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PLANS OF PROPOSED IMPROVEMENT ON THE
INTERSTATE ROAD SYSTEM
Districts 3 & 4
On-Call Cable Guardrail Repair
I-29, I-80, & I-880 in Districts 3 & 4

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



HARRISON COUNTY			
DESIGN DATA RURAL			
2024	AADT	16,400	V.P.D.
20 --	AADT	--	V.P.D.
20 --	DHV	--	V.P.H.
TRUCKS		31.37	%
Total			
Design ESALs		--	

MONONA COUNTY			
DESIGN DATA RURAL			
2024	AADT	15,800	V.P.D.
20 --	AADT	--	V.P.D.
20 --	DHV	--	V.P.H.
TRUCKS		32.25	%
Total			
Design ESALs		--	

WOODBURY COUNTY			
DESIGN DATA RURAL			
2024	AADT	41,800	V.P.D.
20 --	AADT	--	V.P.D.
20 --	DHV	--	V.P.H.
TRUCKS		15.73	%
Total			
Design ESALs		--	

FREMONT COUNTY			
DESIGN DATA RURAL			
2024	AADT	17,400	V.P.D.
20 --	AADT	--	V.P.D.
20 --	DHV	--	V.P.H.
TRUCKS		37.63	%
Total			
Design ESALs		--	

MILLS COUNTY			
DESIGN DATA RURAL			
2024	AADT	20,000	V.P.D.
20 --	AADT	--	V.P.D.
20 --	DHV	--	V.P.H.
TRUCKS		30.19	%
Total			
Design ESALs		--	

POTTAWATTAMIE COUNTY			
DESIGN DATA RURAL			
2024	AADT	41,300 (I-29)	V.P.D.
2024	AADT	46,400 (I-80)	V.P.D.
20 --	DHV	--	V.P.H.
TRUCKS		14.37 (I-29)	%
Total		21.3 (I-80)	
Design ESALs		--	

POTTAWATTAMIE COUNTY			
DESIGN DATA RURAL			
2024	AADT	6,000 (I-880)	V.P.D.
2024	AADT	--	V.P.D.
20 --	DHV	--	V.P.H.
TRUCKS		30.4	%
Total			
Design ESALs		--	

ROADWAY DESIGN

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature

Travis R. Malone

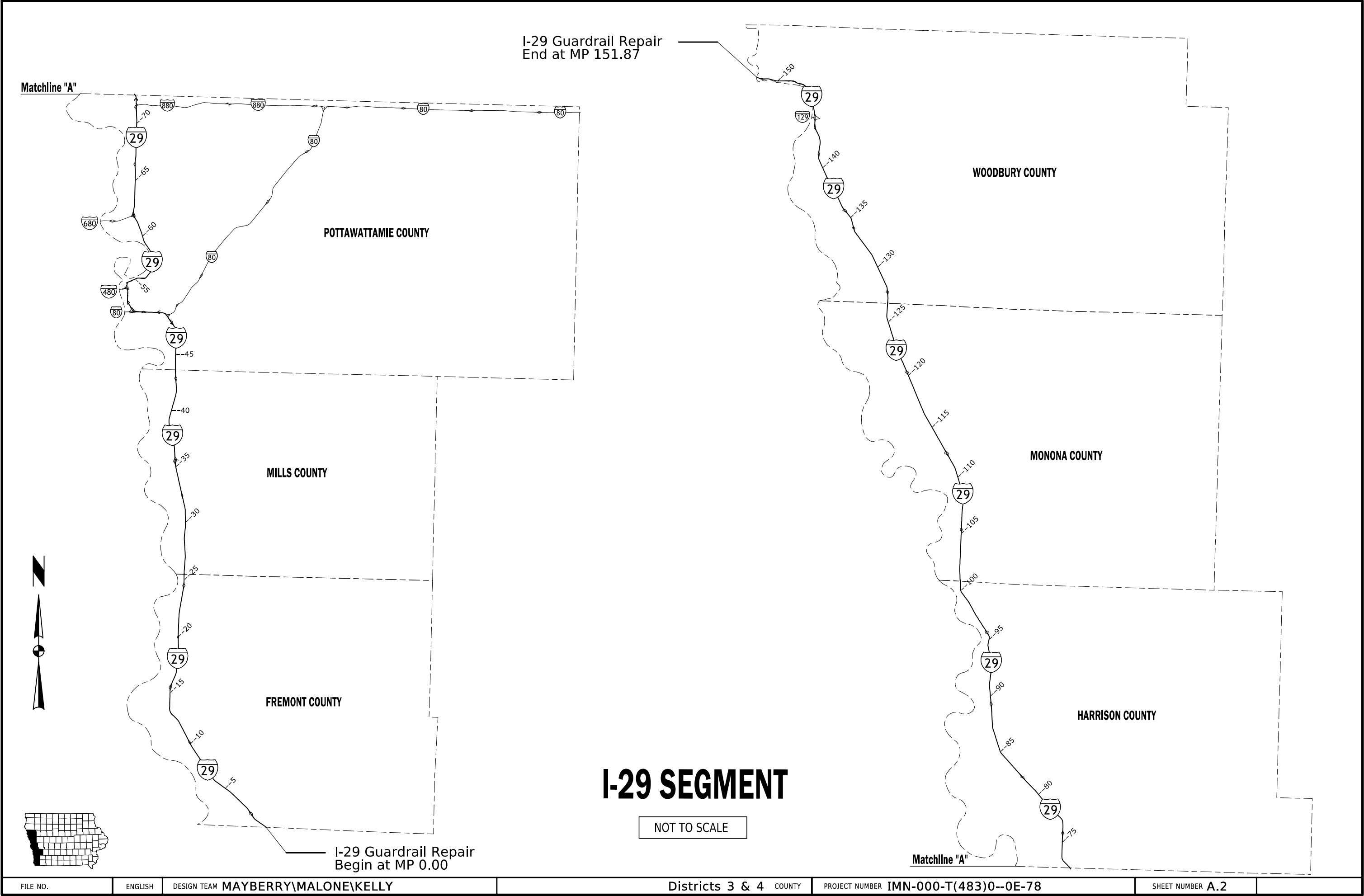
Printed or Typed Name

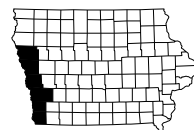
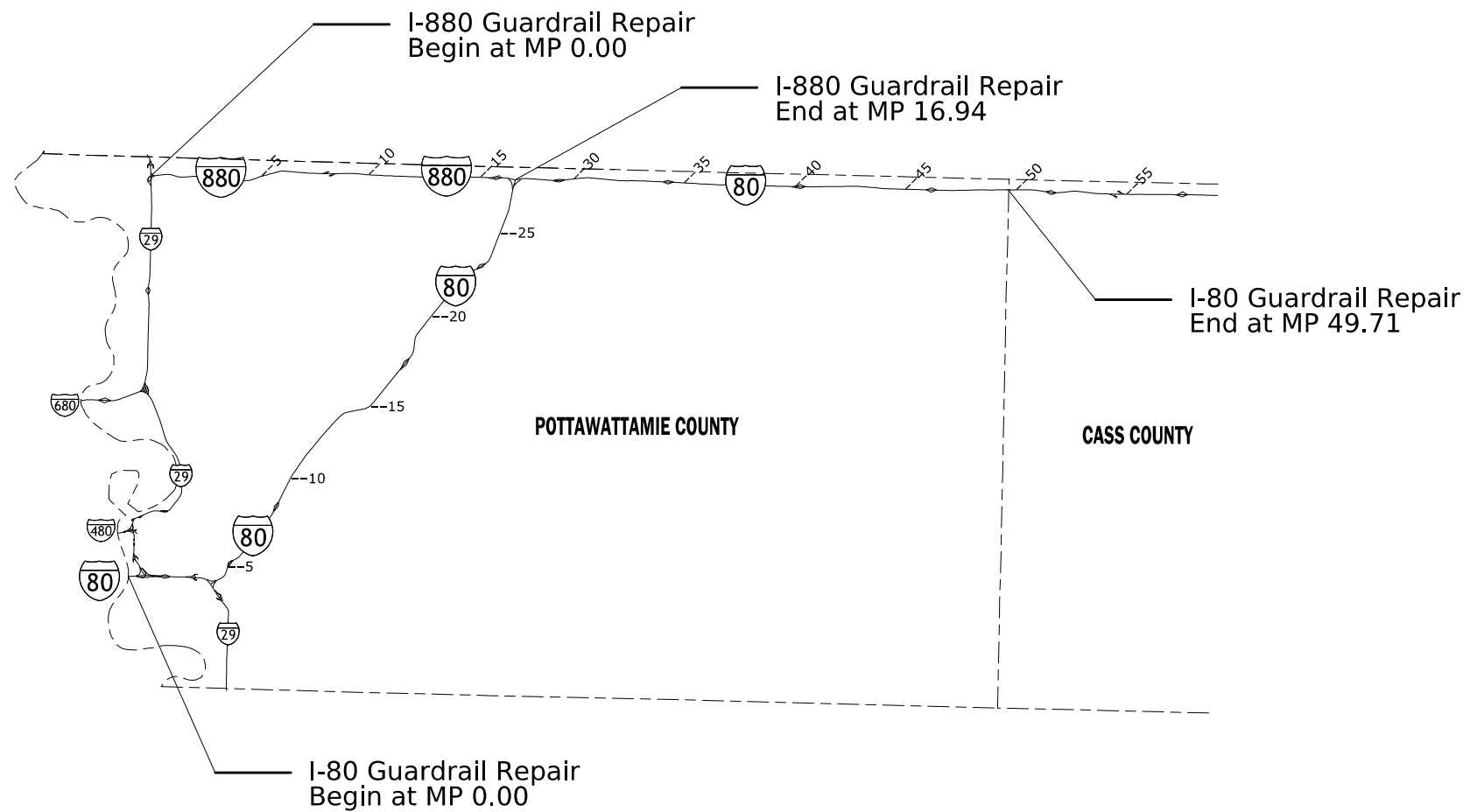
04-16-2026

Date

My license renewal date is December 31, 2026

Pages or sheets covered by this seal: ALL





I-80 & I-880 SEGMENTS

NOT TO SCALE

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway Items : Roadway Items

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway Items	
1	2505-4008300	STEEL BEAM GUARDRAIL	LF	190	In the Standard Specifications replace the description under Method of Measurement, 2505.04, A.1. Steel Beam Guardrail, with the following: "Linear feet of steel beam guardrail constructed." Item includes removal and disposal of damaged guardrail components by the contractor.
2	2505-4008410	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201	EACH	3	
3	2505-4021020	STEEL BEAM GUARDRAIL END ANCHOR, W-BEAM	EACH	3	
4	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205	EACH	3	
5	2505-4021721	STEEL BEAM GUARDRAIL FLARED END TERMINAL, BA-206	EACH	3	
6	2505-6001010	LINE POST, REPAIR	EACH	1,100	This bid item includes is high tension cable guardrail systems.
7	2505-6001012	LINE POST, REPLACE	EACH	1,125	This bid item includes high tension cable guardrail systems.
8	2505-6001014	LINE POST FOUNDATION, REPLACE	EACH	125	Dependent upon the weather conditions, time of year, and condition of the existing line post foundation as determined by the Engineer, the contractor shall remove and replace the damaged foundation. Refer to Developmental Specification DS-23036.
9	2505-6001020	END ANCHOR, REPAIR	EACH	30	
10	2505-6001022	END ANCHOR - SPECIAL, REPAIR	EACH	7	
11	2505-6001024	END ANCHOR, RESET	EACH	30	
12	2505-6001030	TURNBUCKLE, REPLACE	EACH	15	Refer to Developmental Specification DS-23036. Existing Gibraltar turnbuckles and end anchor tensioning fittings are either 3/4" diameter or 1" diameter. All replacement Gibraltar turnbuckles and end anchor tensioning fittings shall be 1" diameter. Replacement of existing 3/4" diameter turnbuckles and end anchor tensioning fittings with 1" diameter turnbuckles and end anchor tensioning fittings will be paid for as "Turnbuckle Replace". (Gibraltar lists these items as "Cable Splice Fitting & Terminal Fitting".) Replacement of anchor cable adjusters and turnbuckles for Trinity type system shall also be paid for as "Turnbuckle Replace". In the event that the cable release anchor base plate post does not accept new 1" diameter adjusters, replacement of the anchor pad (base plate post), concrete footing/reinforcing steel, and anchor post will be paid for as one "End Anchor Repair".
13	2505-6001040	HIGH TENSION CABLE GUARDRAIL, REPLACE	LF	560	

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway Items	
14	2533-4980020	MOBILIZATION, ON-CALL Mobilization for High Tension	EACH	30	This bid item includes high tension cable guardrail systems.
15	2533-4980020	MOBILIZATION, ON-CALL Mobilization for Low Tension	EACH	7	This bid item includes low tension cable guardrail systems.
16	2599-9999005	('EACH' ITEM) Anchor Tab Welding Repair	EACH	7	This item includes all equipment, material, and labor for an Anchor Tab Welding
17	2599-9999005	('EACH' ITEM) LANE CLOSURE DAY OR NIGHT	EACH	7	<p>LANE CLOSURE DAY OR NIGHT</p> <p>Developmental Specification Section 23036.05, J is modified by this items. Lane closure restrictions will be in accordance with J Sheets.</p> <p>Method of Measurement: By count for each lane closure.</p> <p>Basis of Payment: The contractor shall be paid for each lane closure. Payment is full compensation for furnishing all equipment and labor required to setup and takedown a lane closure.</p>
18	2599-9999005	('EACH' ITEM) LINE POST FOUNDATION, CONSTRUCT	EACH	7	<p>LINE POST FOUNDATION, CONSTRUCT</p> <p>Dependent upon the weather conditions, time of year, and condition of the existing line post foundation as determined by the Engineer, the contractor shall construct a new foundation.</p> <p>Method of Measurement: By count for each line post foundation constructed.</p> <p>Basis of Payment: The contractor shall be paid for each line post foundation constructed. Payment is full compensation for furnishing all equipment, materials, and labor required to construct a line post foundation.</p>
19	2599-9999005	('EACH' ITEM) LINE POST FOUNDATION, REMOVE AND BACKFILL	EACH	7	<p>LINE POST FOUNDATION, REMOVE AND BACKFILL</p> <p>Dependent upon the weather conditions, time of year, and condition of the existing line post foundation as determined by the Engineer, the contractor shall remove the foundation and properly backfill with compacted material.</p> <p>Method of Measurement: By count for each line post foundation removed and backfilled.</p> <p>Basis of Payment: The contractor shall be paid for each line post foundation removed and properly backfilled. Payment is full compensation for furnishing all equipment, materials, and labor required to remove and dispose the old foundation and backfill the hole.</p>
20	2599-9999005	('EACH' ITEM) Line Post Repair (Low Tension)	EACH	30	This bid item includes low tension cable guardrail systems.
21	2599-9999005	('EACH' ITEM) Line Post Replace (Low Tension)	EACH	30	
22	2599-9999005	('EACH' ITEM) Repair End Anchor (Low Tension)	EACH	7	
23	2599-9999005	('EACH' ITEM) Traffic Control	EACH	37	<p>All repairs require Traffic Control. Minimum Traffic Control set up shall comply with TC-402 "Work Within 15 ft of Traveled Way".</p> <p>This item to be used in conjunction with "On-Call Mobilization".</p>
24	2599-9999009	('LINEAR FEET' ITEM) Low Tension Cable Guardrail, Replace	LF	75	This bid item includes low tension cable guardrail systems.

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway Items	

100_01D 8/15/22
PROJECT DESCRIPTION
On-call guardrail repair of high-tension median cable guardrail at various locations on I-29, I-80, and I-880 in Districts 3 and 4.

105_04 4/21/26		
STANDARDS		
The following Standards apply to construction work on this project.		
Number	Date	Title
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-402	04-18-23	Work Within 15 ft of Traveled Way
TC-418	04-18-23	Lane Closure on Divided Highway
TC-420	10-16-18	Lane Closure at Ramps

NR SPECIAL
NOTIFICATION REQUIREMENTS
<p><i>Repair Request Notification</i> Repair Requests will be made per the Developmental Specifications. The Engineer will e-mail a work order summarizing all the repair locations to the Contractor.</p> <p><i>Repair Completion Notification</i> The Contractor is required to complete all repairs on a work order and then notify the Engineer by e-mail that the work order is complete. Furnish repair logs and other supporting documentation with the completion notification e-mail. Upon receipt of the repair completion notification, the Engineer will confirm repairs have been accomplished in a satisfactory manner.</p> <p><i>Insufficient Repair Notification</i> The Engineer will notify the Contractor by e-mail of insufficient repairs on a work order including the locations and type of deficiency. Once the Contractor corrects the insufficient repairs, a second repair completion notification is required to be sent to the Engineer.</p>

262_06 9/28/22
UTILITIES (NOT A POINT 25 PROJECT)
This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

DISTRICTS 3 & 4 - CABLE GUARDRAIL INVENTORY							
County	Route	Direction	Type	Begin MP	Anchor Type	End MP	Anchor Type
Pottawattamie	I-880	EB	Gibraltar	0.08	CRP	0.13	CRP
Pottawattamie	I-880	WB	Gibraltar	0.12	CRP	0.17	CRP
Pottawattamie	I-880	EB	Gibraltar	1.99	CRP	2.03	CRP
Pottawattamie	I-880	WB	Gibraltar	2.02	CRP	2.07	CRP
Pottawattamie	I-880	EB	Gibraltar	5.01	CRP	5.06	CRP
Pottawattamie	I-880	WB	Gibraltar	5.05	CRP	5.09	CRP
Pottawattamie	I-880	EB	Gibraltar	7.08	CRP	7.13	CRP
Pottawattamie	I-880	WB	Gibraltar	7.12	CRP	7.17	CRP
Pottawattamie	I-880	EB	Gibraltar	10.03	CRP	10.08	CRP
Pottawattamie	I-880	WB	Gibraltar	10.07	CRP	10.12	CRP
Pottawattamie	I-880	EB	Gibraltar	12.03	CRP	12.08	CRP
Pottawattamie	I-880	WB	Gibraltar	12.07	CRP	12.12	CRP
Pottawattamie	I-880	EB	Gibraltar	14.27	CRP	14.32	CRP
Pottawattamie	I-880	WB	Gibraltar	14.31	CRP	14.36	CRP
Pottawattamie	I-80	WB	Gibraltar	6.30	CRP	6.82	CRP
Pottawattamie	I-80	WB	Gibraltar	6.91	CRP	7.12	CRP
Pottawattamie	I-80	EB	Gibraltar	7.07	CRP	7.45	CRP
Pottawattamie	I-80	WB	Gibraltar	7.46	CRP	7.68	CRP
Pottawattamie	I-80	WB	Gibraltar	7.71	CRP	8.27	CRP
Pottawattamie	I-80	EB	Gibraltar	8.23	CRP	8.52	CRP
Pottawattamie	I-80	WB	Gibraltar	8.59	CRP	9.16	CRP
Pottawattamie	I-80	EB	Gibraltar	9.11	CRP	9.68	CRP
Pottawattamie	I-80	WB	Gibraltar	9.69	CRP	9.87	CRP
Pottawattamie	I-80	EB	Gibraltar	9.90	CRP	10.46	CRP
Pottawattamie	I-80	WB	Gibraltar	10.47	CRP	10.75	CRP
Pottawattamie	I-80	EB	Gibraltar	10.88	CRP	11.49	CRP
Pottawattamie	I-80	WB	Gibraltar	11.47	CRP	12.09	CRP
Pottawattamie	I-80	EB	Gibraltar	12.04	CRP	12.61	CRP
Pottawattamie	I-80	WB	Gibraltar	12.62	CRP	12.93	CRP
Pottawattamie	I-80	EB	Gibraltar	12.96	CRP	13.16	CRP
Pottawattamie	I-80	WB	Gibraltar	13.25	CRP	13.51	CRP
Pottawattamie	I-80	EB	Gibraltar	13.46	CRP	14.03	CRP
Pottawattamie	I-80	WB	Gibraltar	14.04	CRP	14.36	CRP
Pottawattamie	I-80	EB	Gibraltar	14.32	CRP	14.64	CRP
Pottawattamie	I-80	WB	Gibraltar	14.65	CRP	15.22	CRP
Pottawattamie	I-80	EB	Gibraltar	15.17	CRP	15.74	CRP
Pottawattamie	I-80	WB	Gibraltar	15.75	CRP	16.32	CRP
Pottawattamie	I-80	EB	Gibraltar	16.27	CRP	16.58	CRP
Pottawattamie	I-80	WB	Gibraltar	16.59	CRP	16.89	CRP
Pottawattamie	I-80	EB	Gibraltar	10.13	CRP	10.18	CRP
Pottawattamie	I-80	WB	Gibraltar	10.16	CRP	10.22	CRP
Pottawattamie	I-80	EB	Gibraltar	11.42	CRP	11.47	CRP
Pottawattamie	I-80	WB	Gibraltar	11.46	CRP	11.51	CRP
Pottawattamie	I-80	EB	Gibraltar	15.22	CRP	15.27	CRP
Pottawattamie	I-80	WB	Gibraltar	15.25	CRP	15.31	CRP
Pottawattamie	I-80	EB	Gibraltar	16.90	CRP	17.53	CRP
Pottawattamie	I-80	WB	Gibraltar	17.52	CRP	18.01	CRP
Pottawattamie	I-80	EB	Gibraltar	17.96	CRP	18.41	CRP
Pottawattamie	I-80	EB	Gibraltar	18.43	CRP	18.57	CRP
Pottawattamie	I-80	WB	Gibraltar	18.69	CRP	19.08	CRP
Pottawattamie	I-80	EB	Gibraltar	19.04	CRP	19.55	CRP
Pottawattamie	I-80	WB	Gibraltar	19.56	CRP	20.10	CRP
Pottawattamie	I-80	EB	Gibraltar	20.04	CRP	20.58	CRP
Pottawattamie	I-80	WB	Gibraltar	20.59	CRP	21.13	CRP
Pottawattamie	I-80	EB	Gibraltar	21.08	CRP	21.60	CRP
Pottawattamie	I-80	WB	Gibraltar	21.73	CRP	22.03	CRP
Pottawattamie	I-80	EB	Gibraltar	21.94	CRP	22.50	CRP
Pottawattamie	I-80	WB	Gibraltar	22.53	CRP	23.03	CRP
Pottawattamie	I-80	EB	Gibraltar	22.99	CRP	23.21	CRP
Pottawattamie	I-80	WB	Gibraltar	23.20	CRP	23.71	CRP
Pottawattamie	I-80	EB	Gibraltar	23.67	CRP	23.92	CRP
Pottawattamie	I-80	WB	Gibraltar	23.96	CRP	24.45	CRP
Pottawattamie	I-80	EB	Gibraltar	24.40	CRP	24.93	CRP
Pottawattamie	I-80	WB	Gibraltar	25.05	CRP	25.47	CRP
Pottawattamie	I-80	EB	Gibraltar	25.42	CRP	25.79	CRP
Pottawattamie	I-80	WB	Gibraltar	25.80	CRP	26.23	CRP
Pottawattamie	I-80	EB	Gibraltar	26.18	CRP	26.67	CRP
Pottawattamie	I-80	WB	Gibraltar	26.79	CRP	27.03	CRP
Pottawattamie	I-80	EB	Gibraltar	27.77	CRP	28.07	CRP
Pottawattamie	I-80	WB	Gibraltar	28.21	CRP	28.29	CRP
Pottawattamie	I-80	EB	Gibraltar	28.32	CRP	28.51	CRP
Pottawattamie	I-80	WB	Gibraltar	28.54	CRP	29.01	CRP
Pottawattamie	I-80	WB	Gibraltar	29.07	CRP	29.40	CRP
Pottawattamie	I-80	EB	Gibraltar	29.32	CRP	29.63	CRP
Pottawattamie	I-80	WB	Gibraltar	29.36	CRP	29.40	CRP
Pottawattamie	I-80	WB	Gibraltar	29.72	CRP	30.10	CRP
Pottawattamie	I-80	WB	Gibraltar	30.18	CRP	30.28	CRP
Pottawattamie	I-80	WB	Gibraltar	30.36	CRP	30.78	CRP
Pottawattamie	I-80	WB	Gibraltar	30.78	CRP	31.20	CRP
Pottawattamie	I-80	WB	Gibraltar	31.20	CRP	31.67	CRP

DISTRICTS 3 & 4 - CABLE GUARDRAIL INVENTORY							
County	Route	Direction	Type	Begin MP	Anchor Type	End MP	Anchor Type
Pottawattamie	I-80	EB	Gibraltar	31.78	CRP	32.35	CRP
Pottawattamie	I-80	EB	Gibraltar	32.35	CRP	32.92	CRP
Pottawattamie	I-80	WB	Gibraltar	32.83	CRP	32.87	CRP
Pottawattamie	I-80	EB	Gibraltar	32.92	CRP	33.48	CRP
Pottawattamie	I-80	EB	Gibraltar	33.48	CRP	34.04	CRP
Pottawattamie	I-80	EB	Gibraltar	34.10	CRP	34.57	CRP
Pottawattamie	I-80	EB	Gibraltar	34.57	CRP	35.03	CRP
Pottawattamie	I-80	WB	Gibraltar	34.32	CRP	34.37	CRP
Pottawattamie	I-80	EB	Gibraltar	35.24	CRP	35.73	CRP
Pottawattamie	I-80	EB	Gibraltar	35.73	CRP	36.23	CRP
Pottawattamie	I-80	EB	Gibraltar	36.23	CRP	36.72	CRP
Pottawattamie	I-80	EB	Gibraltar	36.72	CRP	37.21	CRP
Pottawattamie	I-80	WB	Gibraltar	36.83	CRP	36.87	CRP
Pottawattamie	I-80	EB	Gibraltar	37.21	CRP	37.70	CRP
Pottawattamie	I-80	EB	Gibraltar	37.70	CRP	38.20	CRP
Pottawattamie	I-80	EB	Gibraltar	38.20	CRP	38.69	CRP
Pottawattamie	I-80	EB	Gibraltar	38.69	CRP	39.12	CRP
Pottawattamie	I-80	EB	Gibraltar	39.27	CRP	39.48	CRP
Pottawattamie	I-80	EB	Gibraltar	39.61	CRP	40.08	CRP
Pottawattamie	I-80	EB	Gibraltar	40.08	CRP	40.56	CRP
Pottawattamie	I-80	WB	Gibraltar (UAC)	40.22	CRP	40.29	CRP
Pottawattamie	I-80	EB	Gibraltar	40.56	CRP	41.05	CRP
Pottawattamie	I-80	WB	Gibraltar	41.13	CRP	41.49	CRP
Pottawattamie	I-80	WB	Gibraltar	41.58	CRP	41.96	CRP
Pottawattamie	I-80	WB	Gibraltar	41.96	CRP	42.34	CRP
Pottawattamie	I-80	WB	Gibraltar	42.34	CRP	42.74	CRP
Pottawattamie	I-80	EB	Gibraltar	42.78	CRP	43.29	CRP
Pottawattamie	I-80	EB	Gibraltar	43.29	CRP	43.81	CRP
Pottawattamie	I-80	EB	Gibraltar	43.82	CRP	44.39	CRP
Pottawattamie	I-80	EB	Gibraltar	44.39	CRP	44.97	CRP
Pottawattamie	I-80	WB	Gibraltar	44.69	CRP	44.76	CRP
Pottawattamie	I-80	EB	Gibraltar	44.97	CRP	45.09	CRP
Pottawattamie	I-80	EB	Gibraltar	45.19	CRP	45.59	CRP
Pottawattamie	I-80	EB	Gibraltar	45.64	CRP	46.23	CRP
Pottawattamie	I-80	WB	Gibraltar	46.19	CRP	46.26	CRP
Pottawattamie	I-80	EB	Gibraltar	46.23	CRP	46.60	CRP
Pottawattamie	I-80	EB	Gibraltar	46.60	CRP	46.82	CRP
Pottawattamie	I-80	EB	Gibraltar	46.87	CRP	47.45	CRP
Pottawattamie	I-80	EB	Gibraltar	47.45	CRP	48.02	CRP
Pottawattamie	I-80	EB	Gibraltar	48.02	CRP	48.59	CRP
Pottawattamie	I-80	EB	Gibraltar	48.59	CRP	49.16	CRP
Pottawattamie	I-80	WB	Gibraltar	48.69	CRP	48.75	CRP
Pottawattamie	I-80	EB	Gibraltar	49.16	CRP	49.72	CRP
Fremont	I-29	NB	Gibraltar	1.76	CRP	1.82	CRP
Fremont	I-29	SB	Gibraltar	1.79	CRP	1.85	CRP
Fremont	I-29	NB	Gibraltar	5.88	CRP	5.94	CRP
Fremont	I-29	SB	Gibraltar	5.90	CRP	5.96	CRP
Fremont	I-29	NB	Trinity	12.96	CCT	13.01	CCT
Fremont	I-29	SB	Trinity	12.99	CCT	13.04	CCT
Fremont	I-29	NB	Trinity	15.44	CCT	15.49	CCT
Fremont	I-29	SB	Trinity	15.47	CCT	15.52	CCT
Fremont	I-29	NB	Trinity	21.60	CCT	21.66	CCT
Fremont	I-29	SB	Trinity	21.63	CCT	21.69	CCT
Fremont	I-29	NB	Trinity	24.96	CCT	25.01	CCT
Fremont	I-29	SB	Trinity	24.99	CCT	25.04	CCT
Mills	I-29	NB	Gibraltar	26.20	CRP	26.24	CRP
Mills	I-29	SB	Gibraltar	26.22	CRP	26.26	CRP
Mills	I-29	NB	Gibraltar	28.51	CRP	28.54	CRP
Mills	I-29	SB	Gibraltar	28.53	CRP	28.56	CRP
Mills	I-29	NB	Trinity	34.01	CCT	34.07	CCT
Mills	I-29	SB	Trinity	34.05	CCT	34.11	CCT
Mills	I-29	SB	Gibraltar	34.62	CRP	35.59	CRP
Mills	I-29	NB	Gibraltar	35.49	CRP	36.40	CRP
Mills	I-29	NB	Gibraltar	36.41	CRP	37.39	CRP
Mills	I-29	SB	Gibraltar	37.39	CRP	38.62	CRP
Mills	I-29	SB	Gibraltar	38.63	CRP	39.63	CRP
Mills	I-29	NB	Gibraltar	39.57	CRP	40.15	CRP
Mills	I-29	SB	Gibraltar	40.15	CRP	41.08	CRP
Mills	I-29	NB	Gibraltar	40.97	CRP	41.94	GT
Mills	I-29	NB	Gibraltar	41.98	CRP	42.16	CRP
Mills	I-29	SB	Gibraltar	42.17	CRP	42.90	CRP
Mills	I-29	NB	Gibraltar	42.80	CRP	43.75	CRP
Pottawattamie	I-29	NB	Gibraltar	43.76	CRP	44.68	CRP
Pottawattamie	I-29	SB	Gibraltar	44.68	CRP	44.88	CRP
Pottawattamie	I-29	NB	Trinity	44.83	CCT	45.04	GT
Pottawattamie	I-29	NB	Trinity	45.16	CCT	46.45	CCT
Pottawattamie	I-29	NB	Trinity	46.46	CCT	46.72	GT
Pottawattamie	I-29	SB	Trinity	45.59	CCT	45.70	CCT
Pottawattamie	I-29	NB	Gibraltar	47.85	CRP	47.95	CRP
Pottawattamie	I-29	SB	Gibraltar	47.88	CRP	47.98	CRP
Pottawattamie	I-29	NB	Gibraltar	54.71	CRP	54.77	CRP
Pottawattamie	I-29	SB	Gibraltar	54.75	CRP	54.80	CRP
Pottawattamie	I-29	NB	Gibraltar	56.41	CRP	56.58	CRP

FILE NO.	ENGLISH	DESIGN TEAM	MAYBERRY\MALONE\KELLY	DISTRICTS 3 & 4 COUNTY	PROJECT NUMBER	IMN-000-T(483)0--0E-78	SHEET NUMBER	C.5
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4/8/20263:25:05 PMmkellyW:\Highway\District4\Design\District 4 Design\2026\District 4 On-Call Cable Guardrail\IMN-000-T(483)0--0E-78\Extra C Sheets.xlsm

<div>TRAFFIC CONTROL PLAN</div> <div>1. Maintain at least one lane of traffic in each direction at all times. 2. All repairs are expected to be completed with closures per the TC series of the Standard Road Plans. 3. Traffic control for this project shall be in accordance with the TC series of the Standard Road Plans on Tabulation 105-4. Refer to current Standard Specifications for additional information. 4. The contractor shall coordinate traffic control with other projects in the area. I-29 Traffic control: 1. Missouri Border to Exit 42 (Bellevue): See Sheet J.4 2. Exit 42 (Bellevue) to Exit 47 (US-275): Use CBIS allowable lane closures. See Sheets J.5 through J.6 3. Exit 47 (US-275) to Exit 56 (N. 16th St.): Use CBIS allowable lane closures. See Sheets J.5 through J.6 4. Exit 56 (N. 16th St.) to Exit 61 (I-680): No lane closure restrictions 5. Exit 61 (I-680) to Exit 75 (Missouri Valley): No lane closures on Fridays, 2pm to 6pm, May through October 6. Exit 75 (Missouri Valley) to MP 151.87 (South Dakota border): See Sheets J.3 and J.4 I-80 traffic control: Missouri River to Cass County line: Nighttime closures only. See Sheet J.4 through J.6 for lane and shoulder closure times. I-880 traffic control: MP 0 (Jct I-29) to MP 16.94 (Jct I-80): No lane closure restrictions</div>	108_23A 8/15/22
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511 TRAVEL RESTRICTIONS									108_25 3/28/24
Line No.	Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No. or Structure ID or FHWA No.	Type of Restriction	Remarks
1.0	I-29	Both	Pottawattamie	From Missouri border to South Dakota border		Traffic Control Device		Horizontal	
2.0	I-80	Both	Pottawattamie	MP 0.00 to MP 49.71		Traffic Control Device		Horizontal	
3.0	I-880	Both	Pottawattamie	MP 0.00 to MP 16.94		Traffic Control Device		Horizontal	

111_01
10/14/22

COORDINATED OPERATIONS

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

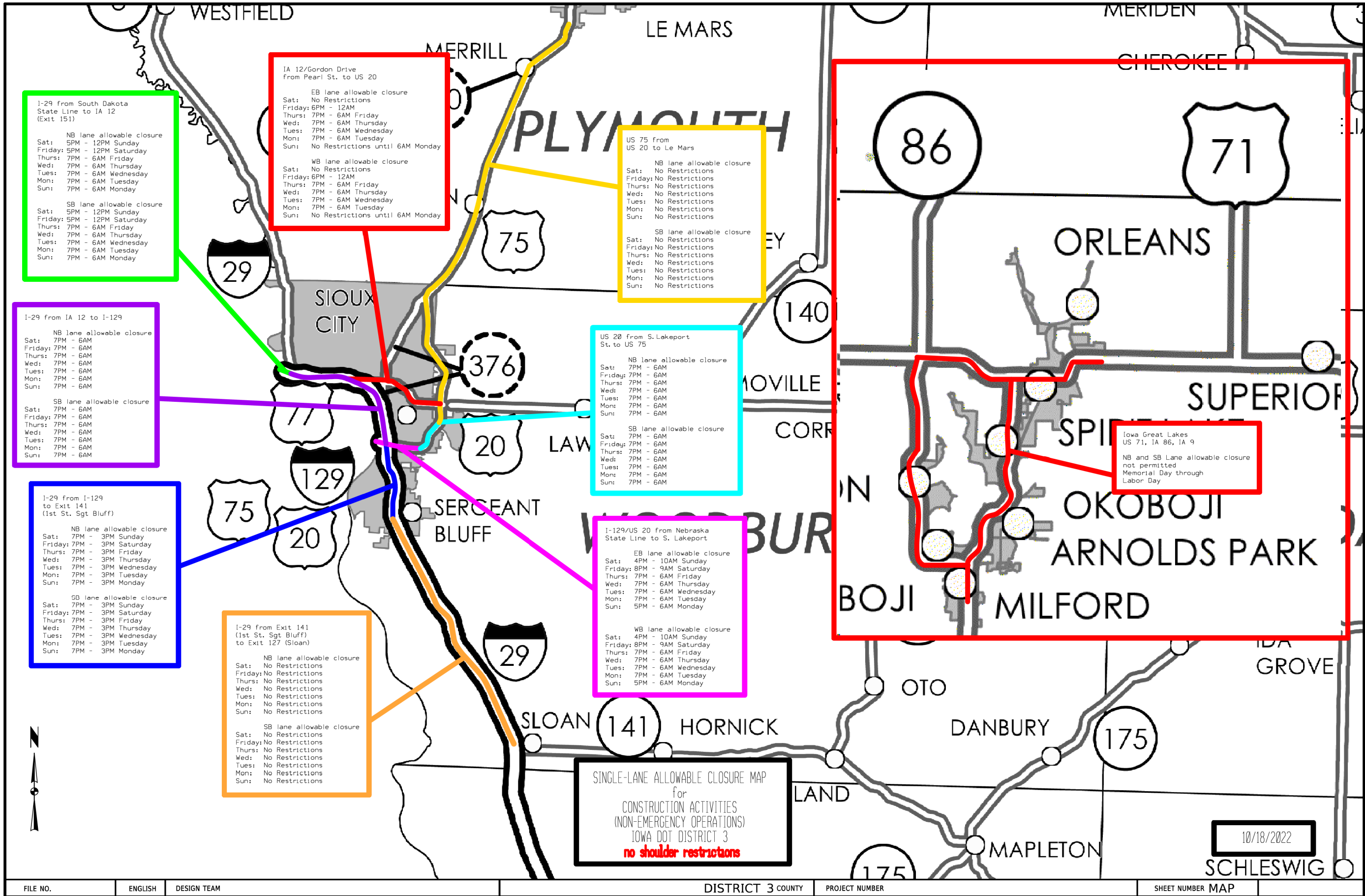
Project	Type of Work
IMN-029-1(148)7--0E-36	Revetment
IMN-029-1(154)10--0E-36	Landscaping
IMN-029-1(155)26--0E-65	Steel Girder Repair
IMN-029-1(156)26--0E-65	Grading
IMN-029-1(157)26--0E-65	Bridge Removal
IMN-029-4(133)66--0E-78	Bridge Replacement-PPCB
IMN-029-5(268)110--0E-67	Rest Area Building - New
IMN-029-5(286)109--0E-67	Rest Area Building - New
IMN-029-6(170)139--0E-97	PCC Pavement - Grade and New
IMN-029-6(308)120--0E-67	Bridge Deck Overlay
IMN-029-6(309)133--0E-97	PCC Pavement - Replace
IMN-029-6(311)139--0E-97	Grading
IMN-029-6(313)139--0E-97	Grading
IMN-029-6(314)139--0E-97	Bridge New-PPCB
IMN-029-6(315)139--0E-97	Traffic Signs
IMN-029-6(316)139--0E-97	Lighting
IMN-029-6(317)139--0E-97	Erosion Control
IMN-029-6(319)139--0E-97	Traffic Signals
IMN-029-6(320)139--0E-97	Bridge New-PPCB
IMN-029-6(325)133--0E-97	Weigh Scale Building - New
IMN-029-6(326)133--0E-97	Weigh Scale - Scales & Electronics
IMN-029-6(330)148--0E-97	Traffic Signals
IMN-029-8(046)152--0E-97	Deck Joint Repair
IMN-080-1(515)0--0E-78	Bridge Cleaning
IMN-080-1(529)0--0E-78	Bridge Cleaning
IMN-080-1(554)0--0E-78	Bridge Cleaning
IMN-080-1(570)43--0E-78	Bridge Repair
IMX-029-1(151)0--02-36	HMA Resurfacing
IMX-029-1(152)21--02-36	HMA Resurfacing
IMX-029-2(099)36--02-65	HMA Resurfacing with Milling
IMX-029-3(270)57--02-78	Bridge Replacement-PPCB
IMX-029-4(138)76--02-43	Recon - Bridge Deck Replacement
IMX-029-4(139)71--02-78	Recon - Bridge Deck Replacement
IMX-029-4(140)56--02-78	Pavement Planing/Grooving
IMX-029-4(148)62--02-78	Grading
IMX-029-5(266)78--02-43	Recon - Bridge Deck Replacement
IMX-029-5(274)106--02-67	Unknown Pavement - Replace
IMX-029-5(275)86--02-43	Bridge Replacement-CCS
IMX-029-5(282)109--02-67	PCC Pavement - Grade and Replace
IMX-029-5(283)109--02-67	Traffic Signs
IMX-029-5(284)109--02-67	Lighting
IMX-080-1(517)6--02-78	Pavement Planing/Grooving
IMX-080-1(523)28--02-78	Pavement Planing/Grooving
IMX-080-1(545)34--02-78	RCB Culvert Extension - Twin Box
IMX-080-1(546)48--02-78	RCB Culvert Extension - Triple Box
IMX-080-1(561)39--02-78	HMA Resurfacing
IMX-080-1(569)17--02-78	HMA Resurfacing with Milling
IMX-080-1(573)17--02-78	HMA Resurfacing with Milling
IMX-880-1(005)16--02-78	Bridge Deck Overlay
IMX-880-1(4)16--02-78	Recon - Bridge Deck Replacement
ITS-029-6(324)139--25-97	Intelligent Work Zone (IWZ)
MBIN-029-3(509)148--0M-97	Bridge Repair

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10/14/22

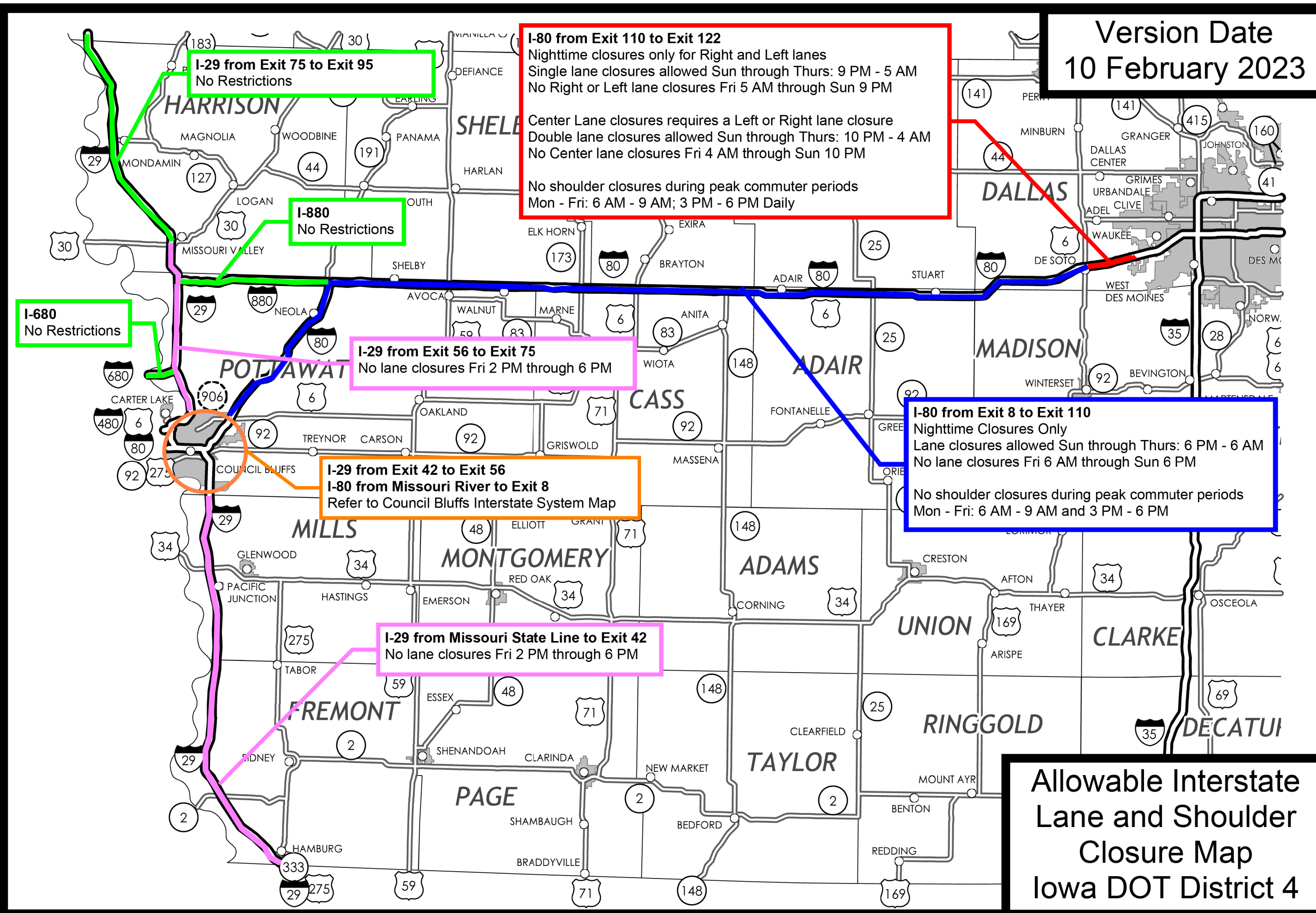
COORDINATED OPERATIONS

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
MBIN-029-3(510)149--0M-97	Bridge Repair
MBIN-029-3(514)96--0M-43	Slope Protection
MBIN-029-4(511)76--0M-43	Bridge Repair
MBIN-080-4(522)19--0M-78	Slope Protection
MBIN-080-4(523)23--0M-78	Bridge Painting
MBIN-880-4(501)7--0M-78	Slope Protection
MPIN-029-3(726)125--0N-67	Fencing
MPIN-029-3(733)146--0N-97	Clearing and Grubbing
MPIN-029-3(733)72--0N-43	PCC Patching
MPIN-029-4(709)39--0N-65	HMA Paved Shoulder - Fog Seal
MPIN-029-4(715)0--0N-36	PCC Patching
MPIN-029-4(718)62--0N-78	Slurry Seal
MPIN-029-4(719)72--0N-78	Microsurfacing
MPIN-029-4(734)77--0N-43	HMA Resurfacing with Milling
MPIN-029-4(735)73--0N-43	Fencing
MPIN-080-4(732)0--0N-78	PCC Patching
MPIN-080-4(733)28--0N-78	HMA Resurfacing with Milling
MPIN-880-4(707)3--0N-78	PCC Patching
RP-029-6(329)139--16-97	PCC Pavement - Grade and New



Version Date
10 February 2023



Allowable Interstate
Lane and Shoulder
Closure Map
Iowa DOT District 4

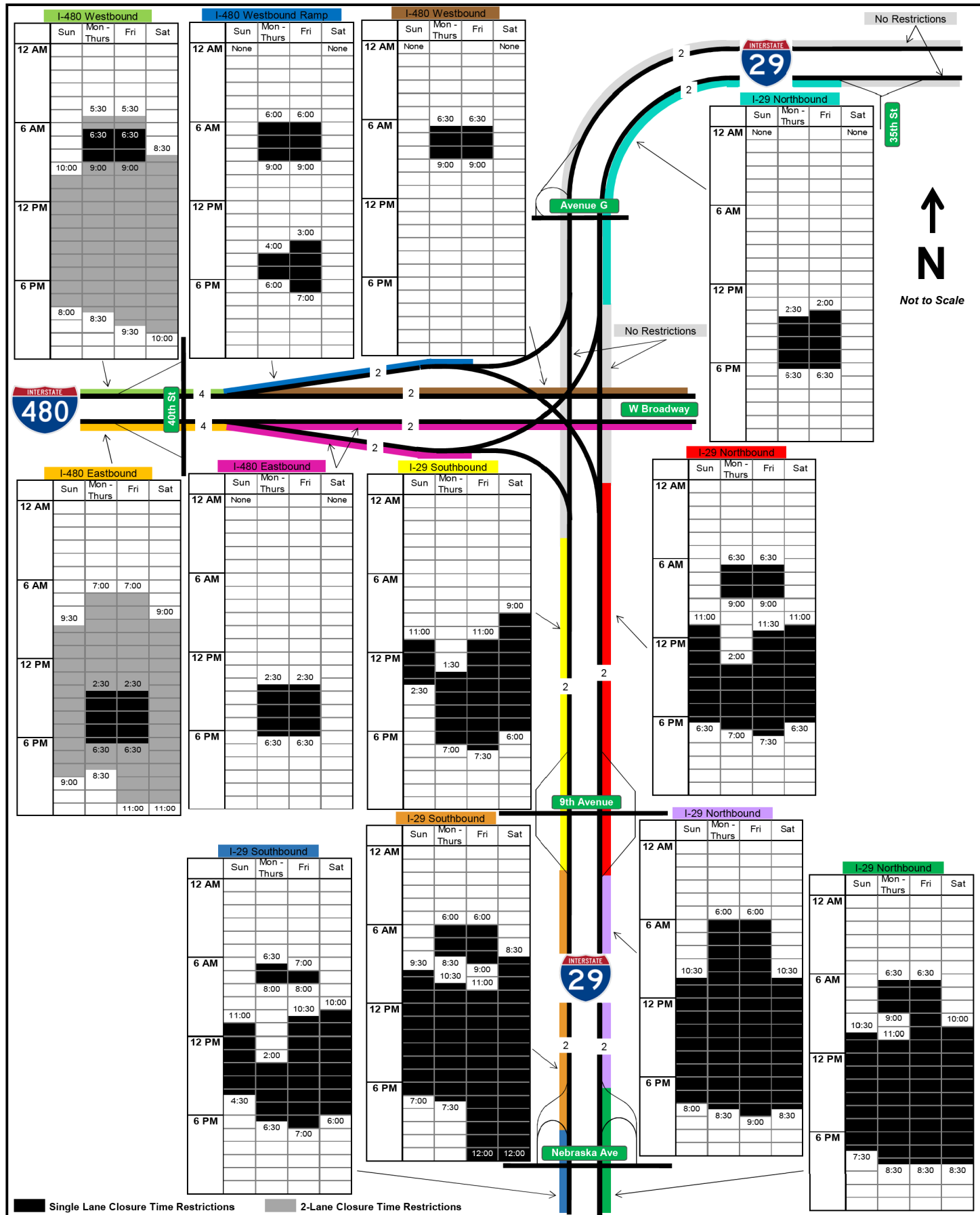


Figure 15.4.2.1 - F-1 Closure Time Restrictions - Segment 4

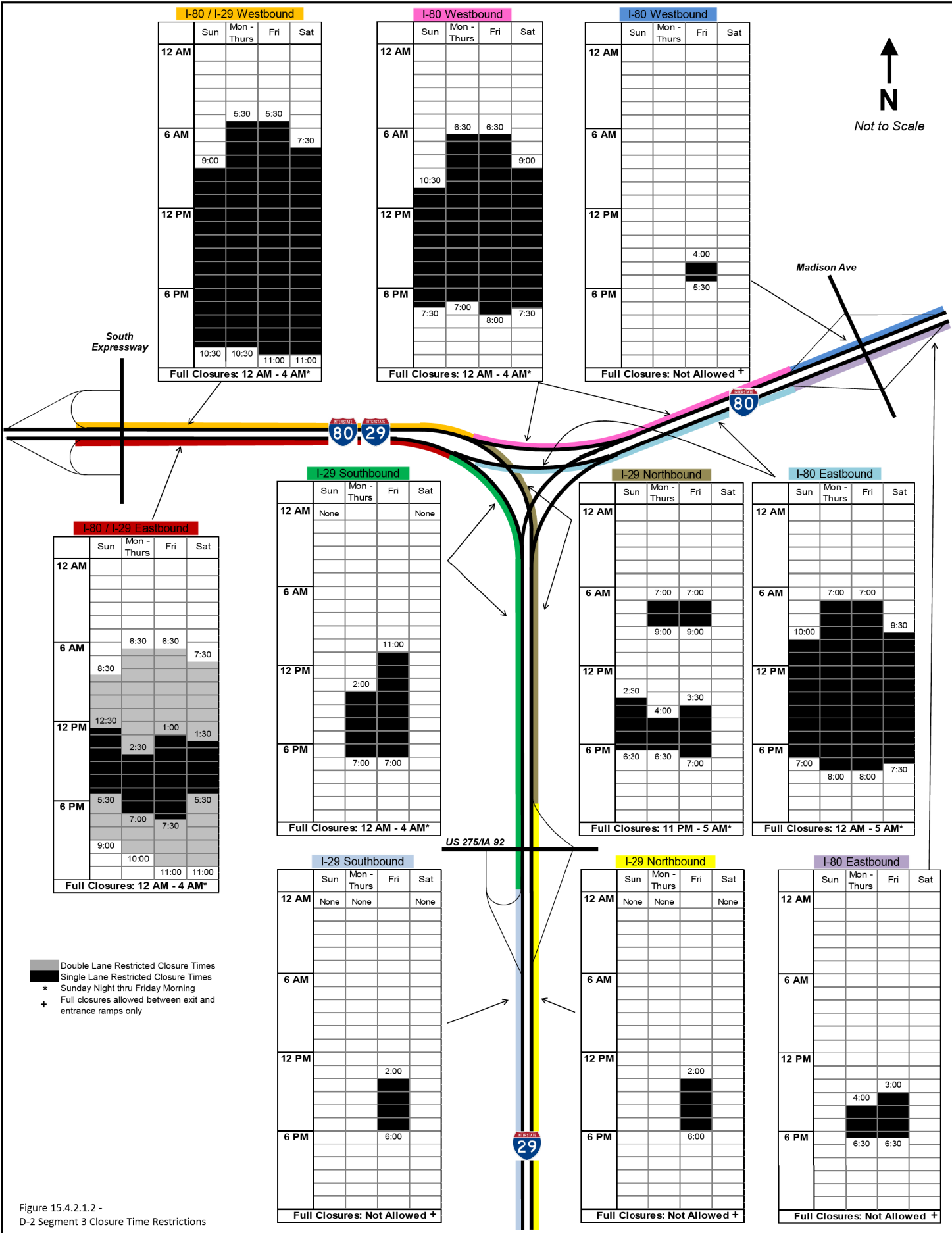


Figure 15.4.2.1.2 - D-2 Segment 3 Closure Time Restrictions

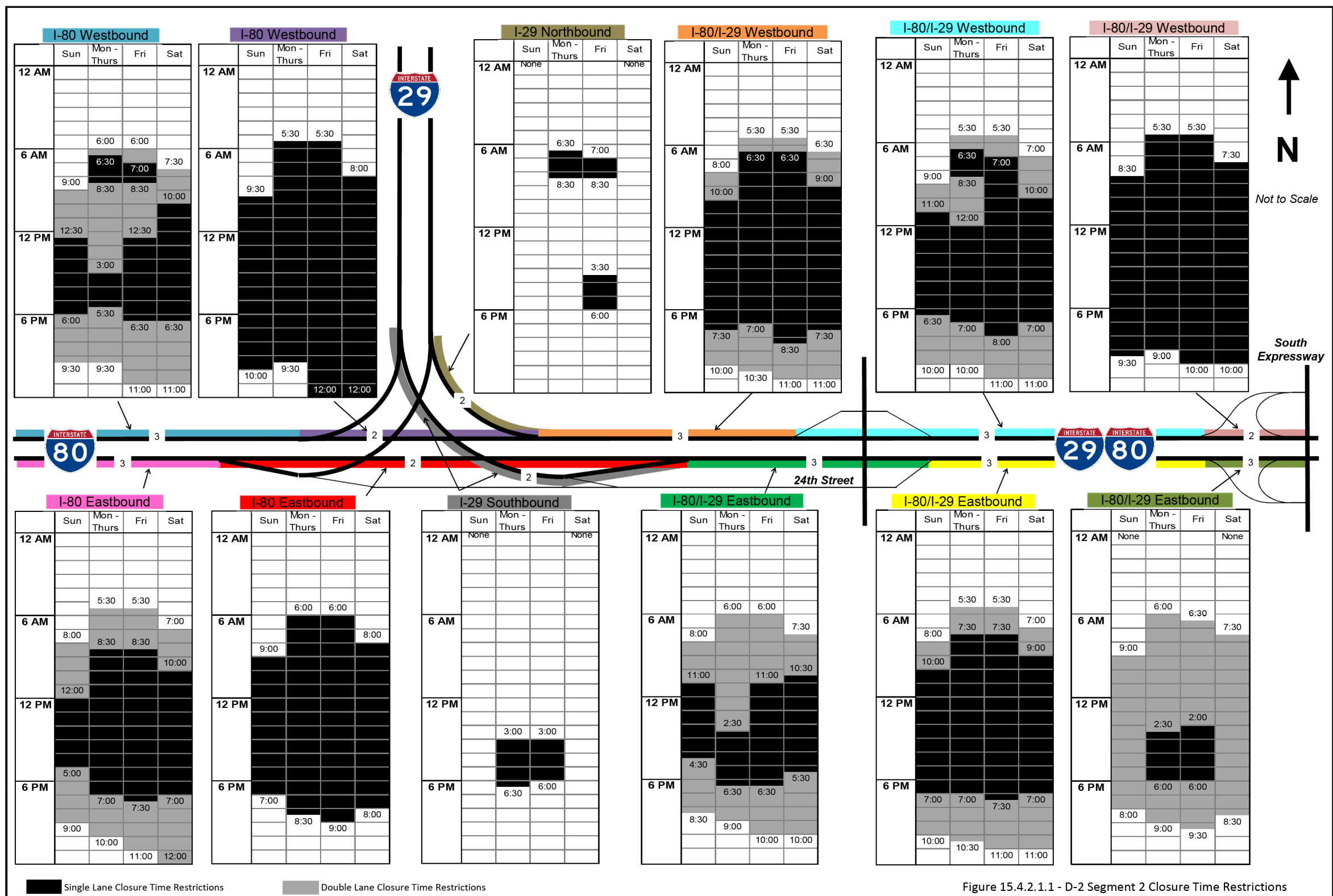
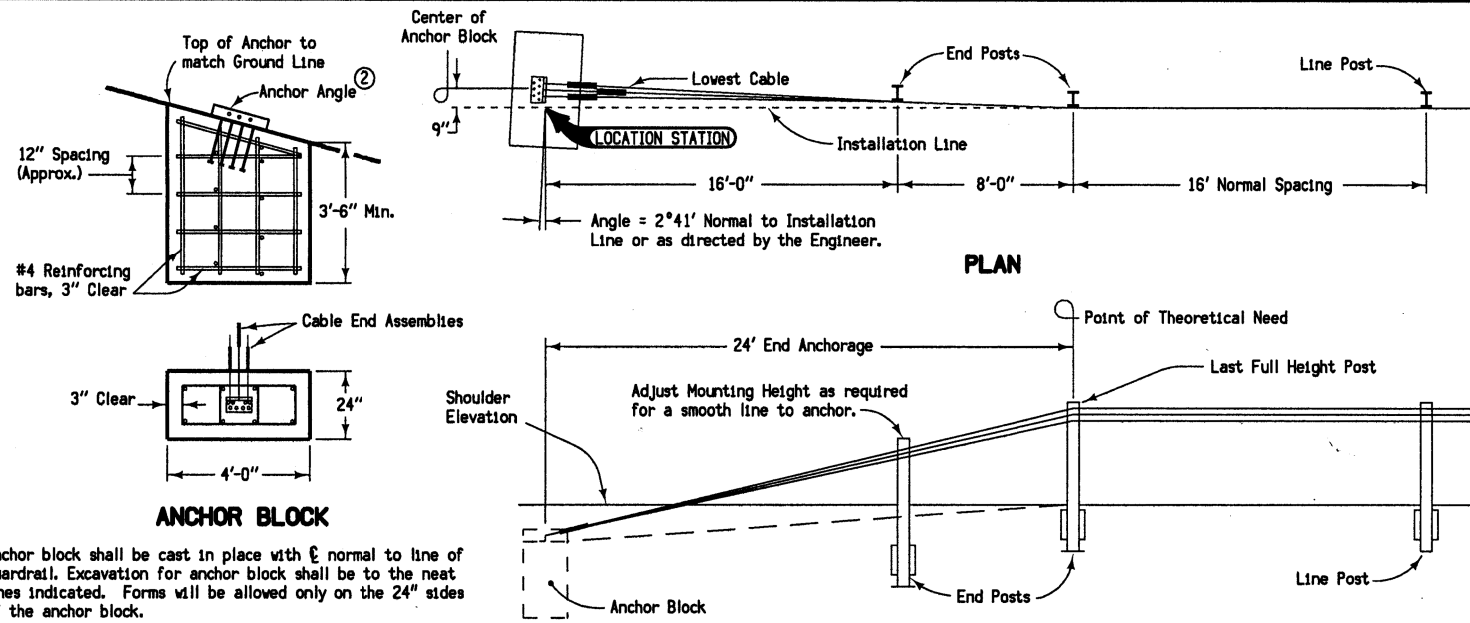


Figure 15.4.2.1.1 - D-2 Segment 2 Closure Time Restrictions



Cable end assemblies shall be installed based on the length of run as follows:

Less than 500' - Use a spring type compensating device on one end and a turnbuckle on the opposite end of each individual cable.

500' to 1000' - Use a spring type compensating device plus a turnbuckle on each end of each individual cable.

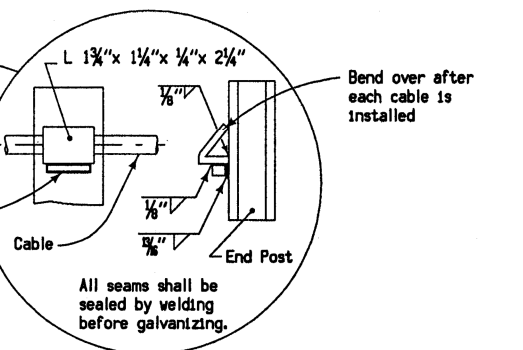
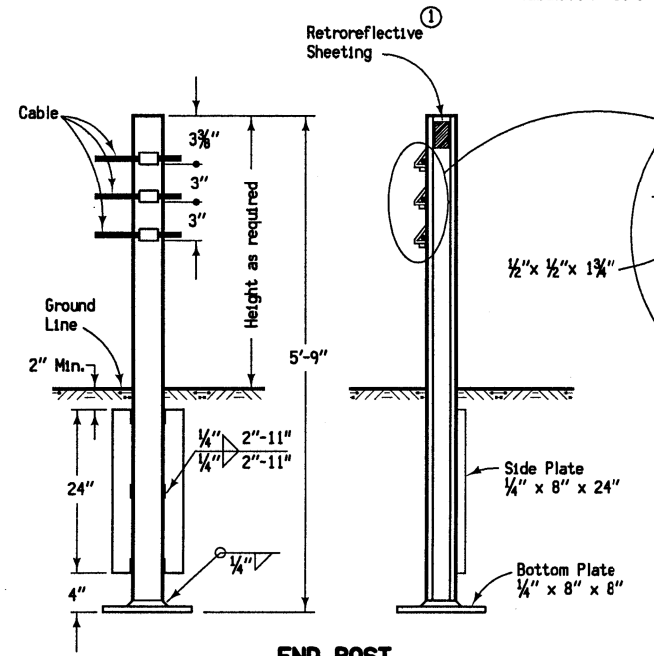
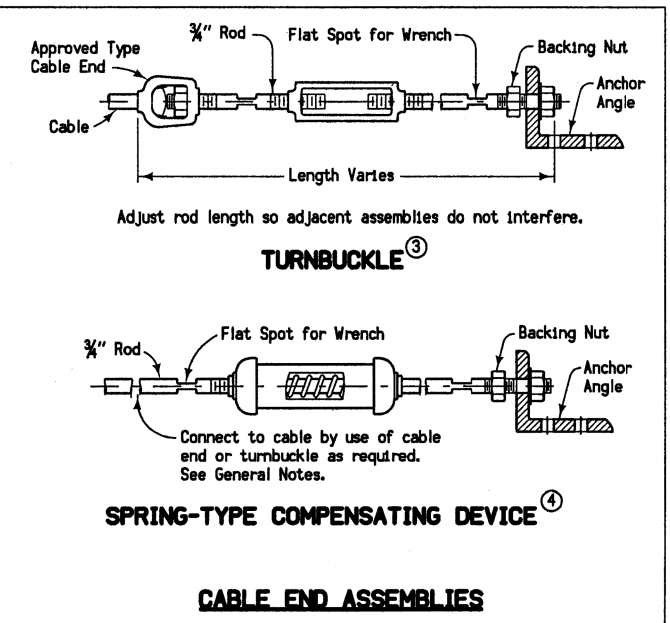
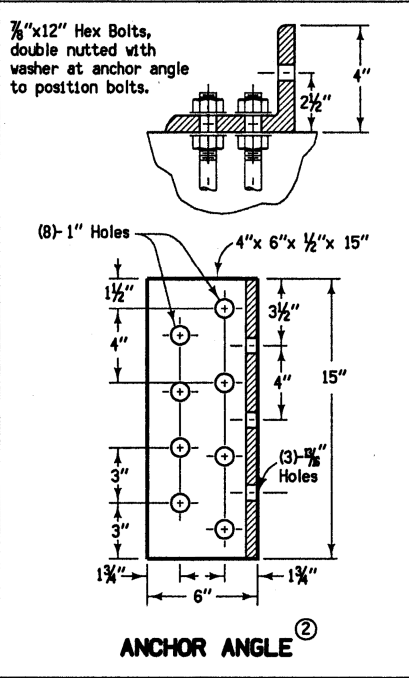
- ① Apply Type III or IV retroreflective sheeting to both end posts of the anchor at the beginning of an installation and at the end of an installation. The sheeting shall provide a minimum surface area of 7 square inches and shall match the color of the adjacent edge line. Attach sheeting to that side of the post from which impacts are most likely to occur. Where impacts are likely to occur from either direction, attach sheeting to both sides of the post.
- ② No welding of the galvanized anchor angle and attached hardware is allowed.
- ③ Turnbuckles are used to properly tension each cable, depending on the ambient temperature at the time of adjustment — refer to table, this sheet. Apply tension at one end of cable only. Turnbuckles shall be of the open type and shall each provide for a minimum takeup of 12 inches.
- ④ Spring-type compensating devices maintain proper cable tension at various temperature conditions. Devices shall provide for a minimum travel of 5 inches and shall have a spring rate of 450 + 50 lbs. per inch.

Contract Item: Guardrail, End Anchorage, Cable

Tabulation: 108-9

Materials included in the Contract Item:

- 1 Anchor Angle and Hardware
- 1.19 cubic yards concrete
- 59 lbs. of reinforcing steel (approx.)
- 3 Cable End Assemblies



CABLE TENSION ADJUSTMENTS FOR TEMPERATURE VARIATIONS													
Temperature Range Degrees F	120 to 110	109 to 100	99 to 90	89 to 80	79 to 70	69 to 60	59 to 50	49 to 40	39 to 30	29 to 20	19 to 10	9 to 0	-1 to -20
Spring Compression Inches *	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4 1/4

* From the unloaded position in each spring

Iowa Department of Transportation

REVISION

13	10-16-07
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RE-29A

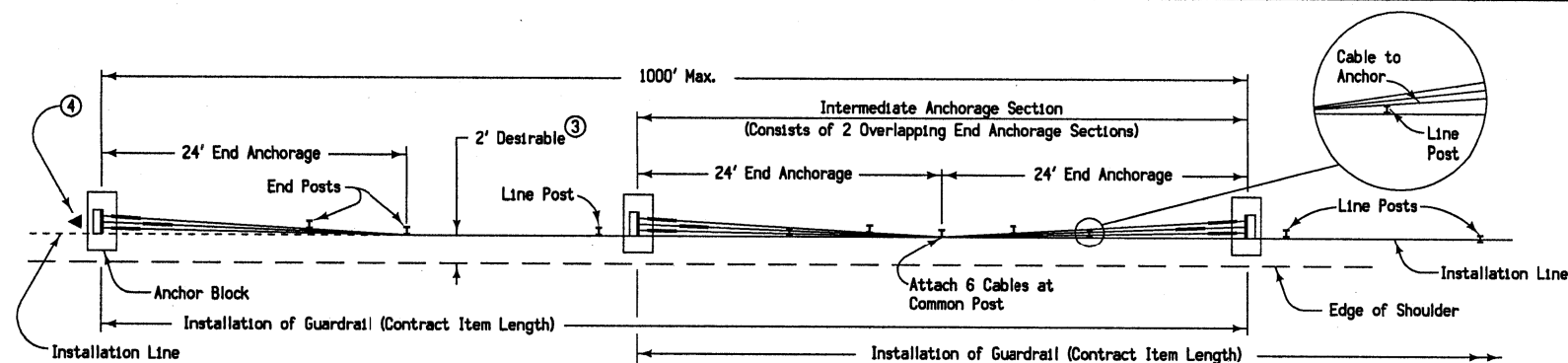
SHEET 1 of 1

REVISIONS: General re-write for clarity. Added note to tension one end only. Removed base plate from line post.

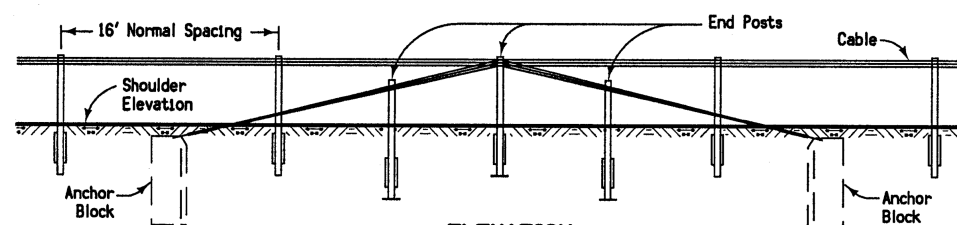
Deanna Mailfield

APPROVED BY DESIGN METHODS ENGINEER

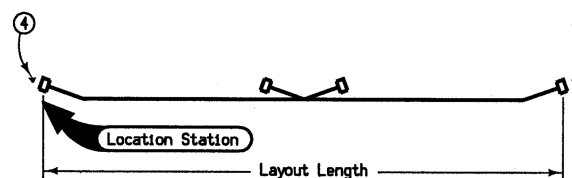
CABLE GUARDRAIL END ANCHORAGE



PLAN



ELEVATION

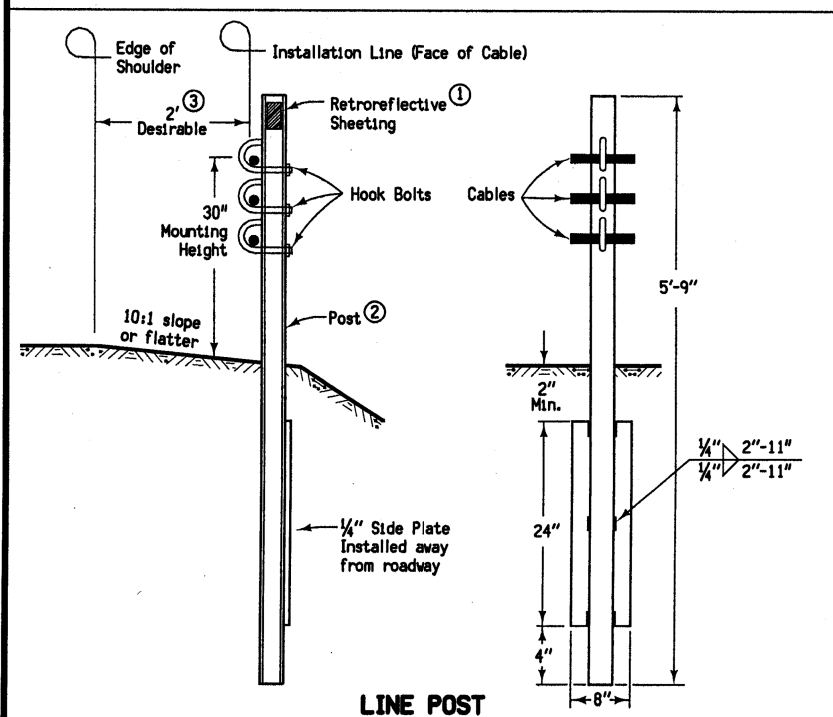


Post spacing shall be 12 feet for curves with radii between 442 and 721 feet. Post spacing shall be 16 feet for curves with radii greater than 721 feet.

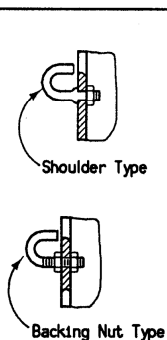
Posts may be driven - except end posts, which shall be set to proper location in pre-drilled holes and securely backfilled and compacted.

For runs over 1000', overlapping end anchorage shall be located to provide approximately equal length sections of guardrail. Maximum length between anchorages shall be 1000'.

- ① Apply Type III or IV retroreflective sheeting to the first three posts and the last three posts of each installation, and to every third post in between. The sheeting shall provide a minimum surface area of 7 square inches and shall match the color of the adjacent edge line. Attach sheeting to that side of the post from which impacts are most likely to occur. Where impacts are likely to occur from either direction, attach sheeting to both sides of the post.
- ② Either Type S 3x5.7 or Type C 3x5.9 meeting minimum cross section dimensions as shown may be used.
- ③ Installation line shall be on a 10:1 or flatter slope. To achieve this, it may be placed closer than 2 feet from the edge of shoulder.
- ④ Type 2 Object Marker (MUTCD OM2-1H). Two Object Markers required per installation. Object Markers shall be considered incidental to "Installation of Guardrail."



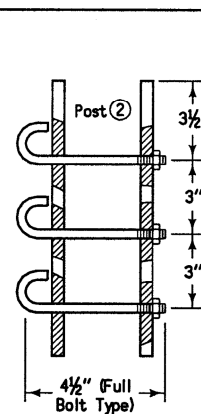
LINE POST



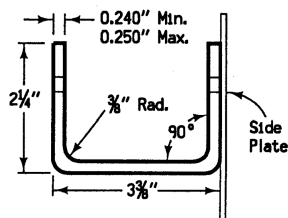
ALTERNATE HOOK BOLTS

Note:
Hook bolts, as installed, shall develop an ultimate pull open strength of from 500 to 1000 lbs. applied in a direction normal to the longitudinal axis of the posts. Only use ONE type of bolt per project.

HOOK BOLT INSTALLATION



TYPE S 3x5.7 POST



TYPE C 3x5.9 POST

POST OPTIONS

Contract Items:

Installation of Guardrail
Guardrail, End Anchorage, Cable, RE-29A

Tabulation: 108-9

<p>Iowa Department of Transportation</p> <p>STANDARD ROAD PLAN</p> <p>REVISIONS: General re-write for clarity. Added retroreflective sheeting requirements. Removed delineators.</p> <p><i>Deanna Mifflin</i> APPROVED BY DESIGN METHODS ENGINEER</p>	<p>REVISION</p> <p>13 10-16-07</p>
	<p>RE-29C</p>
	<p>SHEET 1 of 1</p>
	<p>CABLE GUARDRAIL</p>