

TRAFFIC SIGNS
IM-080-3(275)125--13-77
LETTING DATE
09-15-2026

POLK COUNTY

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
* A.1	Title Sheet
B Sheets	Typical Cross Sections and Details
* B.1 - 7	Typical Cross Sections and Details
C Sheets	Quantities and General Information
* C.1 - 6	Quantities and ERI Notes
* C.7 - 10	Tabulations
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
N Sheets	Traffic and ITS Sheets
* N.1 - 5	Signing Staging Layout
* N.6	Signing Details
* N.7 - 8	RDMS Cross Sections
* N.9 - 16	ITS Layout
U Sheets	500 Series, Mod.Stds. and Detail Sheets
* U.1 - 5	Splicing Diagrams
	* Color Plan Sheets



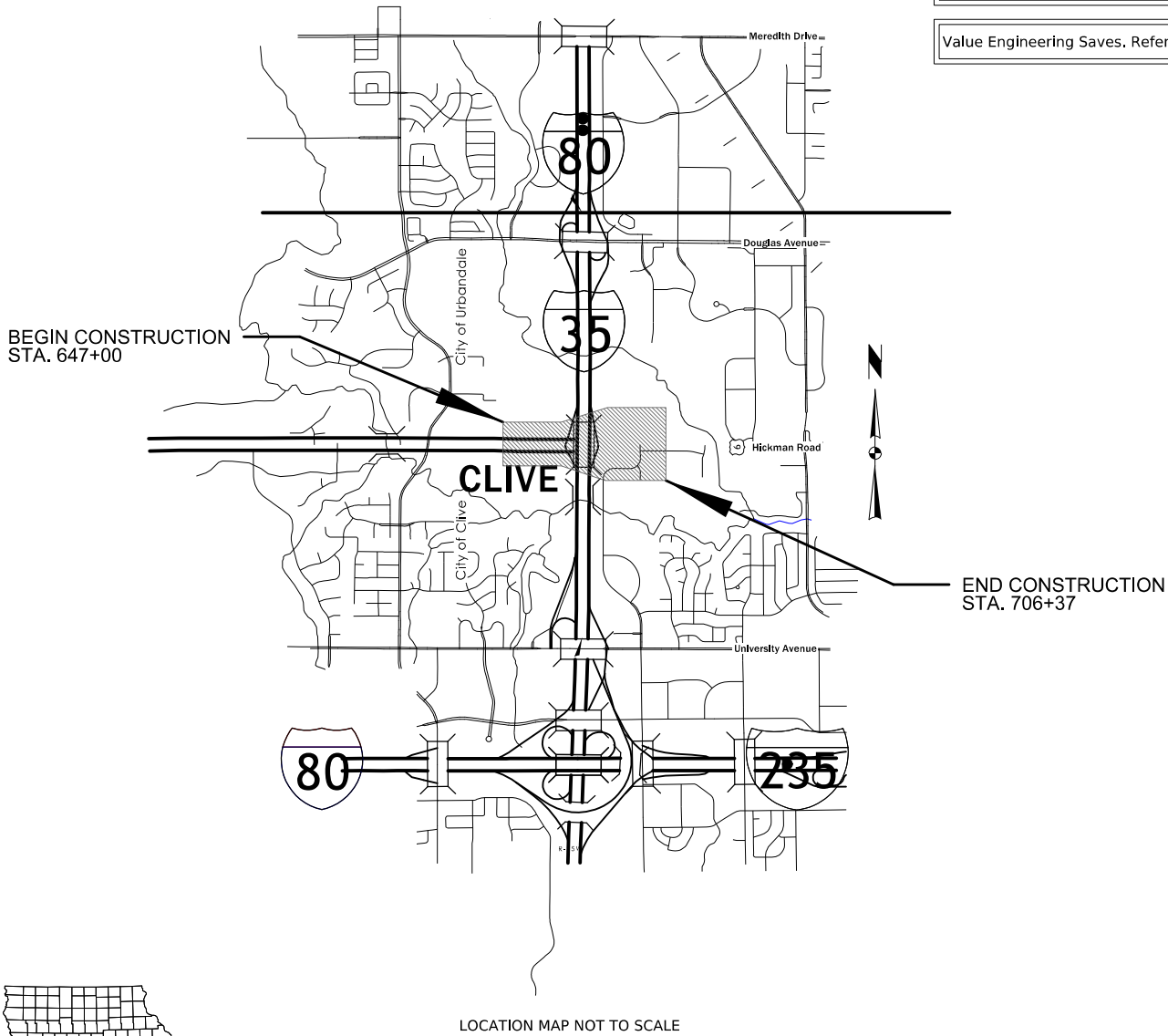
PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
POLK COUNTY
TRAFFIC SIGNS

US 6 / HICKMAN INTERCHANGE IN
CLIVE AND URBANDALE

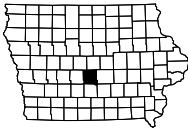
SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



LOCATION MAP NOT TO SCALE



INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Garret Menard	Primary Signature Block
A.1	Brent Froning	ITS Signature Block

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 Brent M. Froning Date 7-7-2026

Printed or Typed Name Brent Froning

My license renewal date is December 31, 2026

Pages or sheets covered by this seal: N.9-N.16, U.1-5

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.

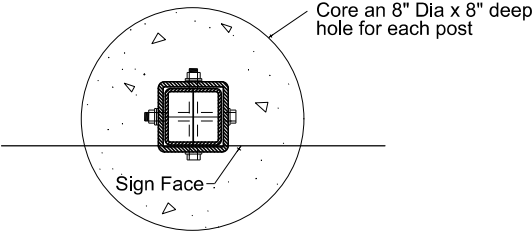
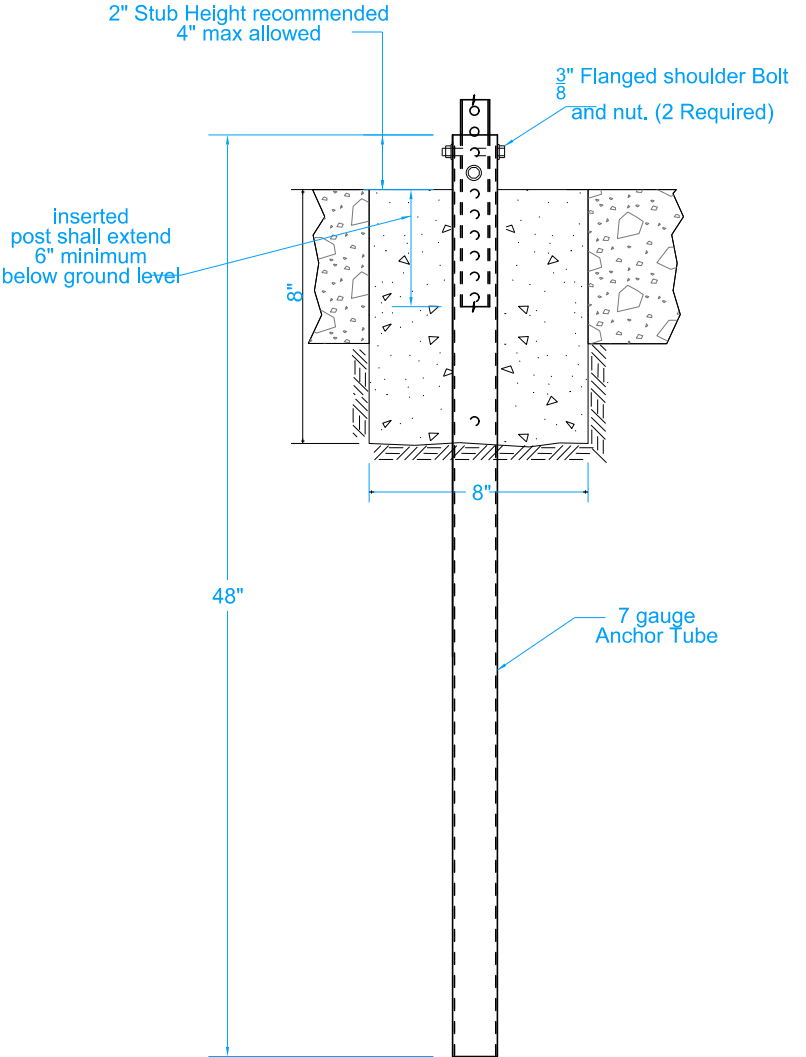
Signature Garret H. Menard Date 7-7-2026

Printed or Typed Name Garret Menard

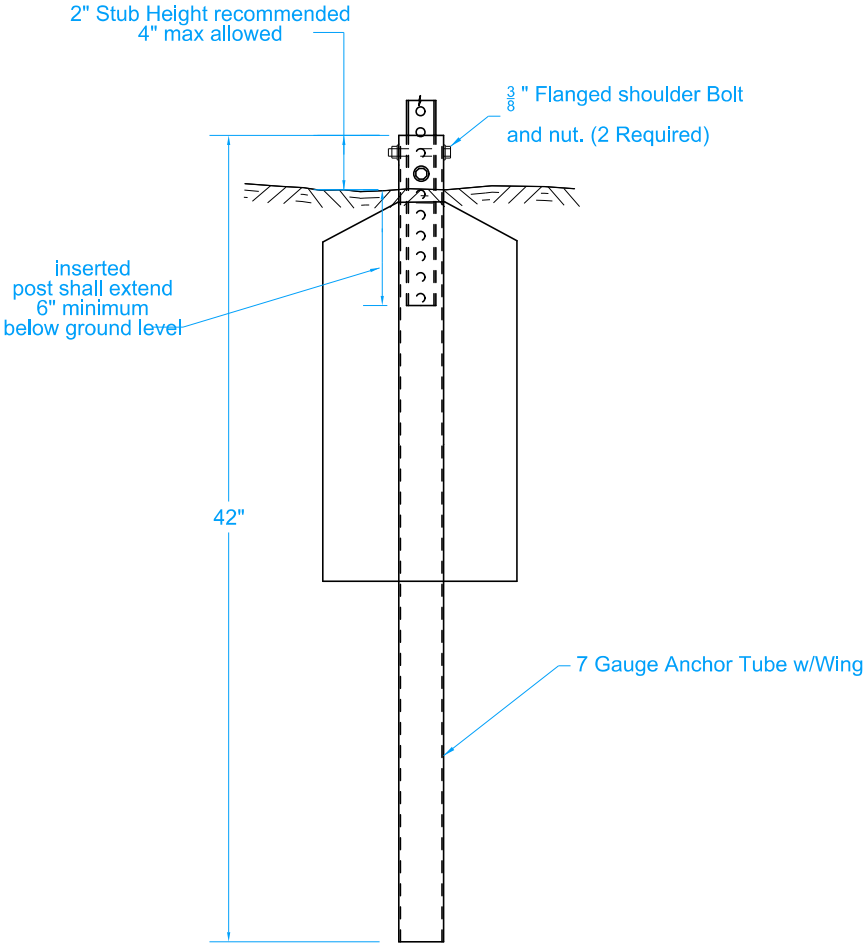
My license renewal date is December 31, 2027

Pages or sheets covered by this seal: A.1, B.1-B.7, C.1-C.10, J.1, N.1-N.8

Sign post shall be installed according to the manufacturer's instructions

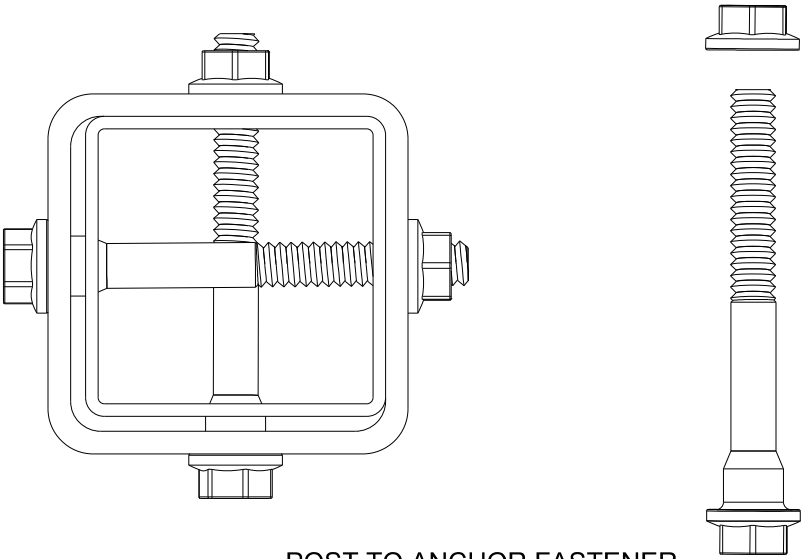


BREAK AWAY CONCRETE INSTALLATION



BREAK AWAY SOIL INSTALLATION

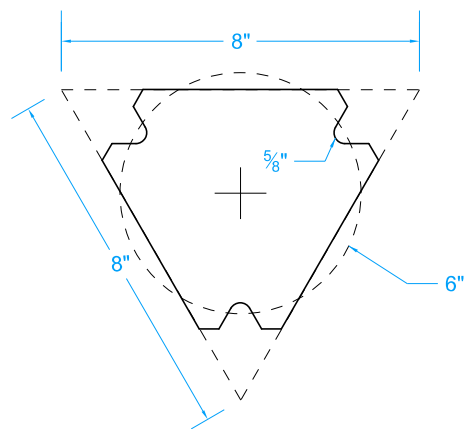
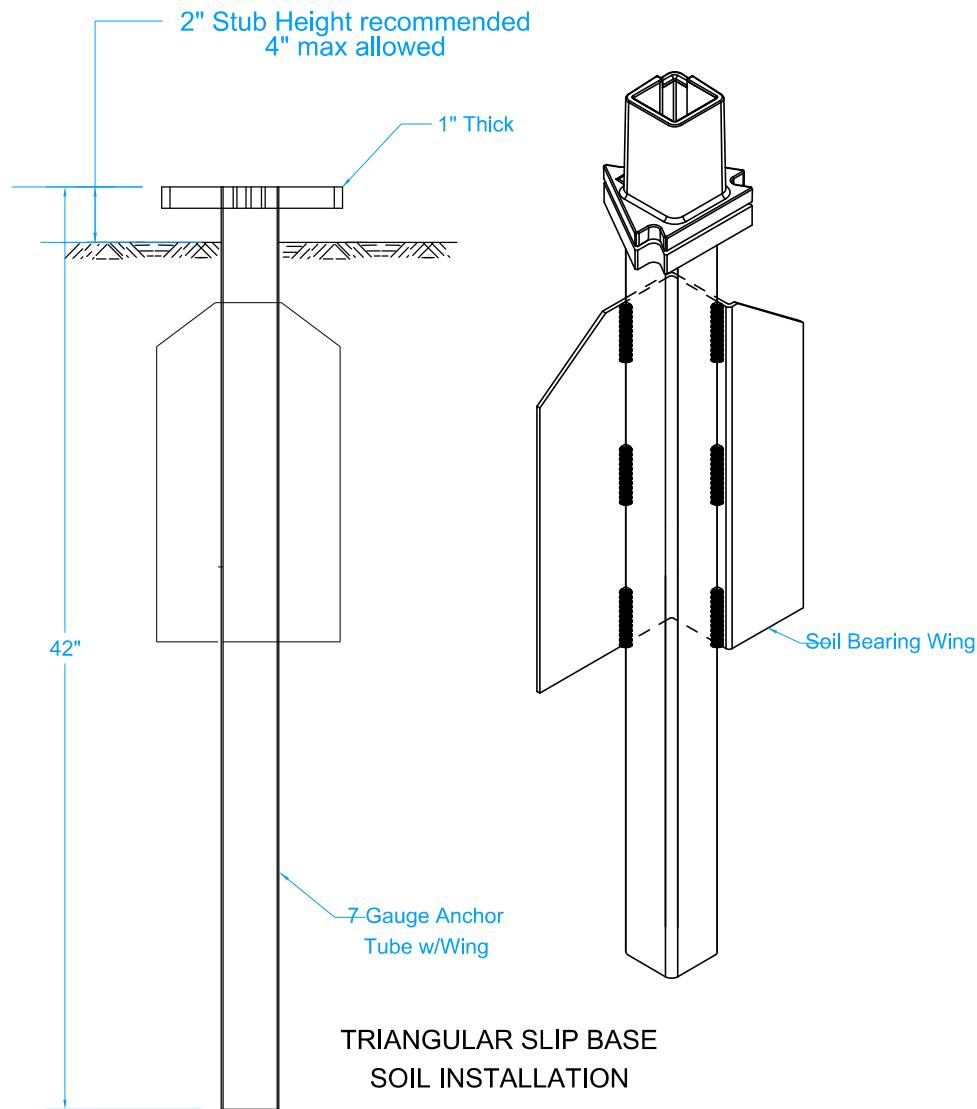
2 EACH 3/8" X 3 1/2" FLANGED SHOULDER BOLT & NUT



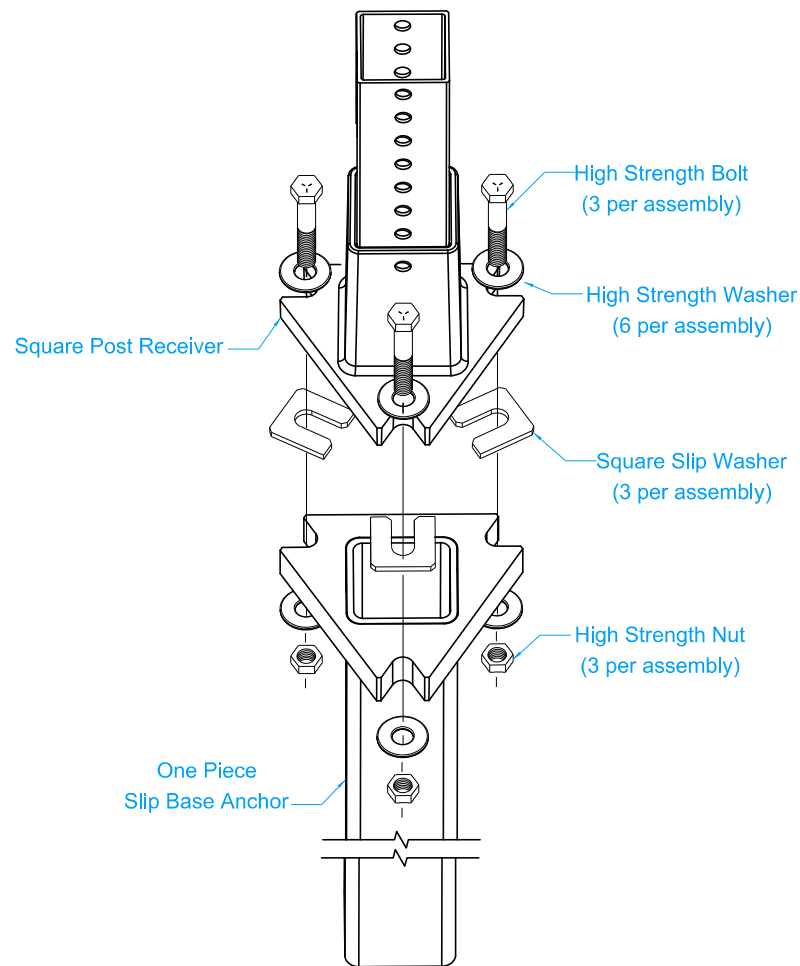
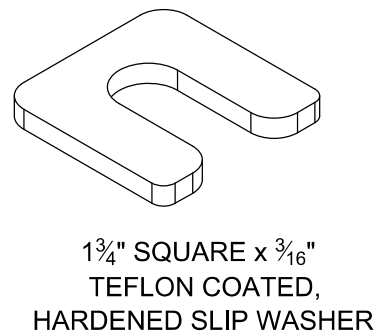
POST TO ANCHOR FASTENER FOR 7 GAUGE ANCHOR TUBE

NOTE: 2" X 2" X 12 gauge perforated post requires 2 1/2" X 2 1/2" X 7 gauge anchor tube.
2 1/2" X 2 1/2" X 12 gauge perforated post requires 3" X 3" X 7 gauge anchor tube.

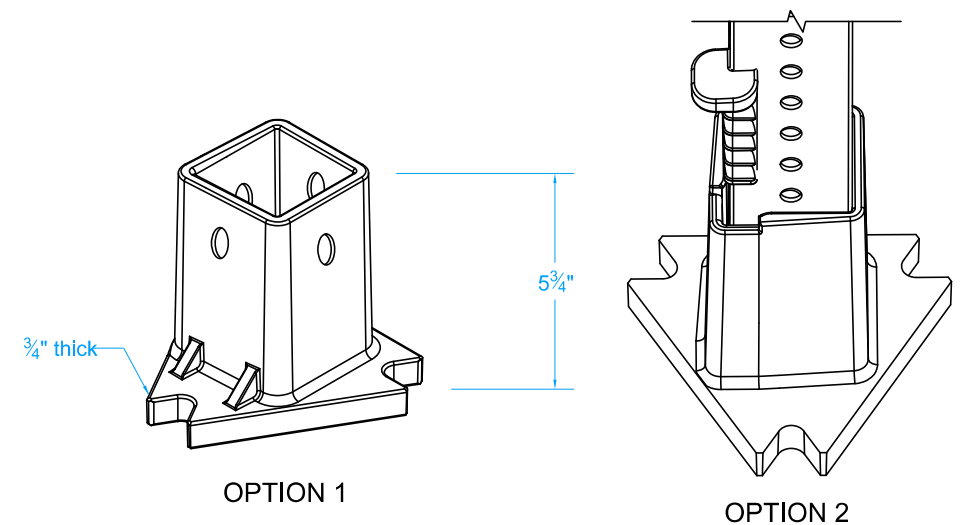
	REVISION		
	-	00-00-00	
			
TAS STANDARD			
REVISION: __			
Perforated Square Steel Tube Anchor and Post			



SLIP PLATE DIMENSIONS

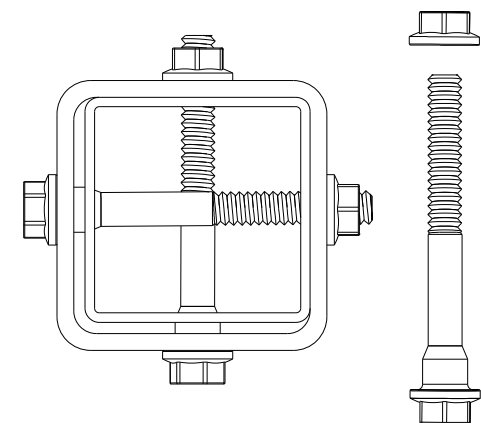


**EXPLODED VIEW
SLIP BASE, RECEIVER AND
CONNECTION HARDWARE**



2 1/2" SQUARE POST RECEIVER OPTIONS

**2 EACH 3/8" X 3 1/2" FLANGED SHOULDER BOLT & NUT
(FOR OPTION 1 RECEIVER CONNECTION)**



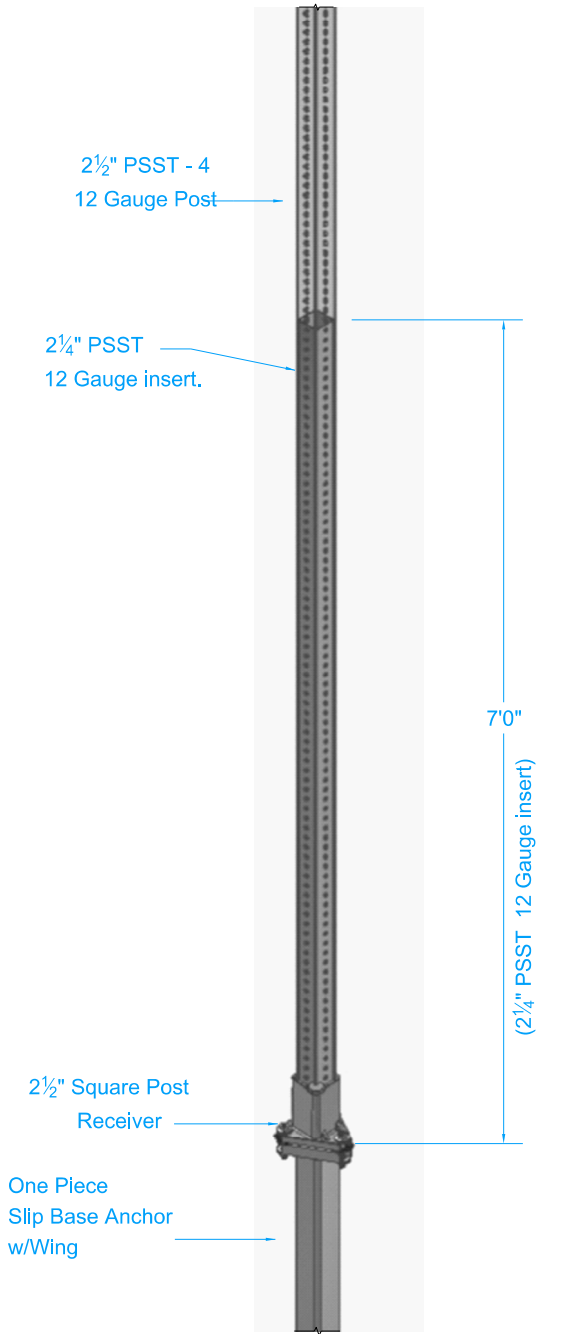
**POST TO ANCHOR FASTENER
FOR 7 GAUGE ANCHOR TUBE**

 IOWA DOT	REVISION	
	-	00-00-00
		
	TAS STANDARD	
REVISION: __		
Perforated Square Steel Tube Anchor and Post		

WINDLOAD COORDINATES AT 90 MPH

Legend:  Post type not used.

SIGN CENTROID	SIGN AREA (SQ-FT) YIELDING DESIGN													
	SOIL OR CONCRETE SOLID WALL ANCHOR			SLIP BASE REQUIRED										
	2" x 12ga perf.		2-1/2" x 12ga perf.	2-1/2" x 12ga perf.		2-1/2" x 10ga perf.			2-1/4" x 12ga inserted into a 2-1/2" x 12ga perf.			2-3/16" x 10ga inserted into a 2-1/2" x 10ga perf.		
	1 Post	2 Post	1 Post	2 Post	3 Post	1 Post	2 Post	3 Post	1 Post	2 Post	3 Post	1 Post	2 Post	3 Post
16.5	6.48	12.96	10.44	20.88	31.32	13.16	26.32	39.48	18.78	37.56	56.34	23.04	46.08	69.12
16	6.68	13.36	10.76	21.52	32.28	13.57	27.14	40.71	19.36	38.72	58.08	23.75	47.5	71.25
15.5	6.9	13.8	11.11	22.22	33.33	14.01	28.02	42.03	19.99	39.98	59.97	24.52	49.04	73.56
15	7.13	14.26	11.48	22.96	34.44	14.48	28.96	43.44	20.65	41.3	61.95	25.34	50.68	76.02
14.5	7.37	14.74	11.87	23.74	35.61	14.98	29.96	44.94	21.36	42.72	64.08	26.22	52.44	78.66
14	7.64	15.28	12.3	24.6	36.9	15.51	31.02	46.53	22.13	44.26	66.39	27.15	54.3	81.45
13.5	7.92	15.84	12.75	25.5	38.25	16.09	32.18	48.27	22.95	45.9	68.85	28.16	56.32	84.48
13	8.22	16.44	13.24	26.48	39.72	16.7	33.4	50.1	23.83	47.66	71.49	29.23	58.46	87.69
12.5	8.55	17.1	13.77	27.54	41.31	17.37	34.74	52.11	24.78	49.56	74.34	30.41	60.82	91.23
12	8.91	17.82	14.35	28.7	43.05	18.1	36.2	54.3	25.82	51.64	77.46	31.68	63.36	95.04
11.5	9.3	18.6	14.97	29.94	44.91	18.88	37.76	56.64	26.94	53.88	80.82	33.05	66.1	99.15
11	9.72	19.44	15.65	31.3	46.95	19.74	39.48	59.22	28.16	56.32	84.48	34.55	69.1	103.65
10.5	10.18	20.36	16.4	32.8	49.2	20.68	41.36	62.04	29.5	59	88.5	36.2	72.4	108.6
10	10.69	21.38	17.22	34.44	51.66	21.72	43.44	65.16	30.98	61.96	92.94	38.01	76.02	114.03
9.5	11.25	22.5	18.12	36.24	54.36	22.86	45.72	68.58	32.61	65.22	97.83	40.01	80.02	120.03
9	11.88	23.76	19.13	38.26	57.39	24.13	48.26	72.39	34.42	68.84	103.26	42.23	84.46	126.69
8.5	12.58	25.16	20.26	40.52	60.78	25.55	51.1	76.65	36.45	72.9	109.35	44.72	89.44	134.16
8	13.36	26.72	21.52	43.04	64.56	27.14	54.28	81.42	38.72	77.44	116.16	47.51	95.02	142.53



* NESTING DETAIL FOR PERFORATED SQUARE STEEL TUBE POST

Post Code	a1	a2	b1	b2	b3	c1	c2	c3	d1	d2	d3	e1	e2	e3
-----------	----	----	----	----	----	----	----	----	----	----	----	----	----	----

* SEE NESTING DETAIL



REVISION

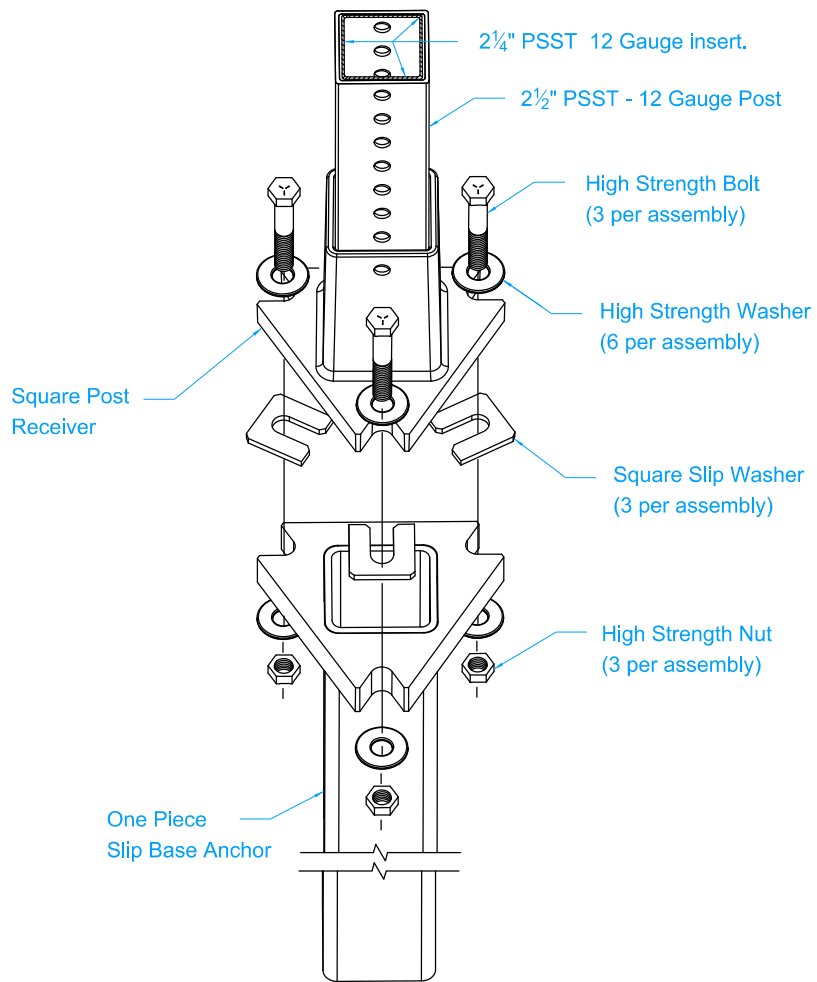
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TAS STANDARD

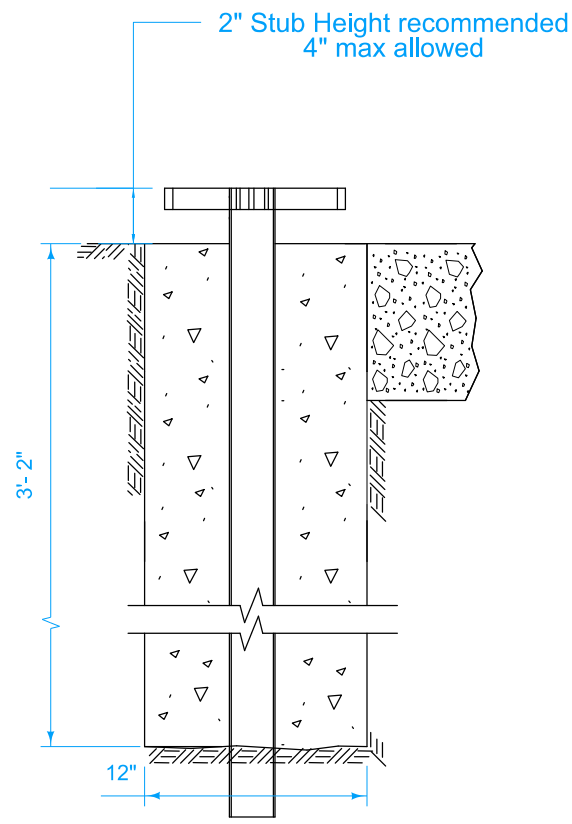
REVISION: __

Perforated Square Steel Tube Anchor and Post

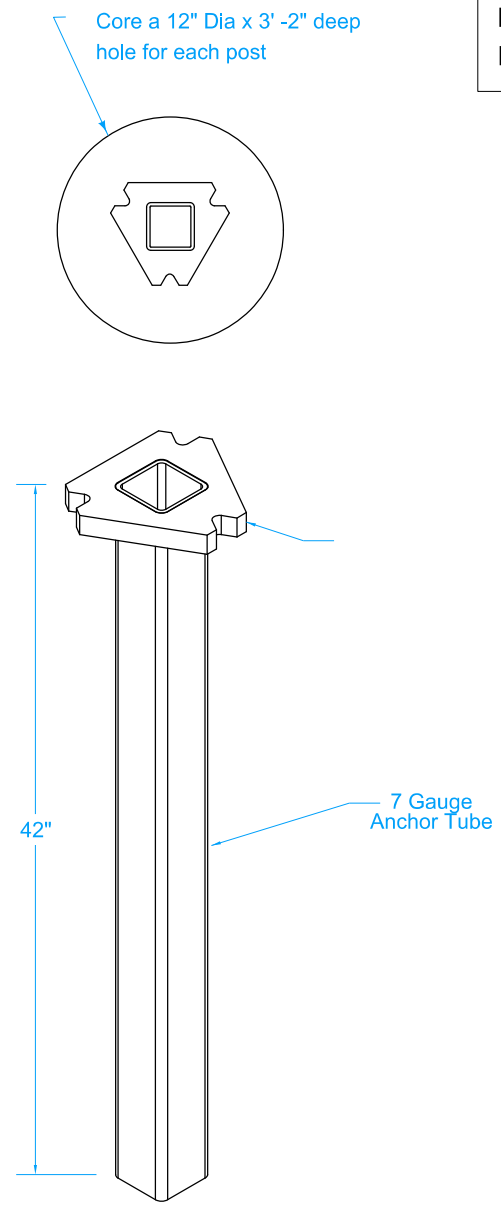
NOTE: FASTENER SIZE AND INSTALLATION
PROCEDURE SHALL BE ACCORDING TO
MANUFACTURER'S RECOMMENDATION.



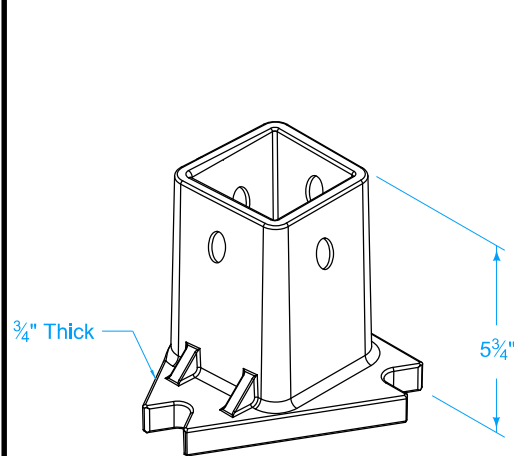
EXPLODED VIEW
SLIP BASE, RECEIVER AND
CONNECTION HARDWARE



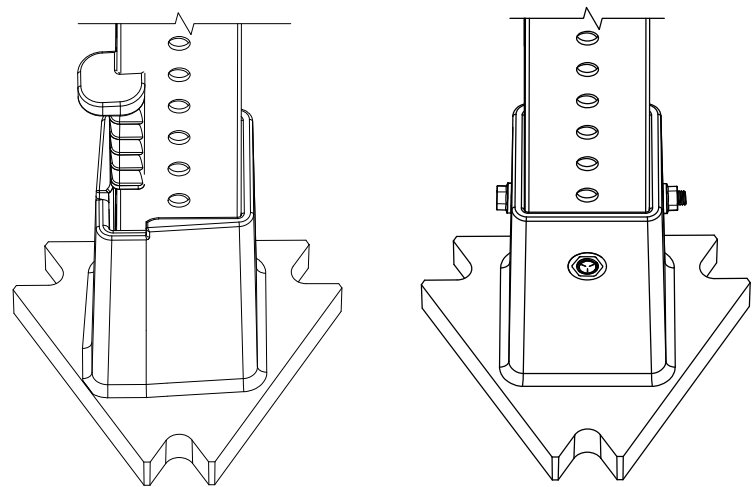
SLIP BASE ANCHOR
FOOTING DETAIL



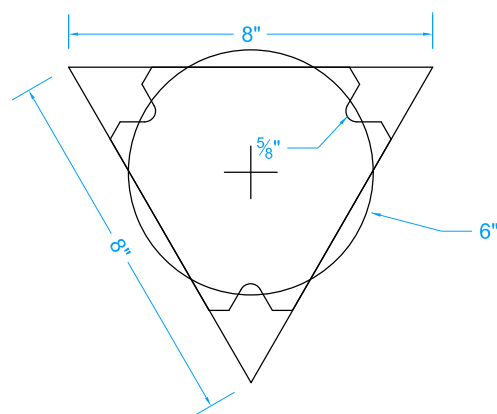
ONE PIECE
SLIP BASE ANCHOR



2-1/2" SQUARE POST
RECEIVER



POST CONNECTION OPTIONS



SLIP PLATE DIMENSIONS

DETAILS OF
PERFORATED SQUARE STEEL TUBE POST TRIANGULAR SLIP BASE

	REVISION	
	-	00-00-00
		
	TAS STANDARD	
REVISION: __		
Perforated Square Steel Tube Anchor and Post		

2½" PSST - 12 Gauge Post

2¼" PSST 12 Gauge Insert

Sign Face

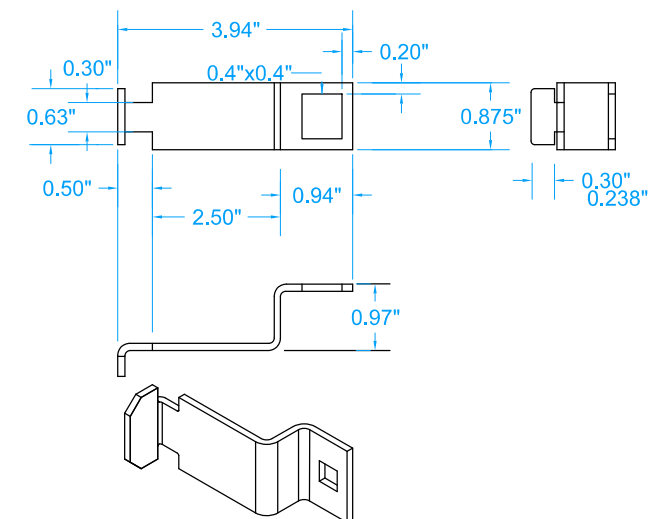
Post Clamps

Post

Rib

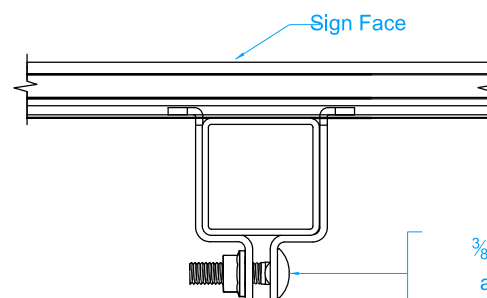
DETAIL A

Install post clamps at top and bottom of the sign,
and at each joint for each post.



POST CLAMP DETAIL

Post clamp shall be stainless.



PLAN VIEW

DETAILS OF
PERFORATED SQUARE STEEL TUBE POST
TYPE "B" SIGN ATTACHMENT

SLIP BASE WITH INSERTED PERFORATED SQUARE STEEL TUBE POST

2½" SQUARE POST
RECEIVER

ONE PIECE
SLIP BASE ANCHOR

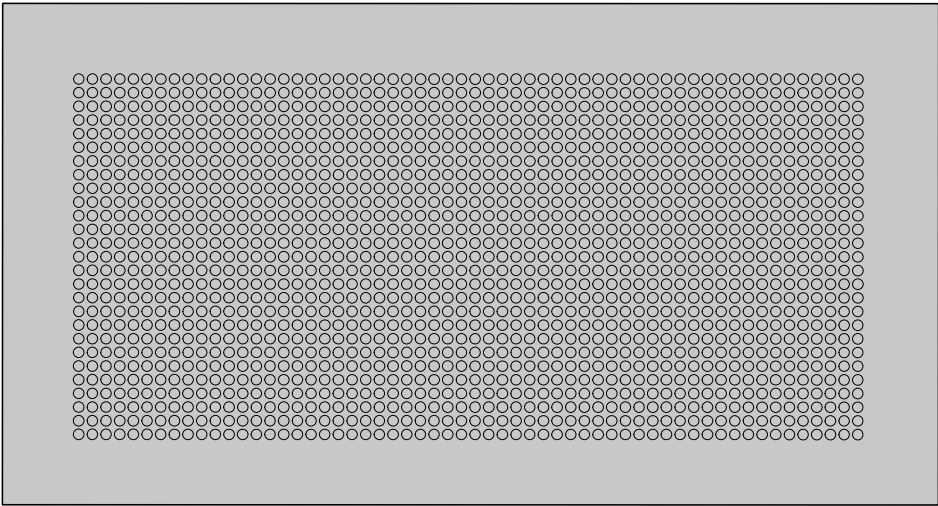
 IOWA DOT	REVISION	
	-	00-00-00
		
	TAS STANDARD	
REVISION: __		
Perforated Square Steel Tube Anchor and Post		

DIMENSIONAL INFORMATION

Manufacturer: Daktronics
Model Number: VF-2420-96x208-20-RGB
Type: Full Matrix
Pixels: 208 x 96 (width x height)

Height: 7' 10"
Width: 14' 7"
Depth: 1' 4"

Weight: approx. 1240 lbs.



DELIVERY REQUIREMENTS

Contractor to coordinate with Daktronics within 14 days of awarded contract to coordinate the delivery and unloading.

Contractor responsible to secure the DMS when shipped to the project or the contractor's storage yard.

TRANSPORTATION REQUIREMENTS

All material and equipment necessary to transport the sign and post to or from the storage site and/or installation site shall be furnished by the Contractor.

The sign shall be transported in the upright position. At no point in time shall the sign be laid on its side, front, or back.

To avoid damage to the sign during transport, consult the sign manufacturer to determine the correct method to secure the sign to the trailer.

Any damage incurred during transportation shall be the responsibility of the Contractor.

STORAGE REQUIREMENTS

All material and equipment necessary to store the sign and post at the designated site shall be furnished by the Contractor.

The sign shall be stored upright and level. At no point in time shall the sign be laid on its side, front, or back.

The sign must be blocked up at least three inches from the ground. When the sign is not stored on concrete, extra blocking shall be used to provide for settlement.

Remove shipping support legs from the DMS after installation on the support structure.

During transportation and storage, the DMS shall be secured at all times to prevent tipping. The DMS shall be secured with dead man anchors or other suitable methods. The DMS shall not be marred by the selected method. Tipping may be caused by any number of reasons, but high winds and other weather related events are the primary concern while the DMS is on the ground.

Any damage resulting from the failure to properly secure the DMS and post shall be the responsibility of the Contractor.

ATTACHMENT HARDWARE

All materials necessary to attach the DMS to the support structure will be furnished by the Contractor.

Dry fit the DMS to the sign truss to determine the actual attachment bracket locations. Adjust the brackets to avoid conflicts between the U Bolts and the internal members of the sign truss. Drill the bolt holes in the Z bracket on the back of the DMS after conflicts are resolved.

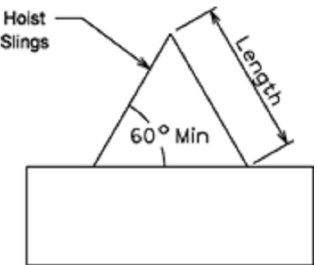
LIFTING REQUIREMENTS

The following procedures should be followed when lifting the sign for either removal or installation, including lifting the sign from the storage site to the trailer or the reverse, and from the trailer to the support structure or the reverse.

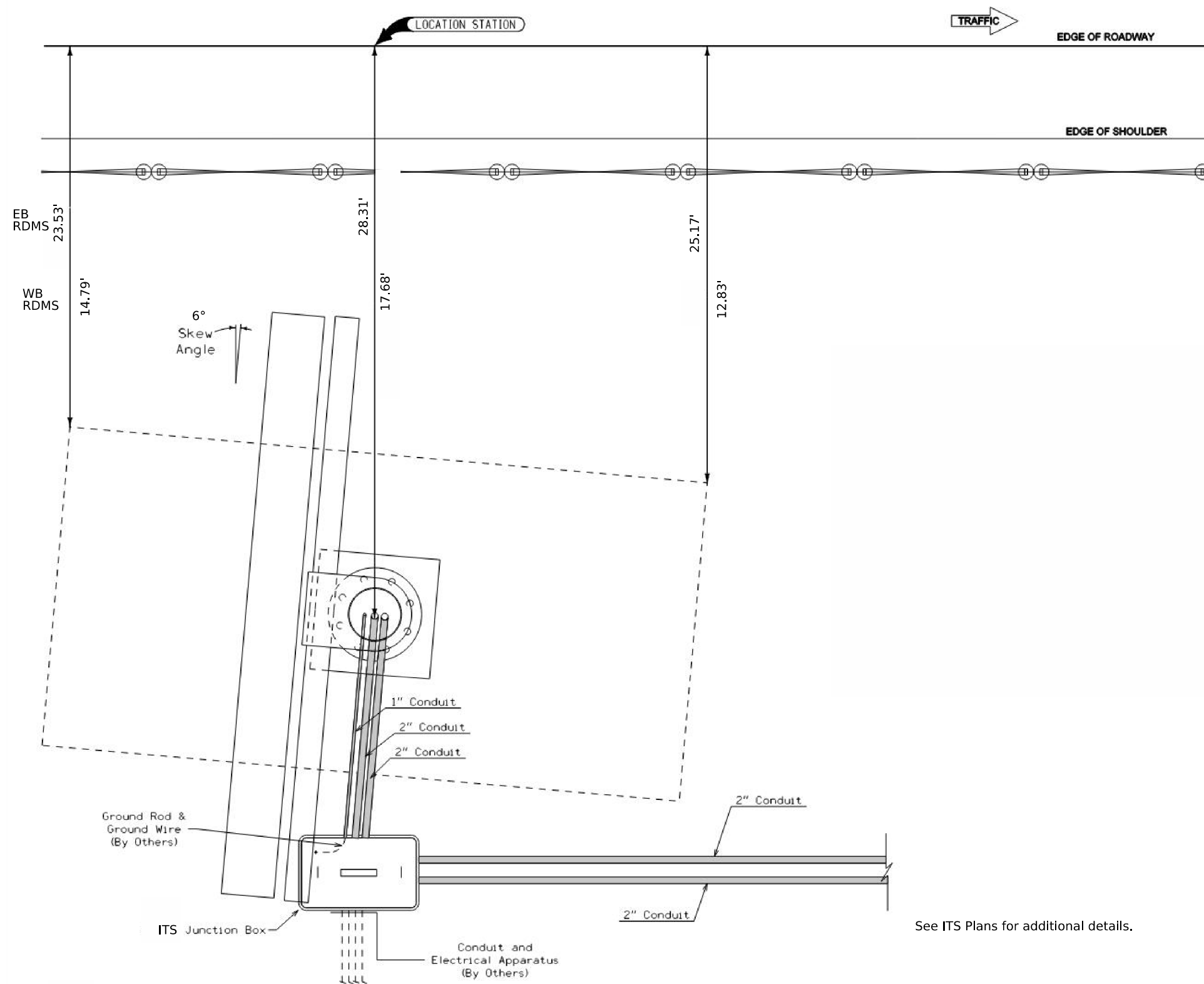
The crane and lifting bar shall be rated to lift a minimum of 2000 pounds.

Any damage incurred during lifting shall be the responsibility of the Contractor.

Consult the manufacturer for complete lifting requirements.



ROADSIDE
DYNAMIC MESSAGE SIGN
TYPICAL DIMENSIONS
AND CARE AND HANDLING REQUIREMENTS



PLAN VIEW

SITE INSTALLATION
DETAILS FOR ROADSIDE
DYNAMIC MESSAGE SIGN

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Traffic Sign Items : Traffic Sign Items
ITS Items :

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Traffic Sign Items	ITS Items	Total	
1	2402-2720000	EXCAVATION, CLASS 20	CY	157		157	Refer to Tabulation 190-52 for locations and details.
2	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS)	CY	23		23	
3	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	2,240		2,240	
4	2423-0001001	ROADSIDE DYNAMIC MESSAGE SIGN (D.M.S.), INSTALL	EACH	2		2	Refer to Tabulation 190-52 and Roadside Dynamic Signs (RDMS) support standard drawings for more information. Work shall consist of furnishing all labor, equipment, and materials to construct and install RDMS, generally including, but not limited to: - 27' sign support post, attachment brackets and hardware - Attachment of the RDMS to the steel posts, including mast arms, work platform, and work platform support brackets. - Installation of the conduit between the steel posts and the ITS Handhole. The following items will be provided by the DOT or the RDMS vendor: RDMS - Coordinate with Daktronics for the delivery and unloading of the RDMS. Coordination must start within 14 days of an awarded contract. Method of Measurement: By count. Basis of Payment: The Contractor shall be paid the contract unit price for each RDMS installed. This payment shall be considered full compensation for furnishing all material, equipment (except as noted above) and labor, and for the performance of all work necessary, including transport of all provided materials from their present location, to provide RDMS installation.
5	2518-0000010	ITS CONSTRUCTION SURVEY	LS		1	1	REFER TO THE DEVELOPMENTAL SPECIFICATIONS FOR INTELLIGENT TRANSPORTATION SYSTEMS.
6	2518-0000045	ITS CABINET FOUNDATION	EACH		2	2	
7	2518-0000055	ITS DEVICE CABINET, INSTALL ONLY	EACH		2	2	REFER TO THE DEVELOPMENTAL SPECIFICATIONS FOR INTELLIGENT TRANSPORTATION SYSTEMS. THIS WORK WILL ALSO INCLUDE THE PICKING UP AND TRANSPORTING OF PROVIDED MATERIAL FROM THE DOT MAINTENANCE GARAGE AT 2310 SE 17TH ST. GRIMES, IA 50111 (515-986-5465).
8	2518-0000080	ITS HANDHOLE, 30x17x24	EACH		3	3	REFER TO THE DEVELOPMENTAL SPECIFICATIONS FOR INTELLIGENT TRANSPORTATION SYSTEMS.
9	2518-0000090	ITS HANDHOLE, 36x24x36	EACH		3	3	
10	2518-0000120	ITS FIBER MARKER	EACH		3	3	
11	2518-0000150	ITS GROUND ROD	EACH		2	2	

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Traffic Sign Items	ITS Items	Total	
12	2518-0001200	ITS CONDUIT, HDPE, 2 INCH BORED	LF		655	655	PARALLEL COMMUNICATIONS AND POWER RUNS MAY BE INSTALLED IN THE SAME BORE. REFER TO THE DEVELOPMENTAL SPECIFICATIONS FOR INTELLIGENT TRANSPORTATION SYSTEMS. REFER TO THE DEVELOPMENTAL SPECIFICATIONS FOR INTELLIGENT TRANSPORTATION SYSTEMS.
13	2518-0002200	ITS CONDUIT, HDPE, 2 INCH PLOWED	LF		1,600	1,600	
14	2518-0006001	XHHW COPPER WIRE, NO. 1 AWG	LF		1,090	1,090	
15	2518-0006002	XHHW COPPER WIRE, NO. 2 AWG	LF		1,815	1,815	
16	2518-0006004	XHHW COPPER WIRE, NO. 4 AWG	LF		605	605	
17	2518-0006006	XHHW COPPER WIRE, NO. 6 AWG	LF		30	30	
18	2518-0006010	XHHW COPPER WIRE, NO. 10 AWG	LF		120	120	
19	2518-0006015	ITS TRACER WIRE	LF		3,860	3,860	
20	2518-0007024	FIBER OPTIC CABLE, 24 SM DIELECTRIC	LF		4,710	4,710	
21	2518-0008355	CONNECTOR ADAPTOR PANEL, SIX DUPLEX SC	EACH		4	4	
22	2518-0008360	SINGLE PANEL HOUSING	EACH		4	4	
23	2518-0008365	UPC/SC FACTORY TERMINATED FIBER CONNECTOR AND PIGTAILS	EACH		48	48	
24	2518-0008375	EXISTING FIBER OPTIC SPLICE CLOSURE WORK	EACH		1	1	
25	2518-0008390	FIBER OPTIC SPLICE TRAY, 72	EACH		1	1	
26	2518-0008395	FIBER OPTIC SPLICE	EACH		12	12	
27	2518-0008400	FIBER OPTIC CABLE ACCEPTANCE TESTING	LS		1	1	

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Traffic Sign Items	ITS Items	Total	
28	2524-6765010	REMOVE AND REINSTALL SIGN AS PER PLAN	EACH	6		6	Refer to Tabulations 190-50 and 190-62. The Contractor shall remove each sign and the hardware used to secure the sign to another sign, posts, or sign support structure. For signs mounted directly to posts, removal of the sign shall include removal of the posts. Posts may be either wood posts or steel breakaway sign posts. The removal of concrete footings for steel breakaway sign posts will be measured and paid for separately. Holes remaining from the removal of wood posts shall be backfilled with suitable earth to the original level or to the natural ground surface in accordance with Article 2402.09 of the Standard Specifications. All steel posts removed shall become the property of the Contractor. Unless otherwise noted, wood posts removed shall remain the property of DOT. The Contractor shall deliver the wood posts to a DOT storage area within 50 miles, as designated by the Engineer. **The existing sign shall be removed and stored. The Contractor shall remove the sign and transport it to a DOT storage area within 50 miles, as designated by the Engineer. The Contractor shall transport the sign back to the job site when ready for reinstallation. The Contractor shall furnish all necessary hardware to install the signs. When the new installation is similar to the original installation, unless otherwise noted, the existing hardware may be used to reinstall the sign. Signs damaged by the Contractor's activities shall be replaced at the Contractor's expense. Replacement materials shall be new. The DOT will furnish all details necessary for fabrication of the replacement materials. METHOD OF MEASUREMENT: The Engineer will count each sign removed and reinstalled. BASIS OF PAYMENT: For each sign removed and reinstalled, the Contractor shall be paid the contract unit price.
29	2524-6765210	REMOVAL OF TYPE A SIGN ASSEMBLY	EACH	12		12	Refer to Tabulation 190-62 for location and details. This item for the removal of Type A Sign Assemblies, including the sign panels, sign brackets, supporting structures and hardware. Contractor shall carefully dismantle each sign assembly. Sign posts, brackets and hardware shall become property of the Contractor. Sign panels shall become property of the DOT and shall be delivered to the nearest DOT maintenance facility. All holes resulting from removal of post shall be filled level with the adjacent grade with backfill material conforming to the Standard Specifications. Measurement: The Engineer will count the number of sign assemblies removed. Payment: The Contractor will be paid the contract unit price for each sign assembly removed.
30	2524-9081275	CONCRETE FOOTING FOR BREAKAWAY SIGN POST, 2'-8" DIA. X 7'-6"	EACH	4		4	Refer to Tabulation(s) 190-50 (and 190-51) for details.

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Traffic Sign Items	ITS Items	Total	
31	2524-9081290	CONCRETE FOOTING FOR BREAKAWAY SIGN POST, 2'-8" DIA. X 9'-0"	EACH	8		8	
32	2524-9276010	PERFORATED SQUARE STEEL TUBE POSTS	LF	1,020		1,020	Refer to Tabulation(s) 190-50 and/or 190-51 for locations and details.
33	2524-9276027	PERFORATED SQUARE STEEL TUBE POST ANCHOR, TRIANGULAR SLIP BASE ASSEMBLY	EACH	74		74	
34	2524-9281210	STEEL BREAKAWAY SIGN POSTS FOR TYPE A OR B SIGNS, W 8 X 21	LF	48		48	Refer to Tabulation 190-50 for locations and details.
35	2524-9281426	STEEL BREAKAWAY SIGN POSTS FOR TYPE A OR B SIGNS, W 12 X 26	LF	96		96	
36	2524-9325001	TYPE A SIGNS, SHEET ALUMINUM	SF	817.3		817.3	Refer to Tabulation 190-51 and 190-66 for locations and details.
37	2524-9380001	TYPE B SIGNS, EXTRUDED ALUMINUM STRUCTURAL PANEL	SF	676.5		676.5	Refer to Tabulation 190-50 for locations and details.
38	2528-8445110	TRAFFIC CONTROL	LS	1		1	
39	2533-4980005	MOBILIZATION	LS	1		1	- -
40	2599-9999005	('EACH' ITEM) ANCHOR BOLT ASSEMBLY - INSTALL AND SURVERY	EACH	2		2	Refer to Tabulation 190-52 for locations and details. For accurately installing and surveying anchor bolt assemblies. Measurement: The Engineer shall count Each Anchor Bolt Assembly installed and surveyed. Payment: The Contractor shall be paid the contract unit price for each Anchor Bolt Assembly Installed and Surveyed.
41	2599-9999005	('EACH' ITEM) COVER TYPE A SIGN	EACH	4		4	Refer to Tabulation "Sign Overlays and Covers" and "N" sheets for locations and details. Measurement: The Engineer will count each sign being covered. Basis of Payment: For each Type A sign covered, the Contractor shall be paid the contract until price. Uncovering the sign shall be incidental.

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Traffic Sign Items	ITS Items	Total	
42	2599-9999005	('EACH' ITEM) SERVICE DISCONNECT	EACH		2	2	DESCRIPTION Furnish and install a heavy-duty, non-fusible safety switch and accessories for electrical service disconnect as shown in the plans and specified herein. MATERIALS GENERAL Provide service disconnects that meet the following: 1. UL listed and labeled in accordance with UL 98. 2. Suitable for service entrance use. 3. Rated for 600 VAC. 4. Complying with NEC 230.62(C). HEAVY-DUTY, NON-FUSIBLE SAFETY SWITCH 1. Heavy-duty, non-fusible, single-throw. 2. Two-pole. 3. NEMA 3R enclosure. 4. Painted galvanized steel. 5. Quick-make, quick-break toggle mechanism. Visible double-break blade construction. 6. Mechanically interlocked cover preventing opening in energized position. 7. External lockable handle with visible ON/OFF indication. 8. Arc chutes for suppression of switching arcs. 9. 200 Amp switch. 10. UL listed neutral and ground lug kits compatible with switch rating. CONSTRUCTION 1. Service disconnect shall be installed on Unistrut assembly adjacent to DMS footing. 2. Service disconnect shall be installed in accordance with manufacturer's recommendations. 3. Service disconnect shall be plumb and securely fastened. 4. Provide weather-tight fittings and hubs compatible with 3R enclosures. 5. Maintain required working clearances per NEC. 6. Provide permanent labeling indicating equipment served. Labels shall be weather-resistant and legible. 7. Perform all testing per Section 2523.03.U METHOD OF MEASUREMENT Measurement will be by count. BASIS OF PAYMENT Payment for Service Disconnect will be the contract unit price for each service disconnect installed. This payment shall be considered full compensation for furnishing all labor, equipment, and materials required to properly supply and install the service disconnect, as specified.

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Traffic Sign Items	ITS Items	Total	
43	2599-9999008	('POUNDS' ITEM) ANCHOR BOLT ASSEMBLY - FURNISHED	LB	842		842	Refer to Tabulation 190-52 for locations and details. For furnishing anchor bolt assemblies. Measurement: The Engineer shall count Each Anchor Bolt Assembly furnished. Payment: The Contractor shall be paid the contract unit price for each Anchor Bolt Assembly Furnished.
44	2599-9999009	('LINEAR FEET' ITEM) XHHW COPPER WIRE, NO. 2/0 AWG	LF		3,270	3,270	REFER TO THE DEVELOPMENTAL SPECIFICATIONS FOR INTELLIGENT TRANSPORTATION SYSTEMS FOR SIMILAR ITEMS.

105-4 10-18-11												190-01 10-15-13																															
STANDARD ROAD PLANS																								SIGN SUPPORT STRUCTURES																			
The following Standard Road Plans apply to construction work on this project.																								The following Bridge Standards apply to construction work on this project.																			
SI-101	04-19-16	Locations - Type 'A' Signs																						RDMS-01-13	12-2021	Index and Notes																	
SI-102	04-19-16	Locations - Type 'B' Signs																						RDMS-02-13	03-2019	Support Frame Details																	
SI-119	10-17-17	Support Structures - Mounting Brackets																						RDMS-03-13	03-2019	Work Platform Details																	
SI-121	10-16-18	Fabrication - Sign Legend Components																						RDMS-04-13	04-2020	Support Post Base Details																	
SI-123	10-20-20	Fabrication - Type 'B' Signs																						RDMS-05-13	03-2019	Foundation Details																	
SI-131	10-18-16	Installation - Type 'A' Signs																						RDMS-06-13	03-2019	3D PDF Rotational View																	
SI-132	04-17-18	Installation - Type 'B' Signs																																									
SI-133	10-17-17	Installation - Type "A" Sign Shim																																									
SI-171	04-18-17	Reference Location Sign Posts																																									
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-416	10-15-19	Partial Lane Closure on Ramps																																									
TC-417	04-21-20	Ramp Closure																																									
TC-418	04-18-23	Lane Closure on Divided Highway																																									
TC-420	10-16-18	Lane Closure at Ramps																																									
TC-422	04-18-23	Closure of Two Adjacent Lanes on Divided Highway																																									
TC-451	04-18-23	Temporary Road Closure on Divided Highway																																									
TC-454	04-18-23	Temporary Detour Using Ramps on Divided Highway																																									
																								105-4 10-18-11																			
STANDARD ROAD AND ITS PLANS																																											
The following Standard Road and ITS Plans apply to construction work on this project.																																											
Number		Date		Title																																							
ITS-101		10-21-25		ITS Handholes																																							
ITS-102		10-21-25		ITS Labelling																																							
ITS-302		10-21-25		ITS Cabinet Layout																																							
ITS-303		10-21-25		ITS Cabinet Foundation																																							
190-50 10-15-13																																											
MATERIALS FOR TYPE 'B' SIGNS																																											
NUMBER	SIGN NUMBER					DIR OF TRAVEL	SIGN LOCATION	FAB INFO	SIGN WIDTH	SIGN HEIGHT	NEW AREA	MASSH-400 POST			PERFORATED SQUARE STEEL TUBE						STEEL BREAKAWAY POSTS							INSTALLATION			SEE SIGNING NOTES	REMARKS											
	ROUTE	COUNTY	EXIT NUMBER	Road ID M,R,S	SEQ. NO.							L	M	R	W8x21			FOOTING			W12x26				FOOTING	TYPE	DIM 'X'	DIM 'Y'															
															FT	FT	FT	FT	FT	FT	FT	CONC	SOIL	SLIP					FT	FT			FT	2'8" x 7'6"	FT	FT	FT	FT	2'8" x 9'	FT	FT		
	6	77	125	S	1	E	647+00	NEW	7.0	6.0	42.0										11.0		13.0	2						1	6	7											
	6	77	125	S	2	E	672+53	NEW	13.0	10.5	136.5																		3	6	7												
	6	77	125	S	3	W	674+79	NEW	9.5	11.0	104.5																	2	3	6	7												
	6	77	125	S	4	E	675+75	NEW	8.5	6.5	55.3																		4				on bridge										
	6	77	125	S	5	W	677+54	NEW	8.5	6.5	55.3																		4				on bridge										
	6	77	125	S	6	E	678+87	NEW	9.5	11.0	104.5																		3	6	7												
	6	77	125	S	7	W	681+17	NEW	13.0	10.5	136.5																		3	6	7												
	6	77	125	S	8	W	706+37	NEW	7.0	6.0	42.0										11.0		13.0	2					1	6	7												
190-52 04-18-17																																											
MATERIALS FOR OVERHEAD SIGN SUPPORT STRUCTURES																																											
LOCATION				SPAN LENGTH	STRUCTURE DESIGNATION	SIGN TRUSS STANDARD SERIES	INSIDE FOUNDATION OFFSET	OUTSIDE FOUNDATION OFFSET	ADDITIONAL STEM HEIGHT 'L'		FOUNDATION QUANTITIES																																
ROADWAY	REFERENCE LOCATION SIGN		STATION								DIRECTION OF TRAVEL	EXCAVATION (CLASS 20)	REINFORCING EPOXY-COATED STEEL	REINFORCING UNCOATED STEEL	STRUCTURAL CONCRETE	42" DIA. DRILLED SHAFT	ANCHOR BOLT ASSEMBLIES																										
																	NUMBER EACH	TOTAL LB																									
US 6	RDMS 27'		666+00	EB	-	Roadside DMS and Foundation	RDMS	-	92.3	-	-	88.5	1120.0	-	11.5	-	1	421.0																									
US 6	RDMS 27'		689+25	WB	-	Roadside DMS and Foundation	RDMS	-	64.7	-	-	67.1	1120.0	-	11.5	-	1	421.0																									
FILE NO.																			ENGLISH		DESIGN TEAM Iowa DOT\HDR			POLK COUNTY		PROJECT NUMBER IM-080-3(275)125--13-77		SHEET NUMBER C.7															

110-13 04-20-10					
STATE SUPPLIED MATERIALS					
Item Description	Quantity	Units	Garage Location	Contact Name & Number	Remarks
ITS DEVICE CABINET - GROUND MOUNT	2	EACH	2310 SE 17TH ST GRIMES, IA 50111	515-986-5465	
DMS	2	EACH			Coordinate with Daktronics

190-62 10-15-13							
SIGN OVERLAYS AND COVERS							
SIGN NUMBER OR DESCRIPTION	LOCATION STATION	DIRECTION OF TRAVEL	STAGE OF TRAFFIC — —	MODIFICATION		OVERLAY (SF)	REMARKS
				REMOVE	INSTALL		
				0	0		
R3-5L	4416+00	NB	STAGE 2				Cover Sign
R3-6mod	4416+00	NB	STAGE 2				Cover Sign
R3-5L	3423+00	SB	STAGE 2				Cover Sign
R3-6mod	3423+00	SB	STAGE 2				Cover Sign

190-62
10-15-13

EXISTING SIGNS TO BE REMOVED										
SIGN NUMBER OR DESCRIPTION	LOCATION STATION	DIRECTION OF TRAVEL	TYPE 'A' SIGN ASSEMBLY	TYPE 'B' SIGN ASSEMBLY	REMOVE & REINSTALL EXISTING SIGNS		CONCRETE FOUNDATION	SUPPORT STRUCTURE & FOUNDATION	APPLICABLE SIGNING NOTES	REMARKS
			(RA)	(RB)	TYPE 'A'	TYPE 'B'				
			EACH	EACH	(RR)	(RR)				
Ramps										
R3-6mod	4416+00	NB	1						RA	On Mast Arm
R3-6mod	3423+00	SB	1						RA	On Mast Arm
R5-1	3420+00	NB	1						RA	
R5-1	3420+00	NB	1						RA	
R5-1	4419+00	SB	1						RA	
R5-1	4419+00	SB	1						RA	
Hickman										
35/80 Shield Assembly	681+31	WB	1						RA	
35/80 Shield Assembly	686+35	WB	1						RA	
Living History Farm	688+00	EB				1.0			RR	
35/80 JCT Assembly	688+05	WB	1						RA	
US 6 Assembly	689+76	WB	1						RA	
Litter Assembly	690+22	EB			1				RR	
DART Bus Stop Assembly	692+05	WB			1				RR	
DART Bus Stop Assembly	692+60	EB			1				RR	
R5-1	692+51	WB	1						RA	
Living History Farm	695+45	WB				1.0			RR	
11th St										
Stop Sign Assembly	691+06	NB			1				RR	
R3-9B Assembly	691+08	SB	1						RA	

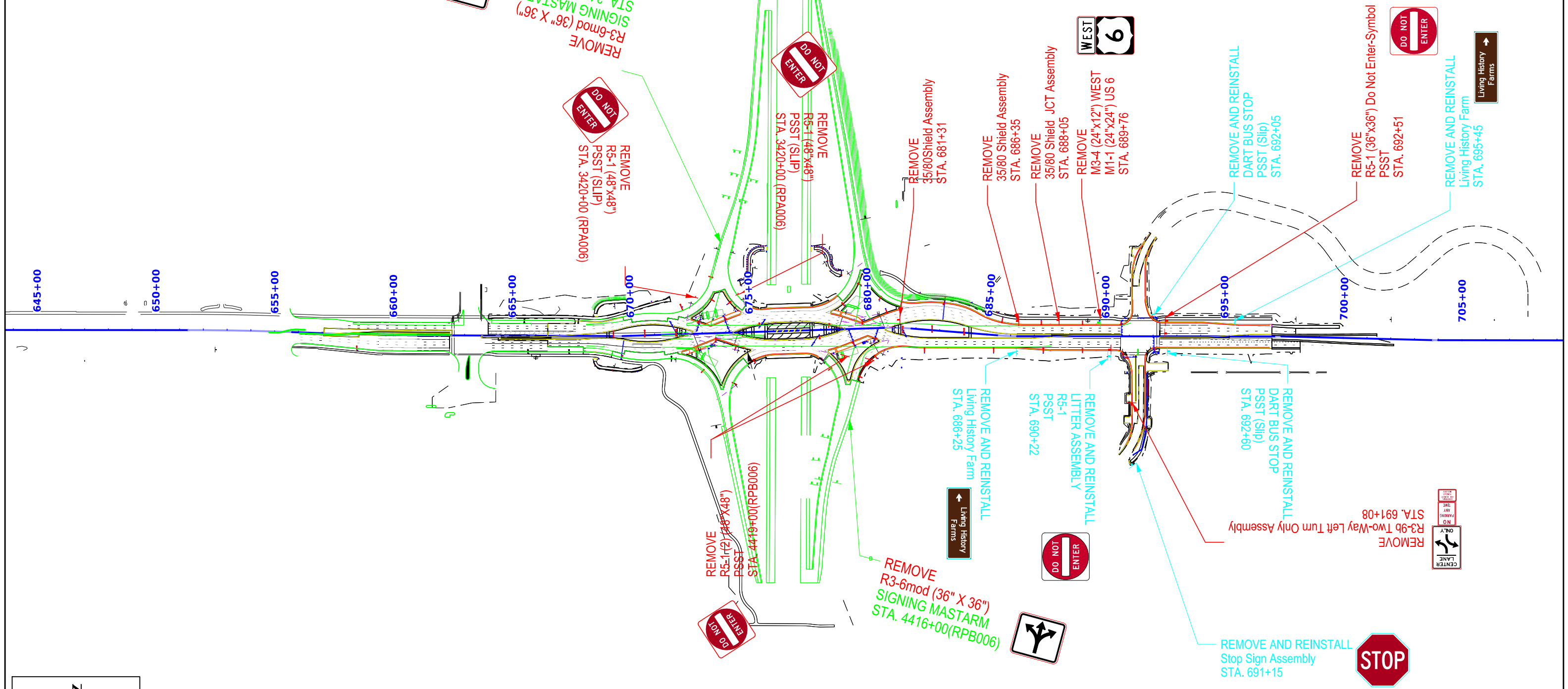
190-66 10-21-14			
SUMMARY OF TYPE 'A' SIGNS			
Sign Number	Quantity	Size	Total Sign Area
	EACH	IN	SF
OM1-2	7	18 X 18	15.8
R1-2	4	36 X 36	36.0
R10-6	2	24 X 36	12.0
R10-6R	2	24 X 36	12.0
R2-1	6	30 X 36	45.0
R3-6mod	2	36 X 36	18.0
R4-7	3	24 x 30	15.0
R4-7B	2	36 X 48	24.0
R4-8B	2	36 X 48	24.0
R5-1	19	48 X 48	304.0
R5-1A	6	42 X 30	52.5
R5-1A	10	48 X 36	120.0
SLOW Plaque	4	18 X 12	6.0
W1-2L	2	18 X 18	4.5
W1-2R	2	18 X 18	4.5
W3-5	2	36 X 36	18.0
W4-2L	2	36 X 36	18.0
W4-2R	2	48 X 48	32.0
W9-1L	2	36 X 36	18.0
W12-1	2	48 X 48	32.0
W16-2P	2	24 x 18	6.0
		TOTAL:	817.3

190-51 10-15-13																										
MATERIALS FOR TYPE 'A' SIGNS																										
TYPE A SIGNING TYPICALS	SIGN NUMBER	DIR OF TRAVEL	SIGN LOCATION	WOOD POSTS		PERFORATED SQUARE STEEL TUBE						MASSH-400 POST			TYPE A SIGN MOUNTING BRACKETS						INSTALLATION			REMARKS		
				NO. OF POSTS	4 x 6		LEG 1	LEG 2	LEG 3	ANCHOR			LEG 1	LEG 2	LEG 3	ONE POST BRACKET	TWO POST	AUXILIARY	H	F	F1	TYPE	DIM 'X' FT		SEE SIGNING NOTES	
			STATION		LEG 1 FT	LEG 2 FT				CONC	SOIL	SLIPBASE														FT
Hickman	W3-5	E	652+50					13				1											1	15	IA	On Light Pole
	R2-1	E	658+50																			1		IA		
	R2-1	W	658+50					13				1										1	15	IA		
	R2-1	W	670+28					13				1										1	15	IA		
	R2-1	E	682+43																			1		IA	On Light Pole	
	W9-1L	E	685+34																			1	15	IA		
	W16-2P	E	685+34																							
	W9-1L	E	685+34					15				1											1	15		
	W16-2P	E	685+34																							
	R4-7	W	690+59					15				1											3		IA	Median Nose
	OM1-2	W	690+59																						IA	Median Nose
	R4-7	S	691+36					15				1											3		IA	Median Nose
	OM1-2	S	691+36																						IA	Median Nose
	R4-7	E	692+33					15				1											3		IA	Median Nose
	OM1-2	E	692+33																						IA	Median Nose
	W4-2L	E	692+75					13				1													IA	Median
	W4-2L	E	692+75					13				1											1	15	IA	
	R2-1	W	698+00					13				1											1	15	IA	
	W3-5	W	698+00					13				1											1	15	IA	
	R2-1	E	702+00					13				1											1	15	IA	
	Sidewalk	W1-2R	W	50055+97					13				1											1	6	IA
SLOW Plaque		W	50055+97																				1	6	IA	
W1-2L		W	50056+44					13				1											1	6	IA	
SLOW Plaque		W	50056+44																				1	6	IA	
W1-2R		E	50062+60					13				1											1	6	IA	
SLOW Plaque		E	50062+60																				1	6	IA	
W1-2L		W	50066+90					13				1											1	6	IA	
SLOW Plaque		W	50066+90																				1	6	IA	
RAMPS	W12-1	S	3420+97					13				1											3		IA	ON MAST ARM ON MAST ARM
	R3-6mod	S	3423+00																					IA		
	R3-6mod	N	4416+00																					IA		
	W12-1	N	4417+64					13		13		15										3		IA		
	W4-2R	S	5415+79				13				2											1	20	IA		
	R1-2	S	5417+30					13				1										1	20	IA		
	R1-2	S	5417+55					13				1										3		IA		
	R1-2	N	6421+60					13				1										3		IA		
	R1-2	N	6421+85					13				1										1	20	IA		
	W4-2R	N	6424+04				13				15	2										1	20	IA		
Do Not Enter Layout																										
Do Not Enter Layout	R5-1	W	672+32				13			15		2											1	6	IA	
	R4-7b	W	672+50					15				1											3		IA	
	OM1-2	W	672+50																					IA		
	R5-1	N	672+56				13			15		2											1	6	IA	
	R10-6	E	672+86				13			15		2											1	6	IA	
	R5-1	E	672+86																				1	6	IA	
	R5-1	N	672+94				13			15		2											1	6	IA	
	R5-1	S	674+25				13			15		2											1	6	IA	
	R5-1a	S	674+25																				1	6	IA	
	R5-1	E	674+32				13			15		2											1	6	IA	
	R5-1a	E	674+32																				1	6	IA	
	R10-6R	W	674+32																							
	R5-1	N	674+40				13			15		2											1	6	IA	
	R5-1a	N	674+40																				1	6	IA	
	R4-8b	E	674+43					15				1											3		IA	
	OM1-2	E	674+43																						IA	
	R5-1	E	674+70				13			15		2											1	6	IA	
	R5-1a	E	674+70																				1	6	IA	
	R5-1	N	674+75				13			15		2											1	6	IA	
	R5-1a	N	674+75																				1	6	IA	
	R5-1a	E	675+60					13				1											1	15	IA	
	R5-1a	E	675+60					13																		

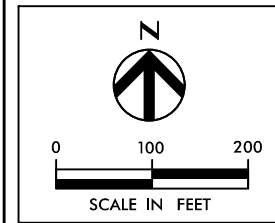
259-1 10-15-13 SIGNING NOTES The following tolerances will be allowed on all signs: Accumulation error of not greater than +/-0.50" per line of copy, not greater than +/-0.50" for spacing between lines of copy, and the margin between lines of copy and the inside edge of the sign border. The following tolerances will be allowed on each letter or numeral: <table><tr><td>nominal height</td><td>variation in height</td><td>variation in width</td></tr><tr><td>4" thru 12"</td><td>-1/8" to +3/8"</td><td>-1/4" to +1/4"</td></tr><tr><td>over 12"</td><td>-1/8" to +3/8"</td><td>-3/8" to +3/8"</td></tr></table> ----- Type B signs can be separated into two categories: - Major Guide Signs. - Minor Guide Signs. Major Guide Signs include the advance and exit direction guide signs for an interchange or intersection. Minor Guide Signs include all other guide signs such as NEXT EXIT signs, supplemental guide signs, logo signs, exit gore signs, post-interchange mileage signs, ramp destination signs, and ramp logo signs for an interchange, as well as destination signs along sideroads. Type A signs are not separated into categories, but special consideration should be given to regulatory signs. Do not remove Type B signs until replacement signs have been installed. If construction activities require the removal of a sign, the existing sign may be relocated to temporary posts, or a temporary plywood sign may be installed to replace the existing sign. Existing non-regulatory Type A signs are NOT required to remain in place until installation of replacement signs. Existing regulatory Type A signs, particularly Stop signs, should not be removed until replacement signs are installed. This guideline may not apply if the traffic control plans have sufficient temporary signing. Apply the following during the replacement or modification of signs: - No more than one of the major guide signs for each direction of travel at an interchange out of service at any one time. - No major guide sign out of service for more than 8 hours. - No minor guide out of service for more than 24 hours. Remove existing signs and posts within 24 hours following the installation of a new replacement sign. In any case where the plans call for a new sign and posts to be installed at the same station location and offset as an existing sign, install the new posts at a minimum of either 5 ft ahead or behind the existing sign installation. Whenever posts for a replacement sign are erected directly in front of an existing sign, install the new replacement sign and remove the existing sign installation within 24 hours of the time that the new posts are erected. Where signs are located behind guardrail, locate the near edge of the sign a minimum of 3 ft behind the guardrail posts. The Engineer may approve reducing this distance to a minimum of 1 ft where field conditions warrant. Unless noted otherwise, leave auxiliary panels, such as exit number panels, in place or reattach to the sign using the existing mounting hardware. Also, when replacing an existing logo sign with a new logo sign, remove the business logo panel(s) from the existing sign and attach to the new sign as directed by the Engineer. Do not damage the auxiliary or logo panels when removing and reattaching them. This work is incidental to other work and no separate payment will be made.			nominal height	variation in height	variation in width	4" thru 12"	-1/8" to +3/8"	-1/4" to +1/4"	over 12"	-1/8" to +3/8"	-3/8" to +3/8"	259-1 10-15-13 SIGNING NOTES The following notes apply to the corresponding sign installations shown on the plan sheets and listed in the tabulations. IB INSTALL NEW TYPE B SIGN IA INSTALL NEW TYPE A SIGN Install new signs at the location identified in the plans. For installation of new signs on existing posts: - if the new sign is taller than the existing sign, furnish the necessary hardware to extend the sign above the posts. Refer to Standard Road Plan SI-132. - if the new sign is shorter that the existing sign: - for wood posts and perforated square tube posts, install the sign at the proper height and cut off the excess post length. - for steel posts, install the sign at the top of the posts. For installation of new signs on an existing sign support structure, refer to note (L). Payment for installing Type A signs or Type B signs includes furnishing hardware for mounting, extending signs above existing posts, and cutting off wood posts. MS MODIFY EXISTING SIGN Modify the copy on the existing sign as shown in the plans. Deliver existing copy which is removed to a DOT storage area within 50 mi, as designated by the Engineer. Install the new copy as needed to make sign modifications. Payment for Modification of Existing Sign includes removal of existing copy and installation of new copy. MB INSTALL SPECIAL MOUNTING BRACKET Install special mounting brackets at the locations identified in the plans. Refer to Tabulations 190-10, 190-51, and/or 190-65. PW INSTALL NEW WOOD POSTS PB INSTALL NEW BREAKAWAY STEEL POSTS AND FOOTING PP INSTALL NEW PERFORATED SQUARE TUBE POSTS AND ANCHORS Install new wood posts, breakaway steel posts and footings, or perforated square tube posts and anchors at the locations indicated in the plans. Refer to Tabulations 190-51 and 190-50 for post size and footing information. If note (RR) accompanies (PW), (PB), or (PP), install an existing sign on the new posts. RR REMOVE AND REINSTALL SIGN: Do not remove existing major Type B guide signs on posts until the new posts are installed. Promptly remove sign and install at the new location. Existing major Type B guide signs on overhead support structures, minor Type B guide signs, plywood signs, and Type A signs may be removed and stored. Transport the signs to a DOT storage area within 50 mi, as designated by the Engineer. Transport the signs back to the job site when ready for installation at the new location. Replace signs damaged by the Contractor's activities at no additional cost to the Contracting Authority. Payment for Remove and Reinstall Sign includes sign removal, delivery to the DOT storage area (if applicable), and reinstallation. RA REMOVE TYPE A SIGN ASSEMBLY RB REMOVE TYPE B SIGN ASSEMBLY Type A Sign Assembly consists of one or more signs installed on one or more wood posts, either directly mounted to the post or mounted to the post with special sign mounting brackets.			259-1 10-15-13 SIGNING NOTES Type B Sign Assembly consists of the main sign, all auxiliary signs and brackets, and the wood or steel posts. Unless stated otherwise in the plans, remove all posts with the signs and brackets. Remove each sign assembly identified in the plans. Sign posts removed become the property of the Contractor. All other materials removed remain the property of the DOT. Disassemble each sign assembly removed before delivering to the DOT. For Type A sign assemblies, unbolt all signs, special mounting brackets, and posts from each other. For Type B assemblies, unbolt all extruded aluminum panels, brackets, and posts from each other. Do not damage the disassembled materials. Place backfill in holes remaining from the removal of wood posts and restore to the normal surrounding conditions. Deliver the removed signs, special sign mounting brackets, and extruded aluminum panels to a DOT storage area within 50 mi, as designated by the Engineer. The concrete footings for steel posts are not considered part of the sign assembly. Refer to note RF for concrete footing removal. Payment for Removal of Type A Sign Assembly or Removal of Type B Sign Assembly includes sign assembly removal and disassembly, post removal (if applicable), delivery to the DOT storage area, placing backfill in holes, and restoration of the surrounding conditions. RF REMOVE EXISTING CONCRETE FOOTING FOR STEEL POST Remove existing concrete footings to a depth of 1 ft below ground. Place backfill in holes remaining from removal and restore to the normal surrounding conditions. This work is incidental to other work and no separate payment will be made. RS REMOVE EXISTING TYPE B SIGN SUPPORT STRUCTURE The following are considered Type B Sign Support Structures: - Overhead sign truss and foundation, - Cantilevered sign truss and foundation, or - Bridge mounted brackets. For removal purposes, wood and steel post are not considered Type B Support Structures. Unless stated otherwise in the plans, existing overhead trusses, cantilevered trusses, and bridge brackets which are removed become the property of the Contractor. If stated in the plans, deliver overhead trusses, cantilevered trusses, and bridge brackets to a DOT storage area within 50 mi, as designated by the Engineer. Payment for Removal of Sign Support Structure and Foundation includes sign support structure removal, delivery to the DOT storage area (if applicable), and restoration of the surrounding conditions. L MODIFY SIGN SUPPORT ANGLES NEEDED TO INSTALL SIGNS ON EXISTING SIGN SUPPORTS STRUCTURES Refer to the sign support structure details for information on the required angle brackets. Provided all specifications are met, the existing sign support angles may be reused. Install existing sign support angles to be reused only on the sign support structure from which they were removed. Sign support angles removed and not reused become the property of the Contractor. When reusing the existing sign support angles with a shorter replacement sign, the sign support angles may need to be trimmed. Refer to the sign support details to determine if and where to trim the sign support angles. Do not use existing fasteners. Use new stainless steel bolts and nuts to install the existing or new sign support angles to the sign support structure.			259-1 10-15-13 SIGNING NOTES Removal of existing sign support angles is incidental to removal of the sign. Reinstalling and/or modifying existing sign support angles; furnishing and installing new sign support angles (if required); and furnishing and installing new fasteners is incidental to work associated with Type B signs. SIGN INSTALLATION QUALITY CONTROL NOTES Post lengths have been derived from the proposed grading cross sections. Field verify post lengths. Slight differences between the design template and the actual conditions should be expected. These variations should be resolved by doing some localized shaping and grading. Obtain material needed to meet the site requirements of SI-113 from the footing excavation and/or the area immediately adjacent to the footing. Ensure reshaping work does not substantially change foreslopes or the drainage in the vicinity of the sign. Significant differences between the design template and the actual field conditions need to be resolved in this manner: Survey the location and draw the actual template on the cross section. Recalculate each post length and compare to the maximum allowable leg length. If all of the maximum leg lengths are less than or equal to the maximum allowable leg length, then the proposed post design will be sufficient. If any leg is greater than the maximum allowable leg length, then submit the cross section with the actual template drawn (including offsets and elevation from the survey shown) to the Engineer. The Engineer may forward this information on to the design Engineer in order to complete a new post design. Install the footings, stub posts, and posts according to the following tolerances: -elevation difference from the edge of pavement to the bottom of the sign within 6 inches of the dimension shown. -elevation difference of less than 2 inches between the top of the highest post and the lowest post at a site. Footing construction is the controlling activity that substantially affects the quality of the site installation. Verify the elevation difference between the stubs is exactly the same as the elevation difference between the post lengths. If the Engineer requests, submit documentation detailing the site field shots in order to verify site installation.		
nominal height	variation in height	variation in width																		
4" thru 12"	-1/8" to +3/8"	-1/4" to +1/4"																		
over 12"	-1/8" to +3/8"	-3/8" to +3/8"																		
FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\HDR			POLK COUNTY	PROJECT NUMBER	IM-080-3(275)125--13-77		SHEET NUMBER	C.10									

SEE GRADING AND PAVING PROJECT IM-080-3(274)125--13-77 FOR STAGING INFORMATION

1. Remove signs as impacted by construction staging. Reinstall signs as construction allows.



1. Install Reflective Panel on PSST for R5-1 and/or R5-1a signs. Reflective panels will be subsidiary to the PSST bid item.



PRELIMINARY DESIGN
NOT FINAL – SUBJECT TO CHANGE

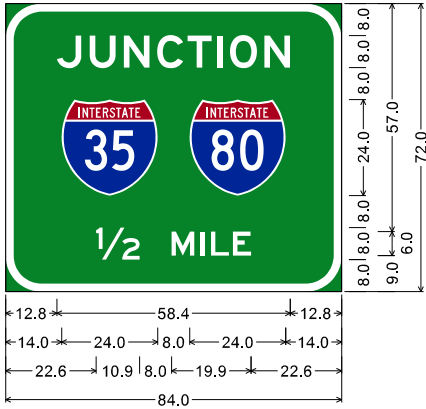


SIGNING LAYOUT – DO NO ENTER /WRONG WAY LAYOUT
HICKMAN ROAD INTERCHANGE
PROJECT IM-080-3(275)125—13-77

Date
June 2026

Sheet
N.5

06-77-125-S1



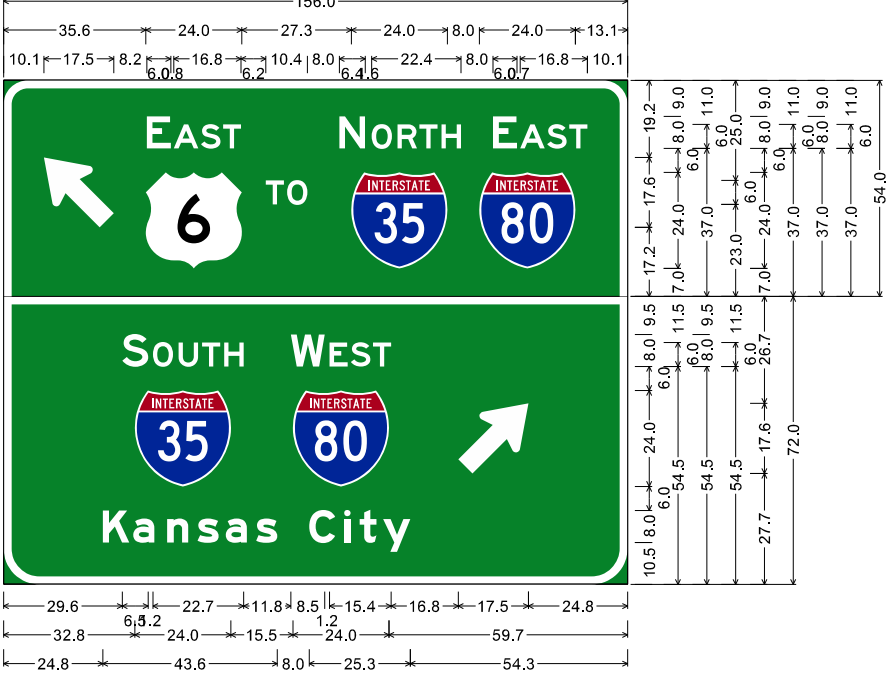
9.0" Radius, 2.0" Border, White on Green;
"JUNCTION", E 2K; "1/2 MILE", E 2K;



Slow Plaque

1.5" Radius, 0.6" Border, 0.4" Indent, Black on Yellow;
"SLOW", C 2K;

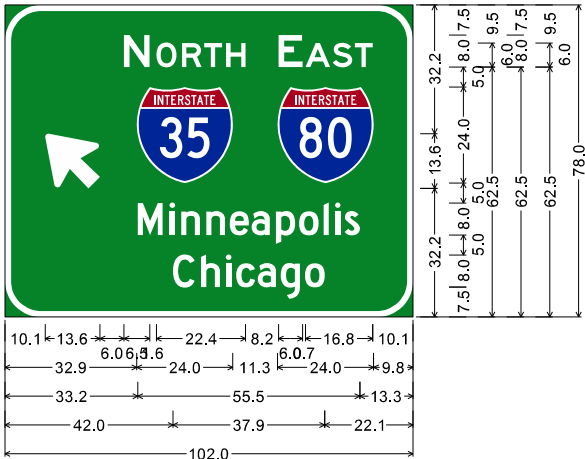
06-77-125-S2



6.0" Radius, 2.0" Border, White on Green;
Standard Arrow 5 22.3" X 13.5" 135°; "EAST", E 2K; "TO", E 2K;
"NORTH", E 2K; "EAST", E 2K;

9.0" Radius, 2.0" Border, White on Green;
"SOUTH", E 2K; "WEST", E 2K; "Kansas City", E Mod 2K;
Standard Arrow 5 22.3" X 13.5" 45°;

06-77-125-S4



9.0" Radius, 1.5" Border, White on Green;
Arrow I-A - 17.0" 135°; "NORTH", E 2K;
"EAST", E 2K; "Minneapolis", D 2K;
"Chicago", D 2K;

06-77-125-S3



4.0" Radius, 2.0" Border, White on Green;
"WEST", E 2K;

4.0" Radius, 2.0" Border, White on Green;
Standard Arrow 5 22.3" X 13.5" 45°;

12.0" Radius, 2.0" Border, White on Green;
"SOUTH", E 2K; "WEST", E 2K;
"Kansas City", E Mod 2K;
Standard Arrow 5 22.3" X 13.5" 135°;

06-77-125-S6

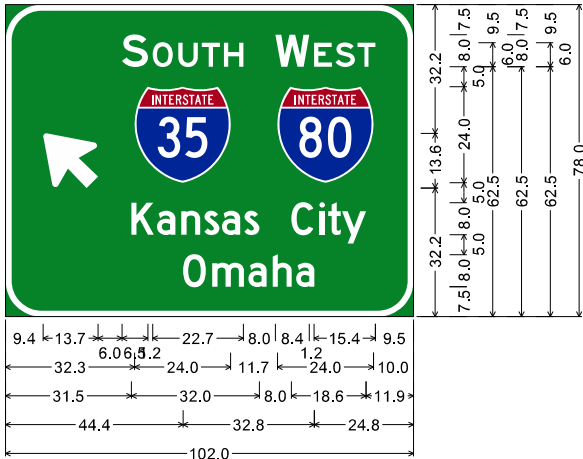


4.0" Radius, 2.0" Border, White on Green;
"EAST", E 2K;

4.0" Radius, 2.0" Border, White on Green;
Standard Arrow 5 22.3" X 13.5" 45°;

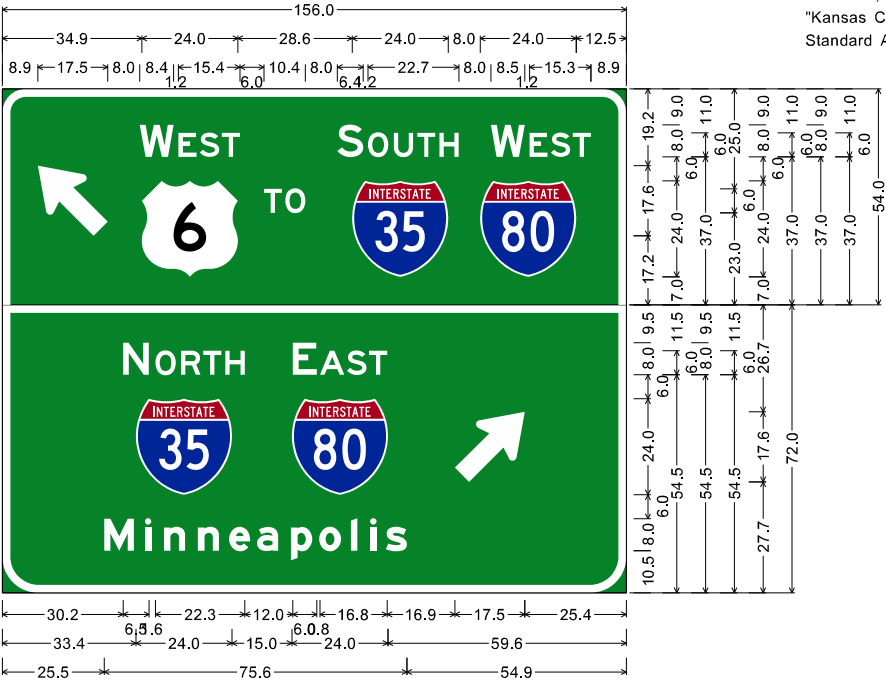
12.0" Radius, 2.0" Border, White on Green;
"NORTH", E 2K; "EAST", E 2K;
"Minneapolis", E Mod 2K;
Standard Arrow 5 22.3" X 13.5" 135°;

06-77-125-S5



9.0" Radius, 1.5" Border, White on Green;
Arrow I-A - 17.0" 135°; "SOUTH", E 2K;
"WEST", E 2K; "Kansas City", D 2K;
"Omaha", D 2K;

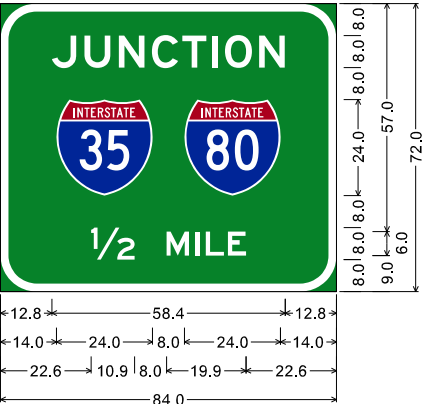
06-77-125-S7



6.0" Radius, 2.0" Border, White on Green;
Standard Arrow 5 22.3" X 13.5" 135°; "WEST", E 2K; "TO", E 2K;
"SOUTH", E 2K; "WEST", E 2K;

9.0" Radius, 2.0" Border, White on Green;
"NORTH", E 2K; "EAST", E 2K; "Minneapolis", E Mod 2K;
Standard Arrow 5 22.3" X 13.5" 45°;

06-77-125-S8

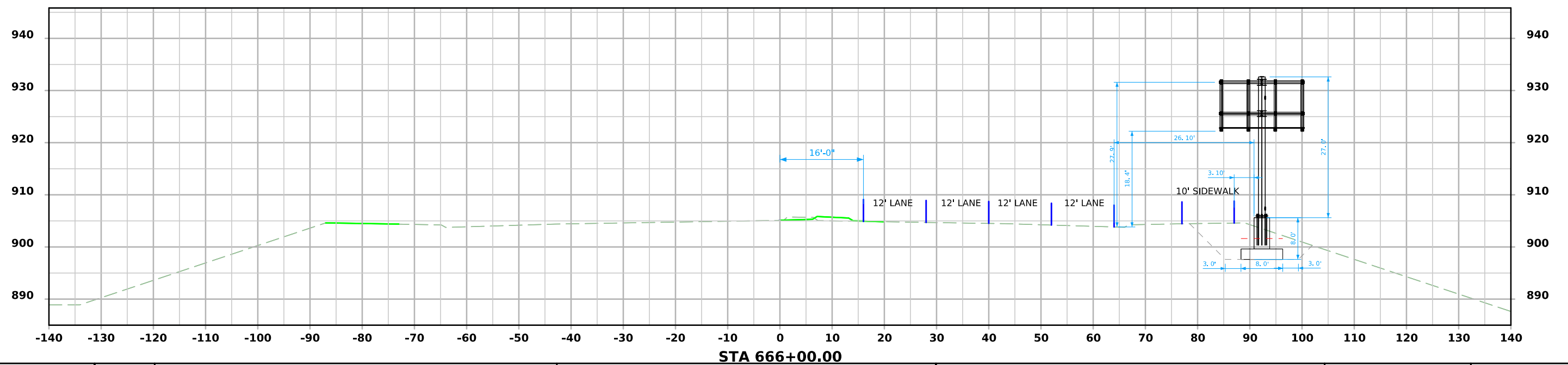


9.0" Radius, 2.0" Border, White on Green;
"JUNCTION", E 2K; "1/2 MILE", E 2K;

US 6 EB

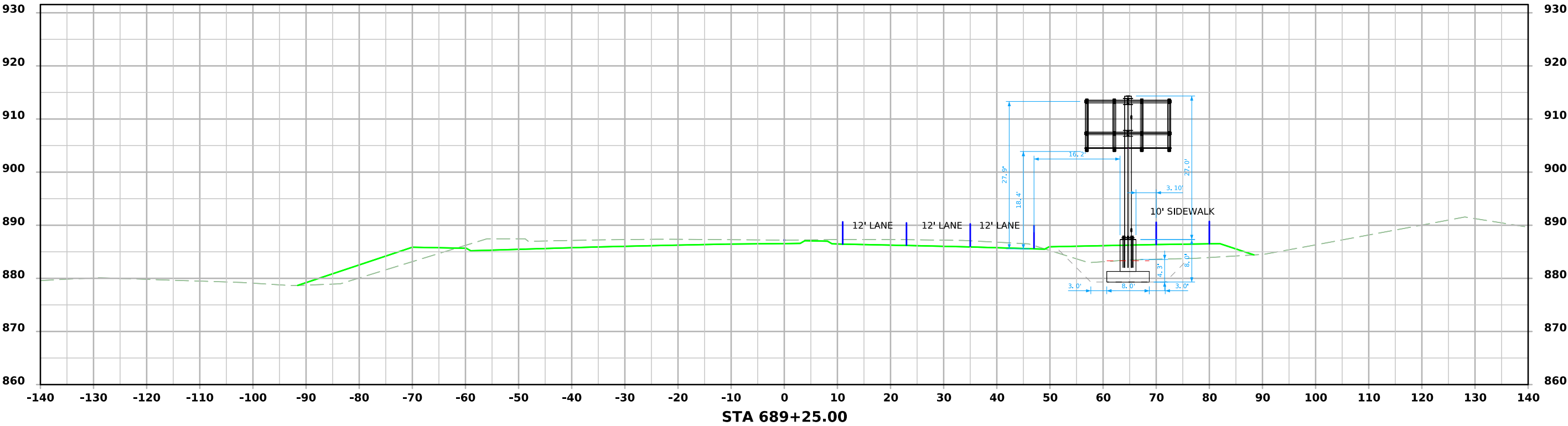
NOTE:

Groundwater may be encountered during footing construction. The contractor shall manage groundwater to avoid disturbance of the bearing surface and to facilitate footing construction in dry conditions.



US 6 WB

NOTE:
Groundwater may be encountered during footing construction. The contractor shall manage groundwater to avoid disturbance of the bearing surface and to facilitate footing construction in dry conditions.



GENERAL NOTES

1.
- THE CONTRACTOR SHALL BORE UNDER ANY EXISTING ASPHALT OR CONCRETE PAVEMENT, RAILROAD OR OTHER STRUCTURE.
2.
- LINEAR MEASUREMENTS ARE TAKEN BETWEEN METER PEDESTAL, CABINET AND HANDHOLE CENTERS AND DO NOT INCLUDE ALLOWANCES FOR VERTICAL RISES OR SPLICES. ADDITIONAL CABLE SLACK SHALL BE FURNISHED, INSTALLED, COILED AND RACKED IN HANDHOLES AS REQUIRED.

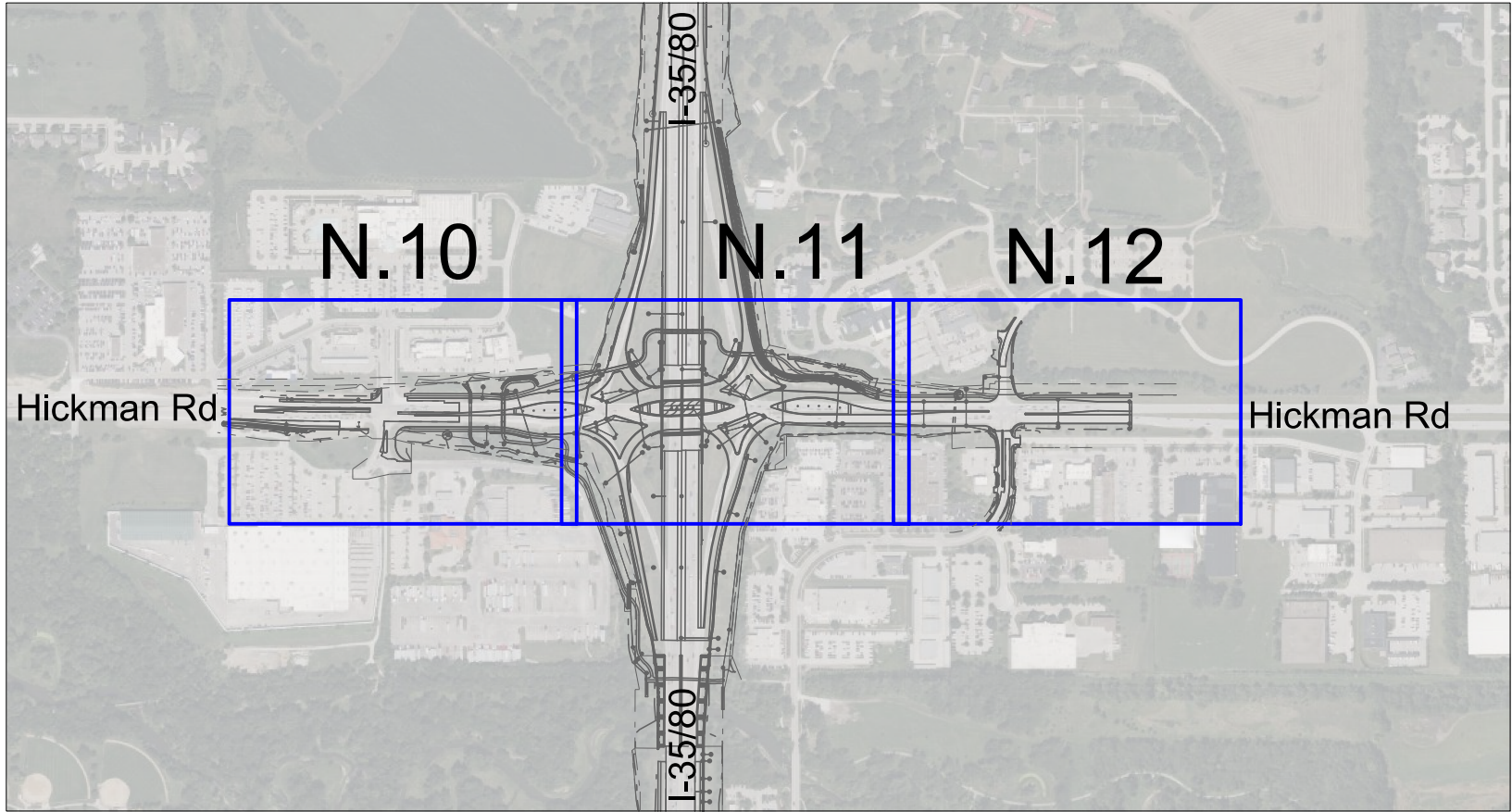
LEGEND

Existing

- ROW
- CONDUIT
- HANDHOLE
- POWER SOURCE
- METER PEDESTAL
- ITS DEVICE CABINET, PEDESTAL MOUNT WITH PAD
- LIGHTING CONTROL CABINET
- JOINT UTILITY TRENCH

Proposed

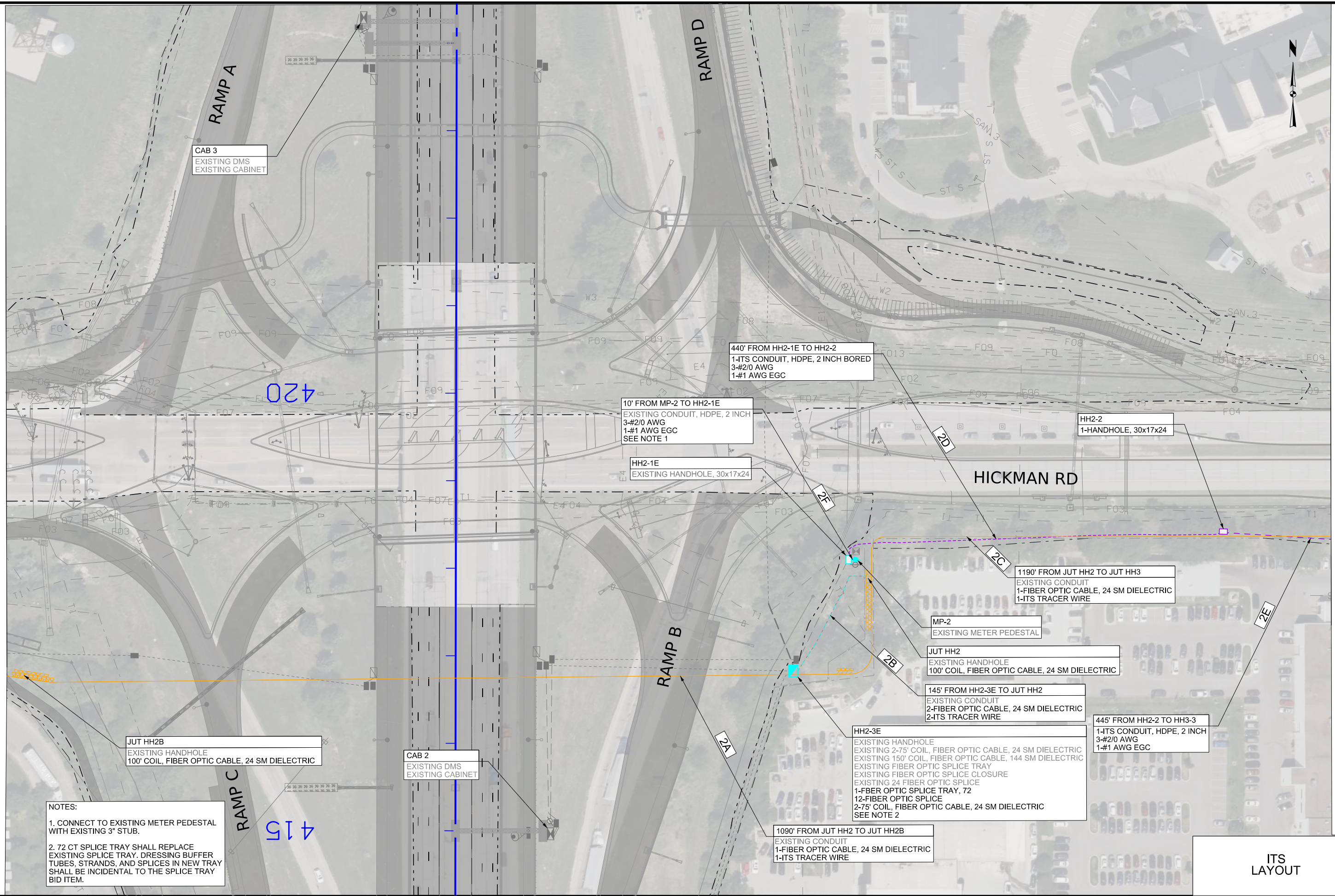
- ROW
- PLOWED COMMUNICATION CONDUIT
- PLOWED POWER CONDUIT
- BORED COMMUNICATION CONDUIT
- BORED POWER CONDUIT
- HANDHOLE, 30"X17"X24" - POWER
- HANDHOLE, 36"X24"X36"
- HANDHOLE, 48"X30"X36"
- ITS DEVICE CABINET, PEDESTAL MOUNT
- METER PEDESTAL
- LIMITS OF CONSTRUCTION



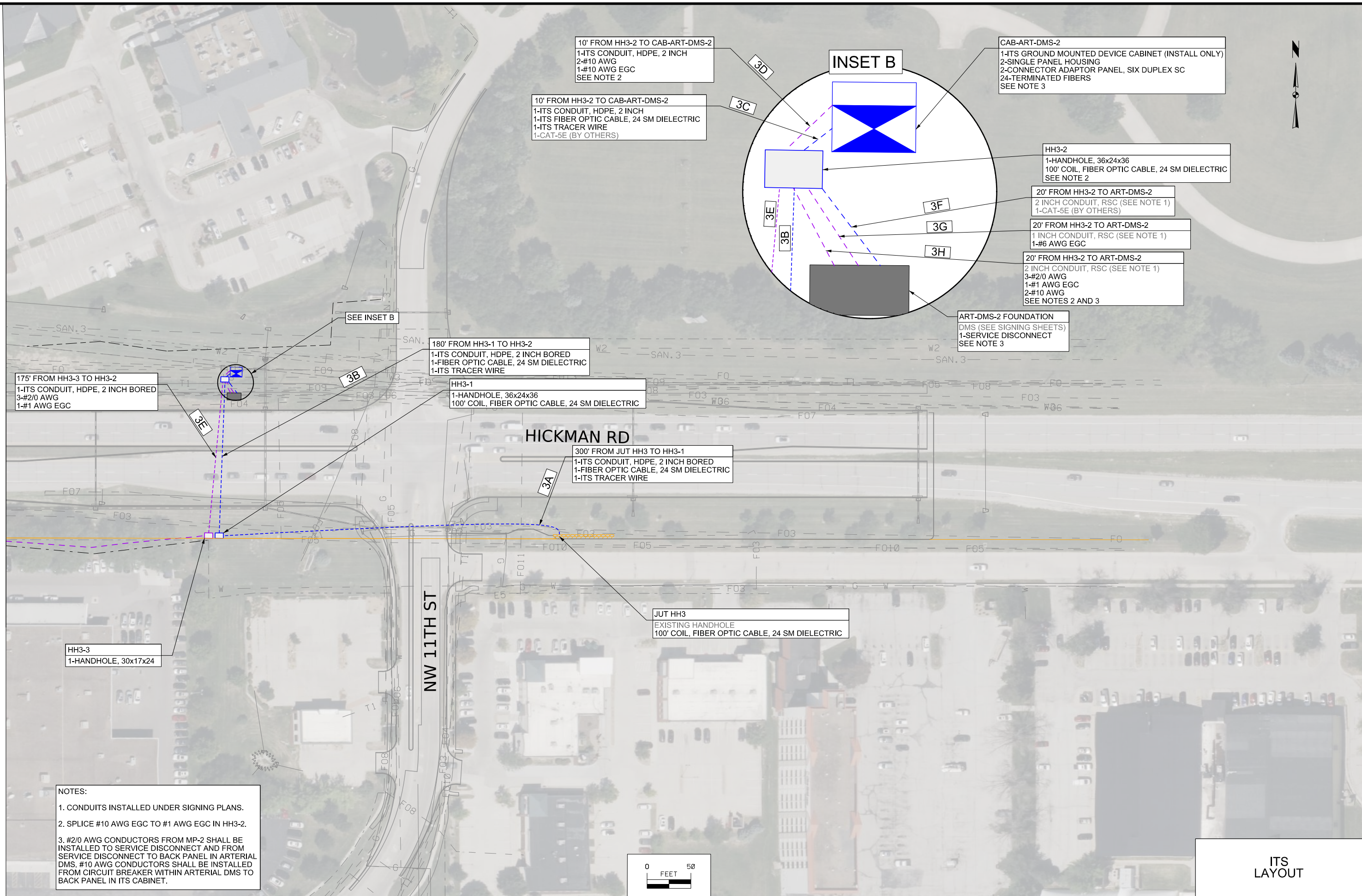
GENERAL NOTES
&
LEGEND

MATCHLINE N.7

MATCHLINE N.9



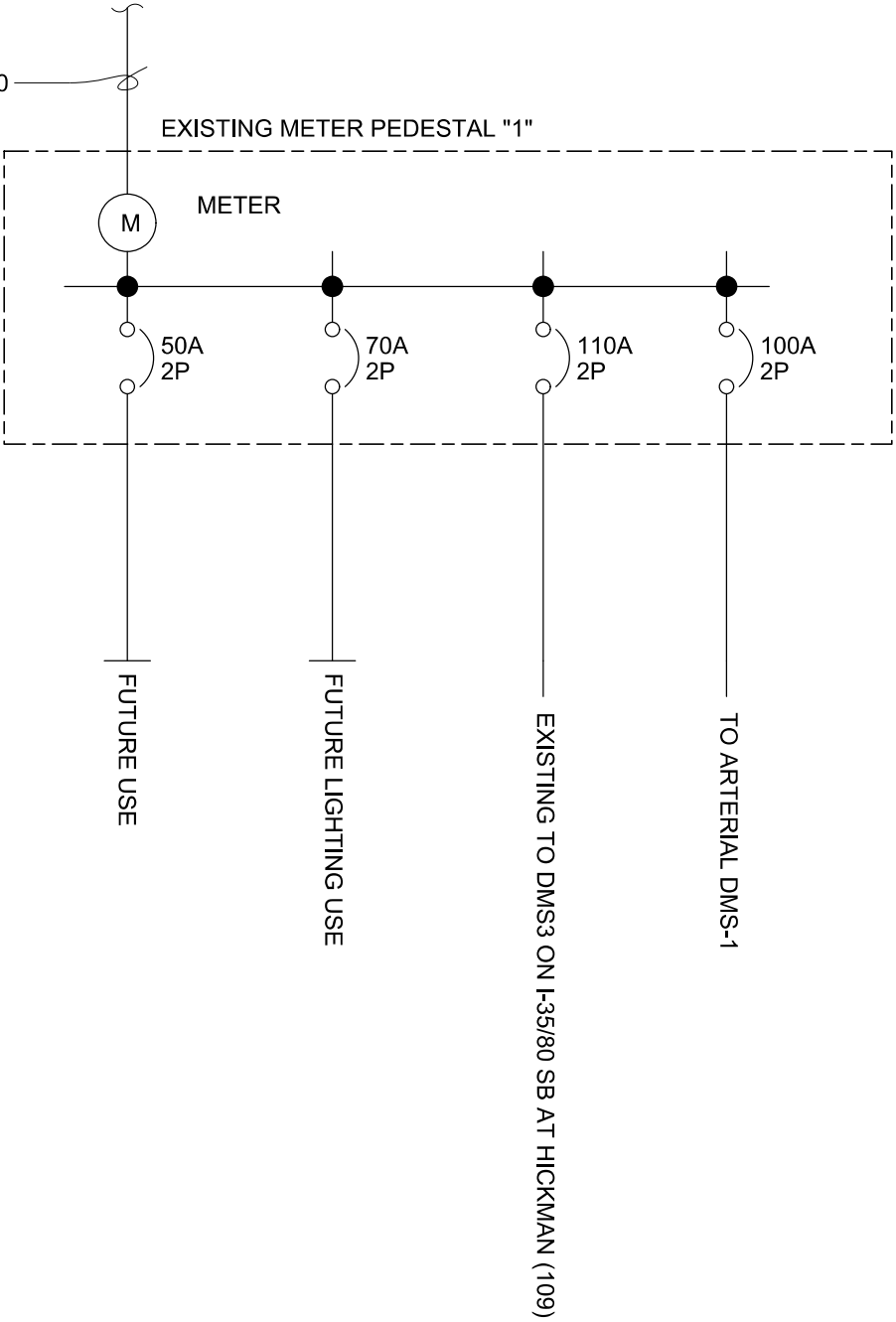
ITS
LAYOUT



CKT	CABLE/CONDUIT DESCRIPTION	CONDUCTORS: COPPER (CU) OR ALUMINUM (AL)
C-00	2-#3/0, 1-#3/0N, 3" C	CU

EXISTING 120/240V, 200 AMP SERVICE FROM UTILITY

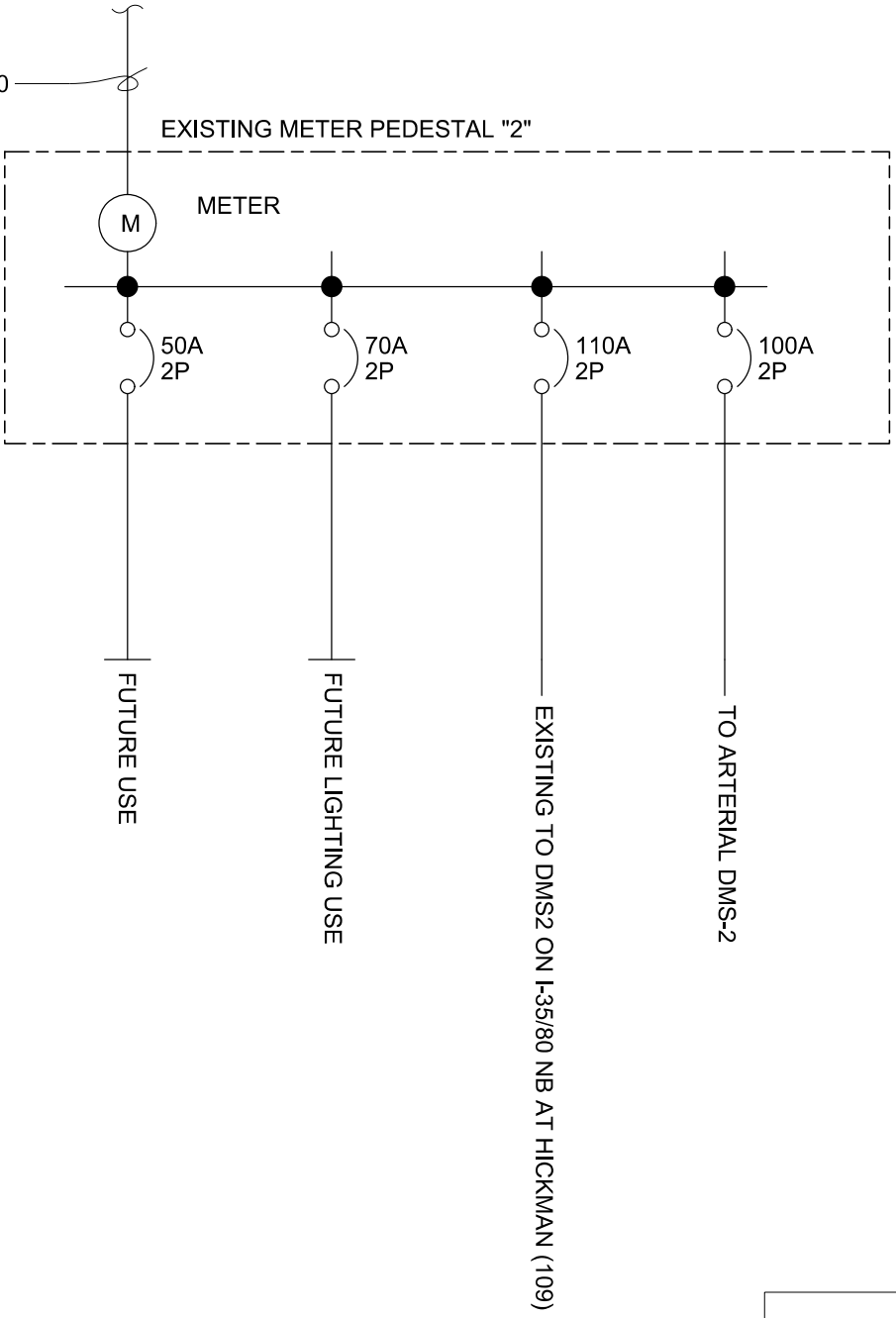
EXISTING C-00



CKT	CABLE/CONDUIT DESCRIPTION	CONDUCTORS: COPPER (CU) OR ALUMINUM (AL)
B-00	2-#3/0, 1-#3/0N, 3" C	CU

EXISTING 120/240V, 200 AMP SERVICE FROM UTILITY

EXISTING B-00



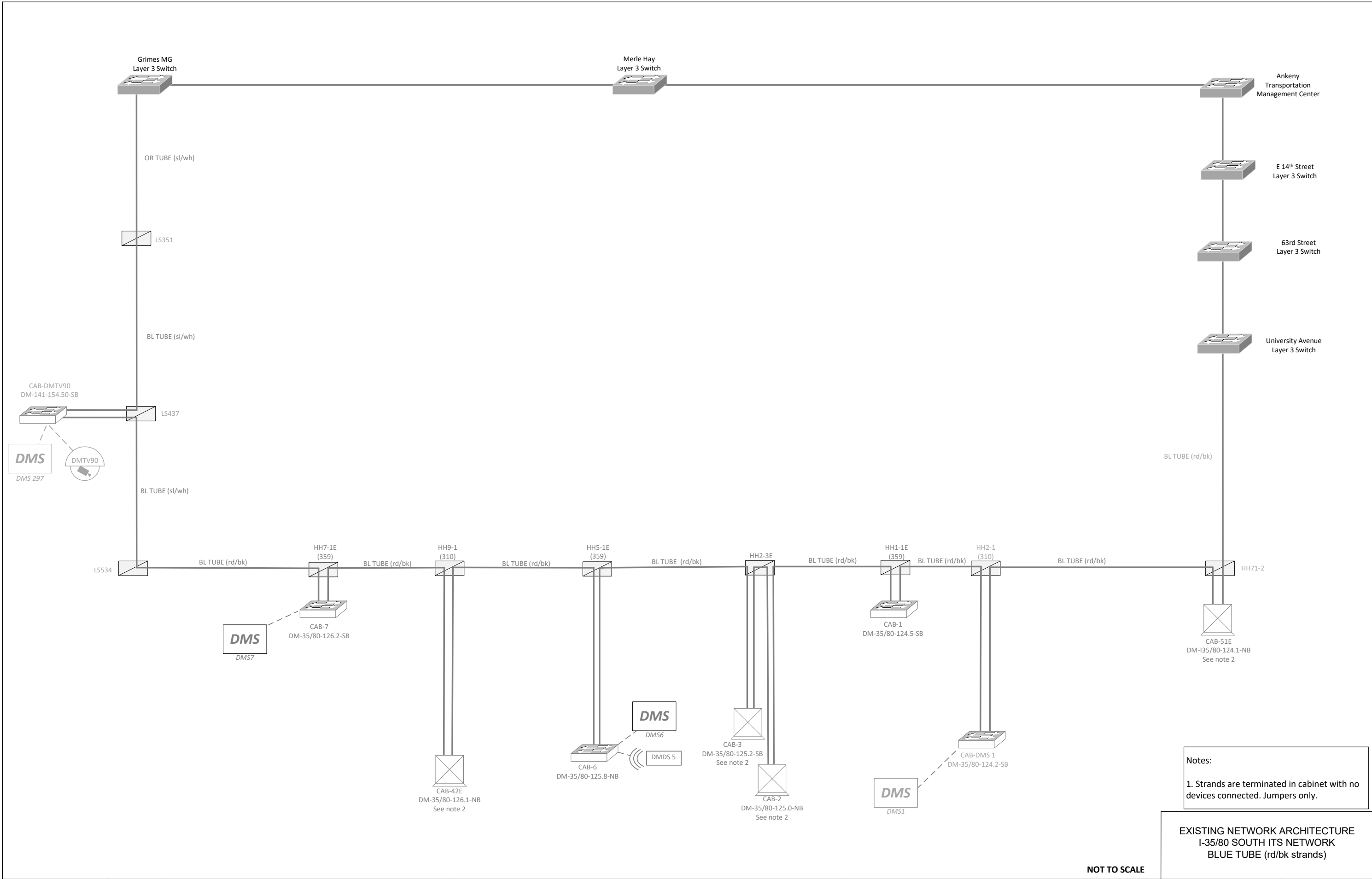
METER PEDESTAL
ONE-LINE
DIAGRAMS

LISTING OF CONDUIT WORK															
CONDUIT RUN	LOCATION		EXISTING/ PROPOSED	TYPE	CONDUIT LENGTH (ft)	2 IN. CONDUIT BORED (LF)	2 IN. CONDUIT PLOWED (LF)	ITS TRACER WIRE (LF)	24 SM DIELECTRIC FIBER (LF)	#10 AWG (LF)	#6 AWG (LF)	#4 AWG EGC (LF)	#2 AWG (LF)	#1 AWG EGC (LF)	#2/0 AWG (LF)
	FROM	TO													
1A	MP-1	HH1-3	EXISTING	POWER	10							10	30		
1B	HH1-3	HH1-2	PROPOSED	POWER	520		520					520	1560		
1C	HH1-2	HH1-1	PROPOSED	POWER	65		65					65	195		
1D	JUT HH2B	JUT HH1	EXISTING	COMMS	700			700	700						
1E	JUT HH1	HH1-1	PROPOSED	COMMS	90		90	90	90						
1F	HH1-1	ART-DMS-1	EXISTING	COMMS	10										
1G	HH1-1	ART-DMS-1	EXISTING	POWER	10					20		10	30		
1H	HH1-1	ART-DMS-1	EXISTING	POWER	10						10				
1I	HH1-1	CAB-ART-DMS-1	PROPOSED	COMMS	10		10	10	10						
1J	HH1-1	CAB-ART-DMS-1	PROPOSED	POWER	10		10			30					
2A	JUT HH2	JUT HH2B	EXISTING	COMMS	1090			1090	1090						
2B	HH2-3E	JUT HH2	EXISTING	COMMS	145			290	290						
2C	JUT HH2	JUT HH3	EXISTING	COMMS	1190			1190	1190						
2D	HH2-1E	HH2-2	PROPOSED	POWER	440		440							440	1320
2E	HH2-2	HH3-3	PROPOSED	POWER	445		445							445	1335
2F	MP-2	HH2-1E	EXISTING	POWER	10									10	30
3A	JUT HH3	HH3-1	PROPOSED	COMMS	300	300		300	300						
3B	HH3-1	HH3-2	PROPOSED	COMMS	180	180		180	180						
3C	HH3-2	CAB-ART-DMS-2	PROPOSED	COMMS	10		10	10	10						
3D	HH3-2	CAB-ART-DMS-2	PROPOSED	POWER	10		10			30					
3E	HH3-3	HH3-2	PROPOSED	POWER	175	175								175	525
3F	HH3-2	ART-DMS-2	EXISTING	COMMS	20										
3G	HH3-2	ART-DMS-2	EXISTING	POWER	20						20				
3H	HH3-2	ART-DMS-2	EXISTING	POWER	20					40				20	60
					Total	655	1600	3860	3860	120	30	605	1815	1090	3270

LISTING OF HANDHOLE WORK						
HANDHOLE LABEL	HANDHOLE TYPE	EXISTING/ PROPOSED	24 SM FIBER COIL (FT)	ITS Fiber Marker	EASTING	NORTHING
HH1-1	ITS Handhole, 36x24x36	PROPOSED	100	1	7497206.3	18482470.8
JUT HH1	ITS Handhole - JUT	EXISTING	100		-	-
HH1-2	ITS Handhole, 30x17x24	PROPOSED			7497147.1	18482478.0
HH1-3	ITS Handhole, 30x17x24	EXISTING			-	-
HH2-1E	ITS Handhole, 30x17x24	EXISTING			-	-
HH2-2	ITS Handhole, 30x17x24	PROPOSED			7497216.4	18484418.3
HH2-3E	ITS Handhole, 48x30x36	EXISTING	150		-	-
JUT HH2	ITS Handhole - JUT	EXISTING	100		-	-
JUT HH2B	ITS Handhole - JUT	EXISTING	100		-	-
HH3-1	ITS Handhole, 36x24x36	PROPOSED	100	1	7497213.5	18484784.4
HH3-2	ITS Handhole, 36x24x36	PROPOSED	100	1	7497391.7	18484790.8
HH3-3	ITS Handhole, 30x17x24	PROPOSED			7497213.6	18484772.4
JUT HH3	ITS Handhole - JUT	EXISTING	100		-	-
		Total	850	3		

LISTING OF ITS CABINET WORK						
CABINET LABEL	SHEET NUMBER	EXISTING PROPOSED	GROUND MOUNT	GROUND ROD	EASTING	NORTHING
MP-1	N.02	EXISTING			-	-
CAB-ART-DMS-1	N.02	PROPOSED	1	1	7497207.92	18482482.53
MP-1	N.03	EXISTING			-	-
CAB-ART-DMS-2	N.04	PROPOSED	1	1	7497401.10	18484808.36
		Total	2	2		

ITS LISTING OF WORK

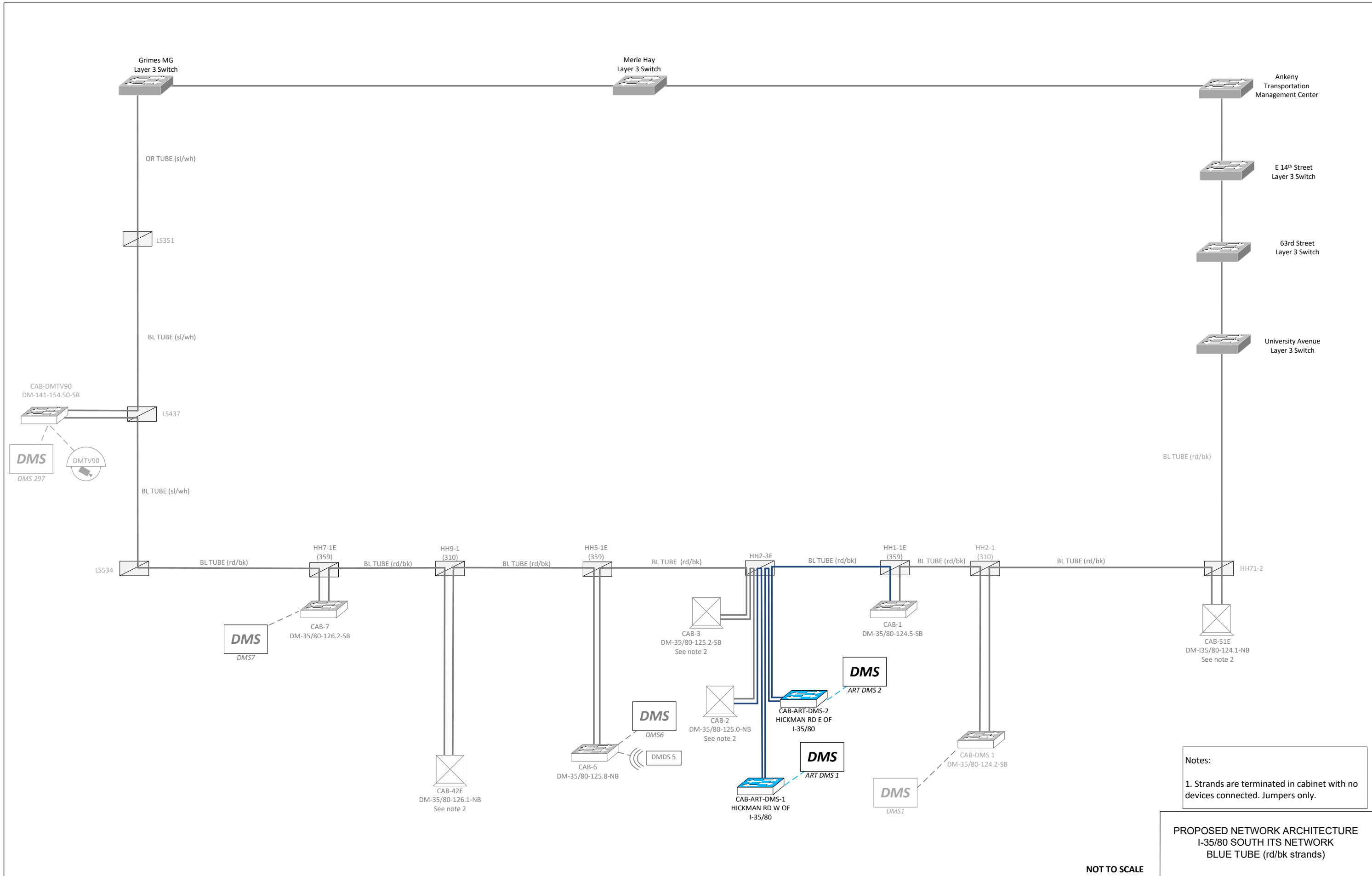


Notes:

1. Strands are terminated in cabinet with no devices connected. Jumpers only.

EXISTING NETWORK ARCHITECTURE
I-35/80 SOUTH ITS NETWORK
BLUE TUBE (rd/bk strands)

NOT TO SCALE



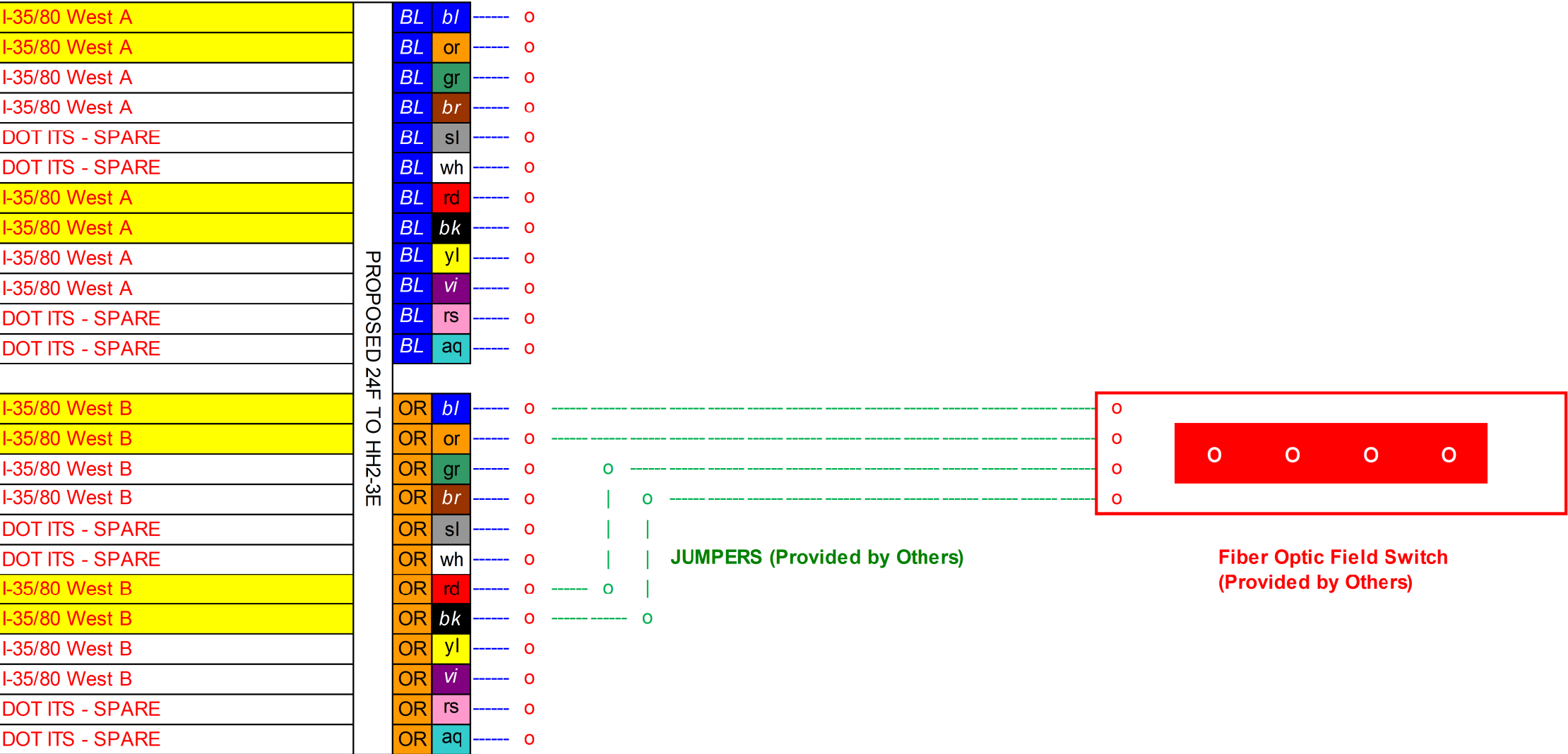
Layer 2 Testing Plan						
START Location		END Location		Testing Requirement	Fiber Foot Marker Length (Provided by Contractor)	OTDR Tested Length
Cabinet	Fiber Terminations	Cabinet	Fiber Terminations			
CAB 1 (STA. 387+00 on I-35/80 SB)	13-16	CAB ART DMS 2	19-22	Bi-directional		
CAB ART DMS 2	1-12			Unidirectional		
	13-16	CAB ART DMS 1	19-22	Bi-directional		
	17-24			Unidirectional		
CAB ART DMS 1	1-12			Unidirectional		
	13-16	CAB 2	19-22	Bi-directional		
	17-24			Unidirectional		

SPlice DIAGRAMS LEGEND	
FIBER STRAND	
JUMPER (BY OTHERS)	
FIBER CONTINUATION	
JUMPER CONTINUATION (BY OTHERS)	
EXISTING SPLICE	
PROPOSED SPLICE	
EXISTING TERMINATION	
PROPOSED TERMINATION	
ACTIVE FIBER	TEXT
DARK FIBER	TEXT

LISTING OF FIBER EQUIPMENT					
Cabinet / Handhole Number	Fiber Optic Splice (with protector sleeves)	UPC/SC Factory Terminated Fiber Connector and Pigtails (include splice and protector sleeves)	Fiber Optic 72 Splice Tray	Single Panel Housing	6 Duplex SC Connector Adapter Panel
HH2-3E	12		1		
CAB-ART-DMS-1		24		2	2
CAB-ART-DMS-2		24		2	2
Total	12	48	1	4	4

LISTING OF SPLICE DIAGRAMS				
Cabinet / Handhole Number	Existing / Proposed	Location Description	Plan Sheet Number	Splice Sheet Number
HH2-3E	EXISTING	SE Corner of Hickman Road and I-35/I-80	N.11	U.02
HH2-3E	PROPOSED	SE Corner of Hickman Road and I-35/I-80	N.11	U.03
CAB-ART-DMS-1	PROPOSED	Hickman Road West of I-35/I-80	N.10	U.04
CAB-ART-DMS-2	PROPOSED	Hickman Road East of I-35/I-80	N.12	U.05

IOWA DOT - POLK COUNTY
Hickman Road West of I-35/80 (ART DMS1)
ITS Cabinet Terminations
See Sheet N.10
Terminations 24



IOWA DOT - POLK COUNTY
Hickman Road East of I-35/80 (ART DMS2)
ITS Cabinet Terminations
See Sheet N.12
Terminations 24

