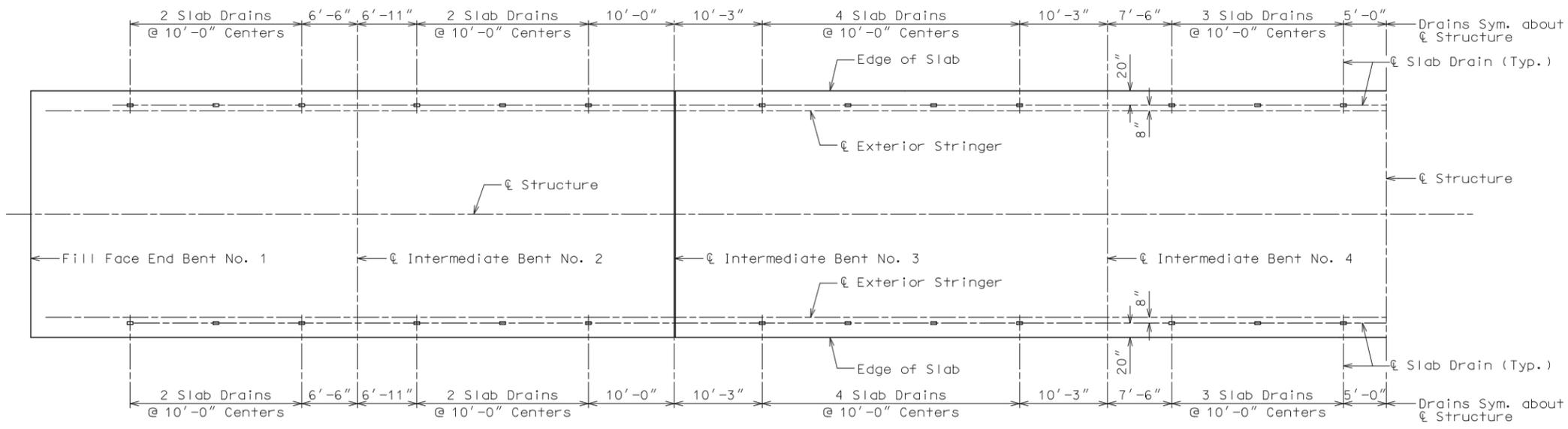
MoDOT

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

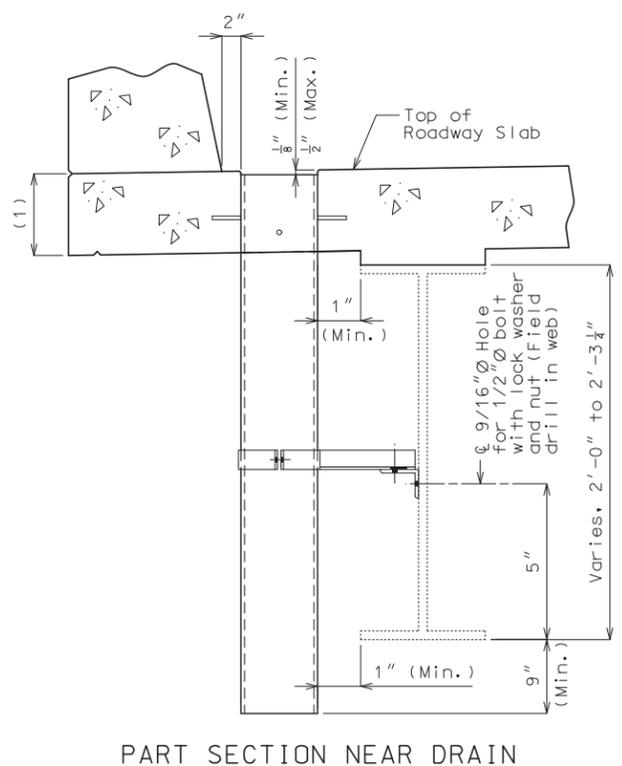
olsson

7301 WEST 133RD STREET OVERLAND PARK, KS 66213 CERTIFICATE OF AUTHORITY NO. 001592

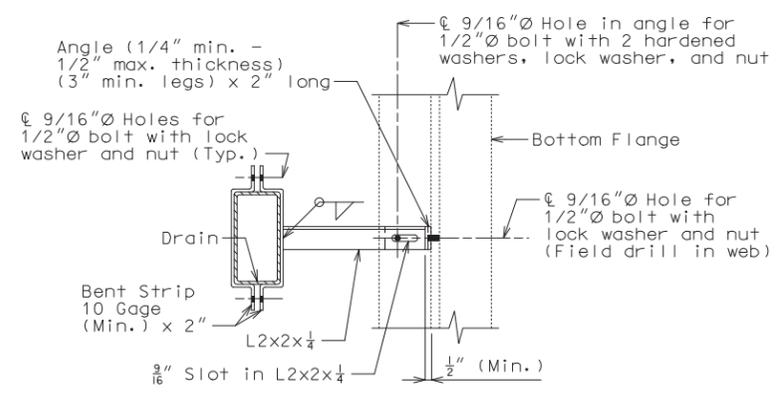
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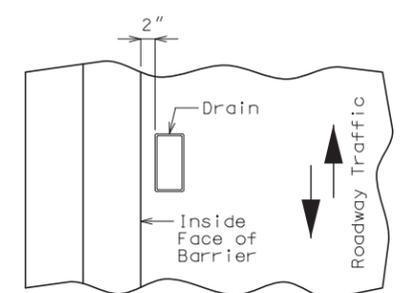
HALF PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



PART SECTION NEAR DRAIN

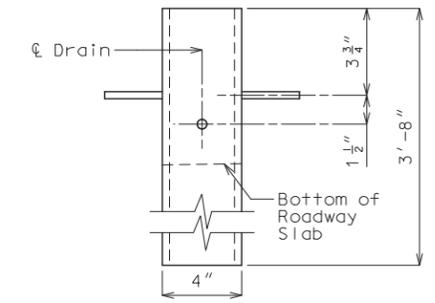


PART SECTION SHOWING BRACKET ASSEMBLY

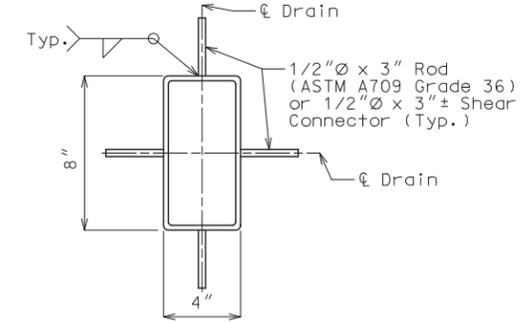


PART PLAN OF SLAB AT DRAIN

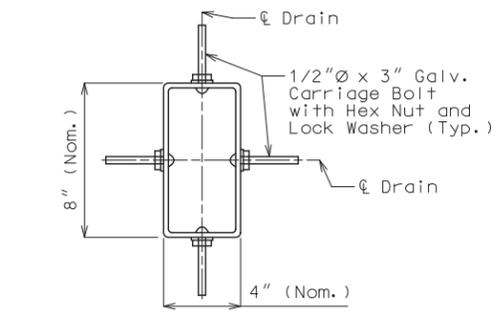
SLAB DRAIN DETAILS



ELEVATION OF DRAIN



PLAN OF STEEL DRAIN OPTION



PLAN OF FRP DRAIN OPTION

General Notes:
 Contractor shall have the option to construct either steel or FRP slab drains. All drains shall be of same type.
 Slab drain bracket assembly shall be ASTM A709 Grade 36 steel.
 Locate drains in slab by dimensions shown in Part Section Near Drain.
 Reinforcing steel shall be shifted to clear drains.
 The bracket assembly shall be galvanized in accordance with ASTM A123.
 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 shall be shifted to the minimum extent necessary to field drill in the existing web.
 (1) See front sheet for slab thickness.

Notes for Steel Drain:
 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.
 Outside dimensions of drains are 8" x 4".
 The drains shall be galvanized in accordance with ASTM A123.

Notes for FRP Drain:
 Drains shall be machine filament-wound thermosetting resin tubing meeting the requirements of ASTM D2996 with the following exceptions:
 Shape of drains shall be rectangular with outside nominal dimensions of 8" x 4".
 Minimum reinforced wall thickness shall be 1/4 inch.
 The resin used shall be ultraviolet (UV) resistant and/or have UV inhibitors mixed throughout. Drains may have an exterior coating for additional UV resistance.

The color of the slab drain shall be gray (Federal Standard 26373). The color shall be uniform throughout the resin and any coating used.
 The combination of materials used in the manufacture of the drains shall be tested for UV resistance in accordance with ASTM D4329 Cycle A. The representative material shall withstand at least 500 hours of testing with only minor discoloration and without any physical deterioration. The contractor shall furnish the results of the required ultraviolet testing prior to acceptance of the slab drains.

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

GRANT C. LUCKENBILL-ENGINEER
MO# PE-2012018100

DATE PREPARED 6/30/2020	
ROUTE A	STATE MO
DISTRICT BR	SHEET NO. 4
COUNTY DEKALB	
JOB NO. J1S3136	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A13781	
DESCRIPTION	
DATE	

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

olsson

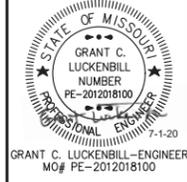
7301 WEST 133RD STREET
OVERLAND PARK, KS 66213
CERTIFICATE OF
AUTHORITY NO. 001592

Detailed May 2020
 Checked May 2020

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

Sheet No. 4 of 8

6:18:42 PM 6/30/2020



DATE PREPARED
6/30/2020

ROUTE A STATE MO
DISTRICT BR SHEET NO. 5

COUNTY DEKALB
JOB NO. J1S3136
CONTRACT ID.

PROJECT NO.

BRIDGE NO. A13781

GENERAL NOTES:

Expansion joint system shall be fabricated in one section, except for staged 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.

Longitudinal reinforcing steel shall be placed so that ends shall be 1" from the vertical leg of the steel armor at the expansion joint system.

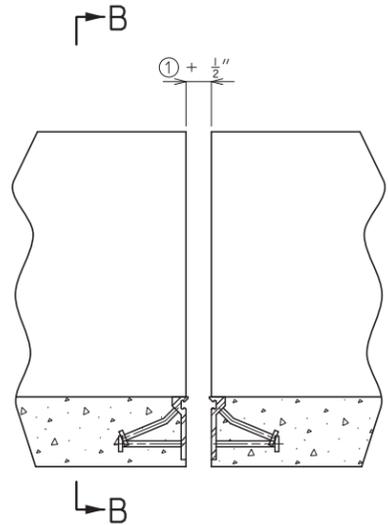
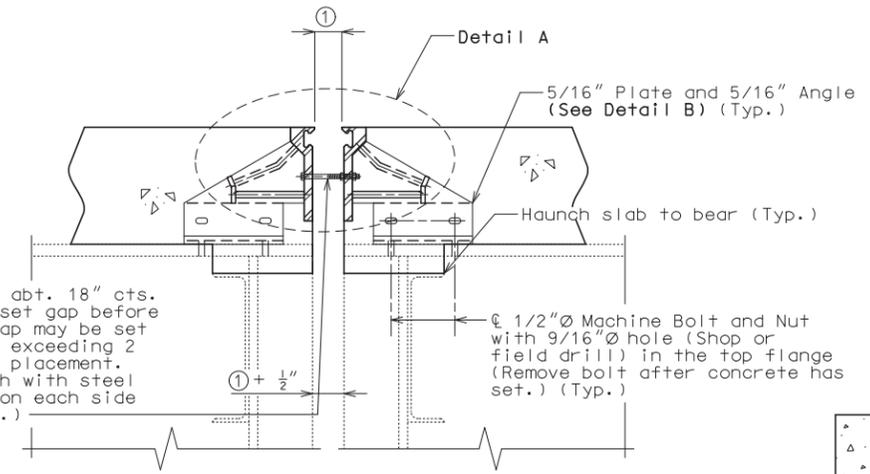
Concrete shall be forced under and around steel armor and anchors. Proper consolidation of the concrete shall be achieved by localized internal vibration.

② The installation temperature shall be taken as the actual air temperature averaged over the 24-hour period immediately preceding installation.

③ MoDOT Construction personnel will indicate the strip seal expansion joint system installed.

④ Height of standard strip seal armor has been modified to provide adequate clearance above girders. Contractor shall indicate means of modifying standard extrusion, where necessary, with preconstruction submittals.

Steel armor may also be referred to as extrusion or rail.



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

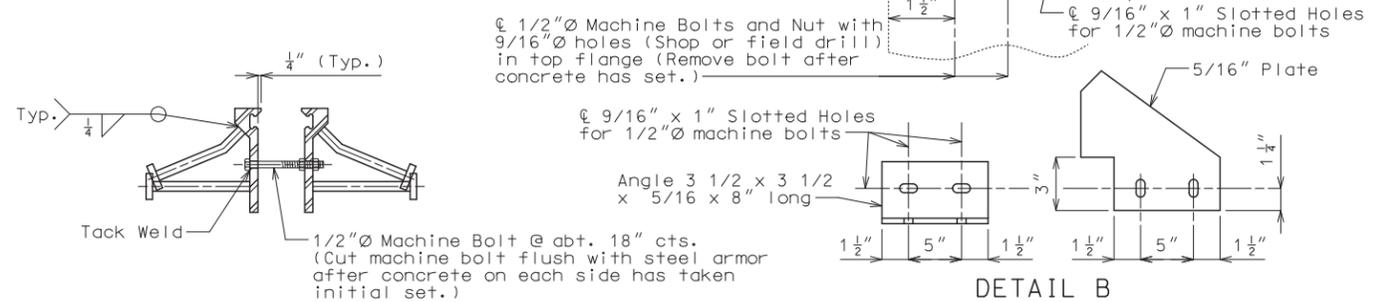
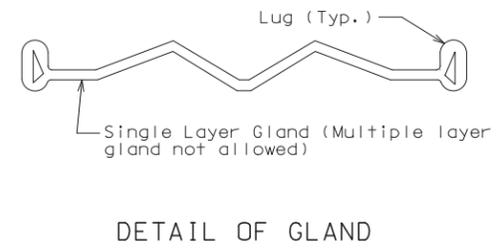
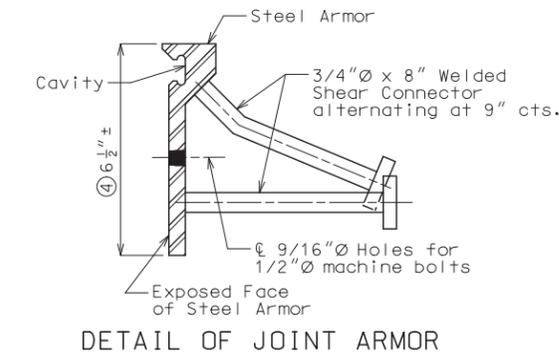
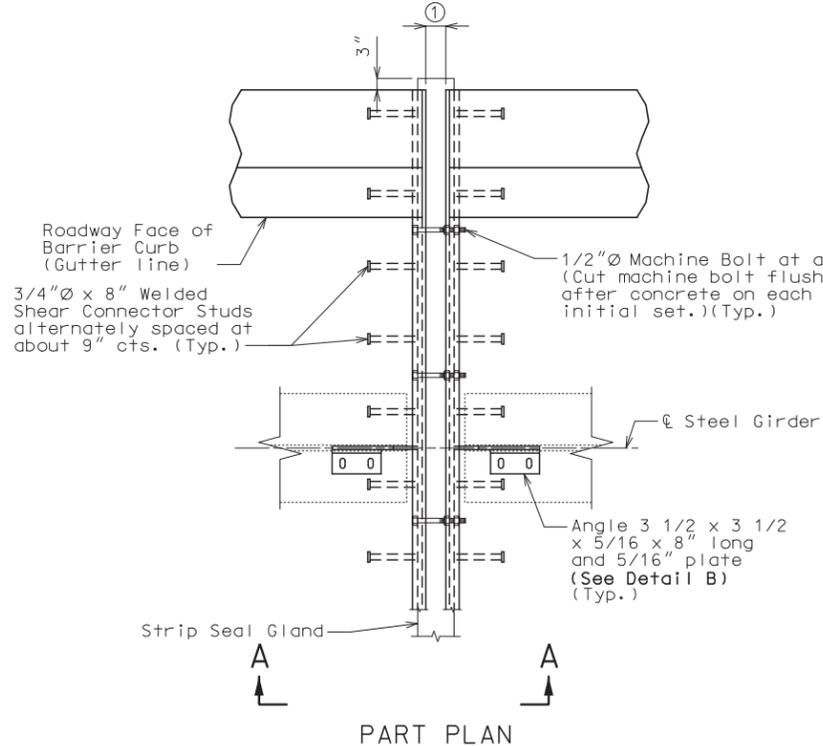
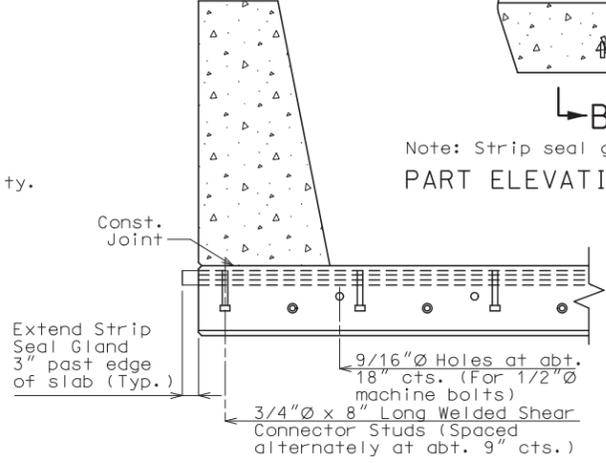


Table of Allowed Transverse Strip Seal Expansion Joint System

Manufacturer	Strip Seal System (Designated Name)	Movement Parallel to RDWY	Allowed Installation Gap Normal to Joint at RDWY Surface @ Air/Surface Temperature						③
			① @ 40°F	② @ 50°F	@ 60°F	@ 70°F	@ 80°F	@ 90°F	
D S Brown	Strip seal L2-400	1 1/4"	2"	1 7/8"	1 3/4"	1 5/8"	1 1/2"	NA	□
Watson Bowman Acme (Wabo)	Strip seal SE-300	1 1/4"	2"	1 7/8"	1 3/4"	1 5/8"	1 1/2"	NA	□
Watson Bowman Acme (Wabo)	Strip seal SE-400	1 1/4"	2"	1 7/8"	1 3/4"	1 5/8"	1 1/2"	NA	□

DETAIL A DETAILS OF STRIP SEAL EXPANSION JOINT SYSTEM AT INTERMEDIATE BENTS NO. 3 & 6

Detailed May 2020
Checked May 2020

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

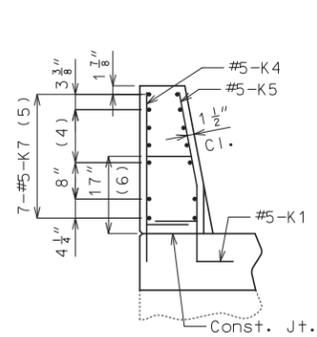
Sheet No. 5 of 8

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

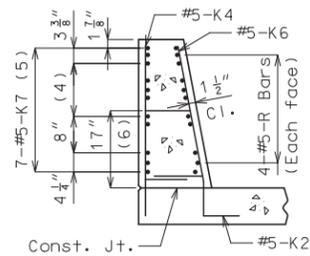


olsson

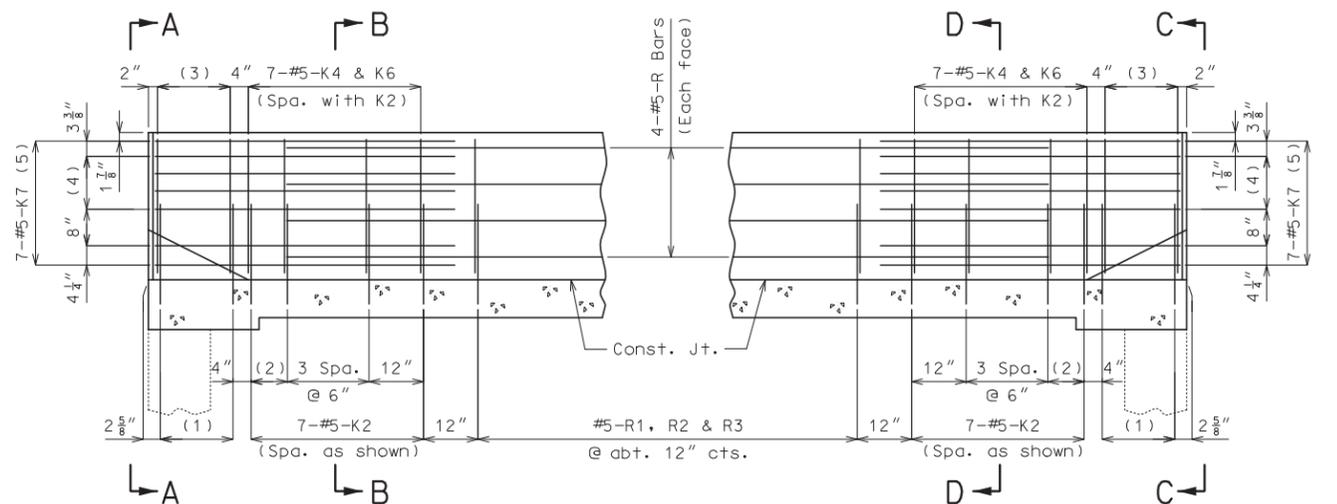
7301 WEST 133RD STREET
OVERLAND PARK, KS 66213
CERTIFICATE OF AUTHORITY NO. 001592



ELEVATION A-A

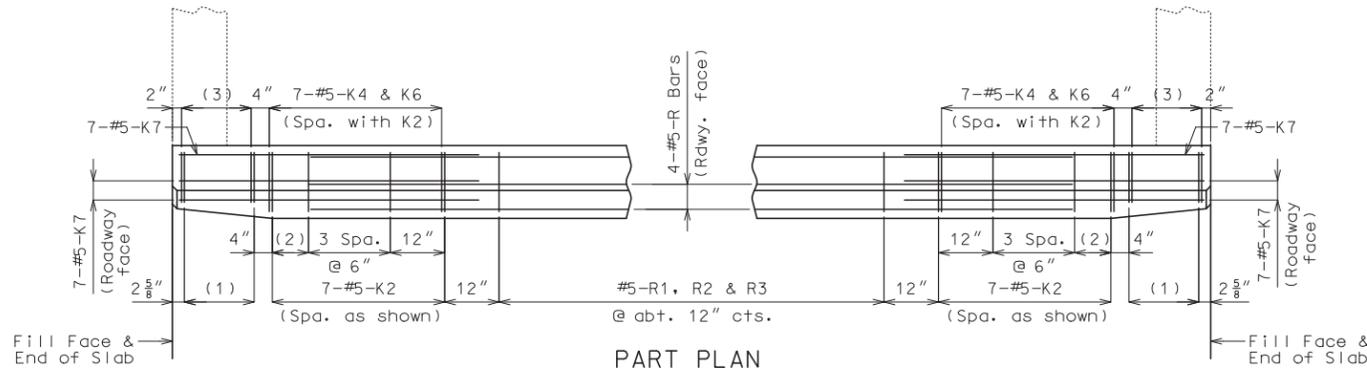


SECTION B-B

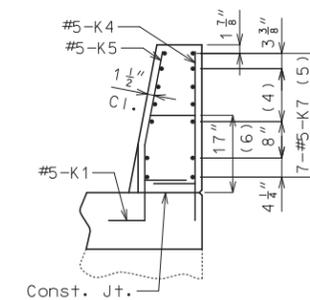


PART ELEVATION

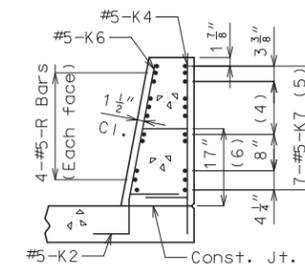
- (1) 5-#5-K1 @ 4" cts.
- (2) 2 Spaces @ 4"
- (3) 5-#5-K4 and 5-#5-K5, spaced with K1
- (4) 3 Spaces @ 3 13/16"
- (5) Spaced as shown, each face
- (6) To top of bar



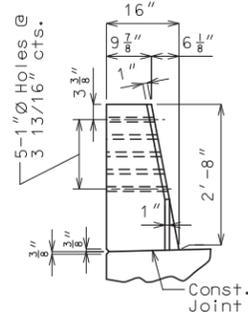
PART PLAN



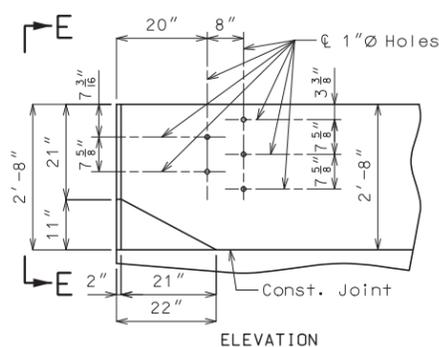
ELEVATION C-C



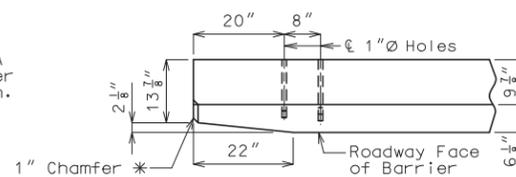
SECTION D-D



ELEVATION E-E



ELEVATION



PLAN

DETAILS OF GUARD RAIL ATTACHMENT

* Transition to zero at Type A curb for gutter lines to match.

General Notes:

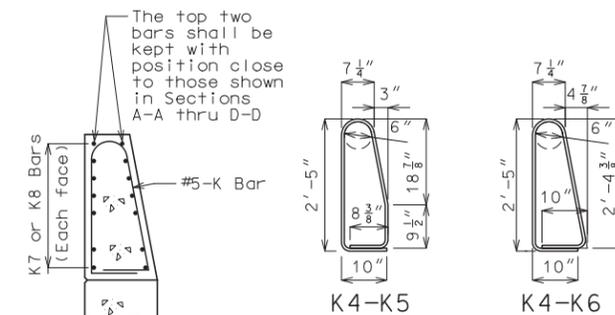
Concrete traffic barrier delineators shall be placed on top of the barrier as shown on Missouri Standard Plan 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered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

Reinforcing Steel:

Minimum clearance to reinforcing steel shall be 1 1/2".
Use a minimum lap of 3'-1" between K7 bars and R bars.

TYPE H BARRIER AT END BENTS

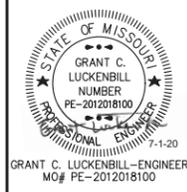
(Left barrier shown, right barrier similar)



PERMISSIBLE ALTERNATE SHAPES

(Other K bars not shown for clarity)

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



DATE PREPARED 6/30/2020	
ROUTE A	STATE MO
DISTRICT BR	SHEET NO. 7
COUNTY DEKALB	
JOB NO. J1S3136	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A13781	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

Olsson

7301 WEST 133RD STREET
OVERLAND PARK, KS 66213
CERTIFICATE OF AUTHORITY NO. 001592

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

REV.

