

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
* A.1	Title Sheet
* A.2	Location Map Sheet
C Sheets	Quantities and General Information
C.1 - 2	Estimated Project Quantities and Reference Notes
C.3 - 4	Tabulations
P Sheets	Lighting Layout Sheets
* P.1 - 4	Highway Lighting Layout
P.5	Highway Lighting Details
	* Color Plan Sheets



PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
WRIGHT COUNTY
Lighting

IA 3 at IA 17 Intersection W of Goldfield
and US 69 Intersection E of Clarion

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



REVISIONS

PROJECT IDENTIFICATION NUMBER	TOTAL
	11
25-99-003-040	
PROJECT NUMBER	
NHSN-003-4(052)--2R-99	
R.O.W. PROJECT NUMBER	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Lane E. Ingram	Primary 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

Printed or Typed Name

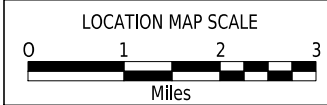
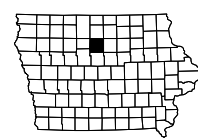
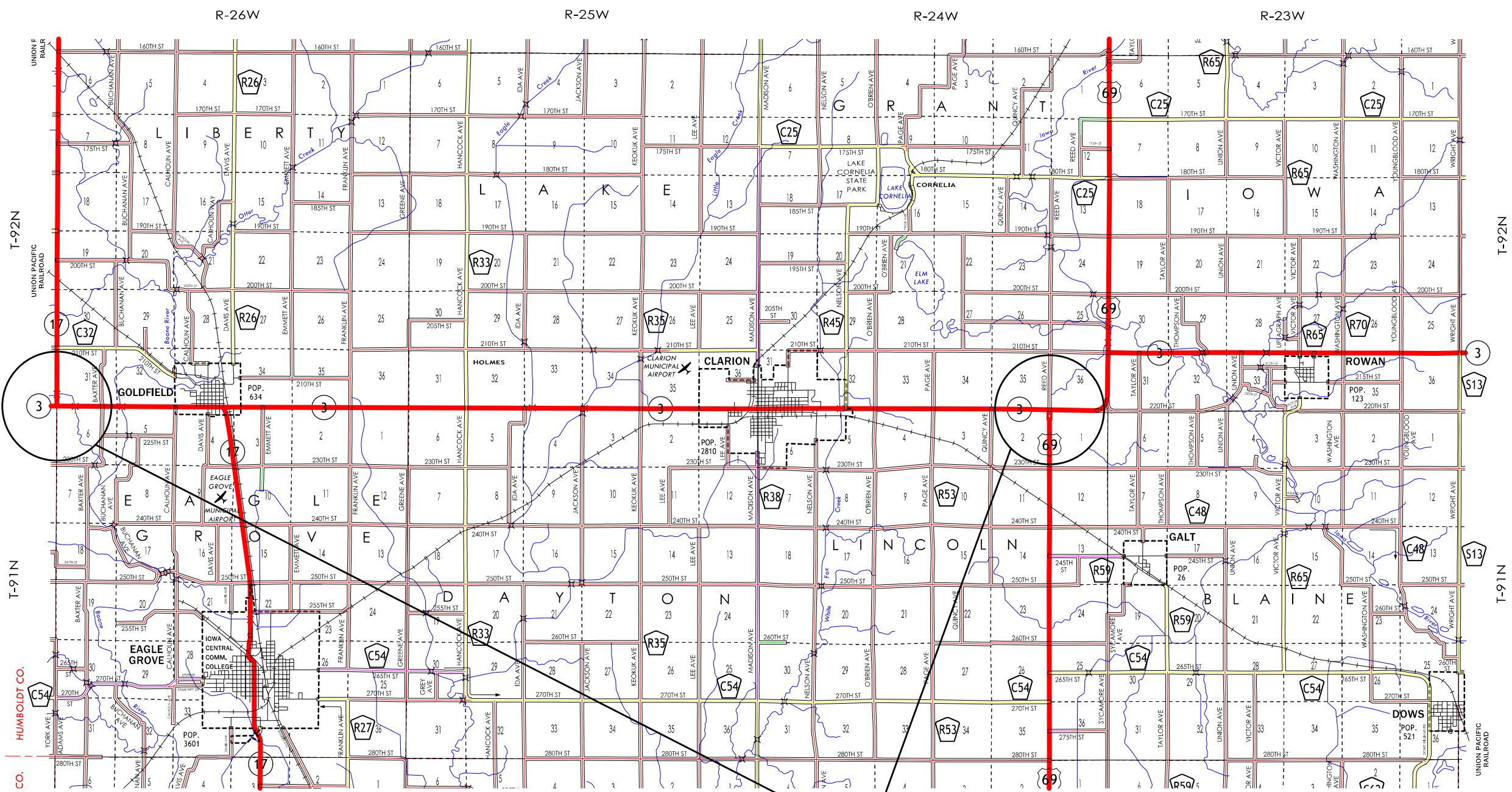
Lane E. Ingram

My license renewal date is December 31,

2026

Pages or sheets covered by this seal:

A.1, A.2, C.1-C.4, and P.1-P.5



PROJECT LOCATIONS

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Lighting :

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Lighting	
1	2401-6745359	REMOVAL OF CONCRETE FOUNDATIONS OF LIGHT POLES	EACH	6	Remove concrete foundations of poles to be removed to 2 foot below new finished grade and backfill with dirt at locations shown on P.1 and P.3. Disposal of construction material wastes shall comply with applicable State and local waste disposal regulations. If there is a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply. METHOD OF MEASUREMENT: The engineer will count the number of concrete foundations removed. BASIS OF PAYMENT: The contractor will be paid the contract unit price for each concrete foundation removed. This payment shall be considered full compensation for furnishing all labor, equipment and materials required for removing existing foundations as specified.
2	2401-6745765	REMOVAL OF LIGHT POLES	EACH	5	Remove existing light poles, bases, mast-arms, luminaires, associated hardware and all other miscellaneous removed materials shall be disposed of in compliance with the applicable State and local waste disposal regulations. In case of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply. NOTE: Pole at Sta.948+30 on Sheet P.1 has been knocked down and removed at time of site walk-down. METHOD OF MEASUREMENT: The engineer will verify all materials have been removed. BASIS OF PAYMENT: The contractor will be paid the contract unit price for removal. This payment shall be considered full compensation for furnishing all labor and equipment to remove the materials, as specified.
3	2401-6750001	REMOVALS, AS PER PLAN	LS	1	Remove existing control cabinets, handholes, cables, conduit (where exposed) and other existing parts as applicable to this project. All removed materials shall be disposed of in compliance with the applicable state and local waste disposal regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply. METHOD OF MEASUREMENT: The Engineer will verify that all materials have been removed. BASIS OF PAYMENT: The Contractor will be paid the contract unit price for removal. This payment shall be considered full compensation for furnishing all labor and equipment to remove the materials, as specified.
4	2523-0000100	LIGHTING POLES	EACH	8	Provide and install Lighting Poles as per Standard Road Plans, Standard Specifications, and as detailed on the P-Sheets. Refer to Tab 108-11A, Highway Lighting Data, for additional information regarding light poles and luminaires.
5	2523-0000200	ELECTRICAL CIRCUITS	LF	1,241	Bid to include 600-volt fuses at 3 amperes for luminaire supply (L-1 connectors) and 10 amperes for tap circuit protection (Y-1 connectors) located in the junction boxes or handholes. Included are (6) type Y-1 connectors, (2) type Y-3 connectors, (10) type L-1 connectors, and (8) type L-2 connectors. L-2 connectors in circuits with conductor sizes that do not fit standard connector to be split bolt connectors with waterproof covering. Electrical circuit length is calculated from plan dimensions as the linear, one- way length of both new and existing embedded conduits. No allowance has been added to this quantity. Allowances have been added to all wire and cable quantities listed in Tab 108-12.
6	2523-0000310	HANDHOLES AND JUNCTION BOXES	EACH	3	All handholes shall be Standard Road Plan LI-103, Type I.
7	2523-0000400	CONTROL CABINET	EACH	2	Each control cabinet shall be constructed per Standard Road Plan LI-151, Standard Specifications for pole-mounted control cabinets, and modified as shown on drawings. Also refer to the P Sheets for additional information. Method of measurement will be by count of each control cabinet installed. Payment is full compensation for furnishing all labor, equipment, and materials required to install and commission each control cabinet including concrete equipment pad.
8	2528-8445110	TRAFFIC CONTROL	LS	1	Includes all traffic control devices and equipment necessary to maintain traffic in accordance with the Manual on Uniform Traffic Control Devices (MUTCD). See Traffic Control Plan, Tab 108-23A.

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Lighting	
9	2528-8445113	FLAGGERS	EACH	0	See Proposal.
10	2533-4980005	MOBILIZATION	LS	1	--

108_11A
8/15/22

HIGHWAY LIGHTING DATA	
ELECTRICAL SERVICE:	
Midland Power Cooperative provides secondary service (120/240 volts, single-phase) for the existing service IA 3 at IA 17 Intersection. It shall be the contractor's responsibility to make the necessary contacts with the utility company regarding the electrical service.	
NOTE: Service is unmetered and will remain unmetered.	
Contact information is:	
Midland Power Cooperative: Chad Reinholdt; (515) 370-1485	
Prairie Energy Cooperative provides secondary service (120/240 volts, single phase) for the existing service at US 69 and IA 3 Intersection. It shall be the contractor's responsibility to make the necessary contacts with the utility company regarding the electrical service.	
Contact information is:	
Prairie Energy Cooperative: Steve Jackson; sjackson@prairieenergy.coop; (515) 293-1359	
ROADWAY LUMINAIRES:	
Contractor shall be responsible for supplying and installing light emitting diode (LED) luminaires as described. LED luminaires shall be Cooper Lighting (Archeon Contemporary Size 3 'ARCH3-120-740-U-T2R-AP-10K-PR'), American Electric Lighting (Autobahn 'ATB0 P305 R2 MVOLT 4K'), or Lumec (Roadfocus 'RFM-150W60LED-4K-G2-R2M-UNV-GY3'). All luminaires shall be provided with 7-pin photocontrol receptacle and shorting cap (not currently listed in order numbers).	
No substitutes will be allowed.	

			105_04 4/21/26
<div>STANDARDS</div> <div>The following Standards apply to construction work on this project.</div>			
Number	Date	Title	
LI-101	10/21/2014	Light Pole Location	
LI-103	10/21/2025	Conduit and Precast Handholes	
LI-141	10/21/2014	Electrical Installation (Roadway Ducts)	
LI-142	4/21/2015	Electrical Installation (Bases)	
LI-151	10/21/2014	Control Cabinet (Pole-Mounted)	
LI-201	4/18/2017	Light Pole Foundation	
LI-210	10/21/2014	Transformer Base (Cast Aluminum)	
TC-1	10/15/2019	Work Not Affecting Traffic (Two-Lane or Multi-Lane)	
TC-202	4/18/2023	Work Within 15 ft of Traveled Way	
TC-213	4/18/2023	Lane Closure with Flaggers	

108_12
8/15/22

WIRE, CABLE AND CONNECTORS																				
Line No.	Circuit Number	Connector Type	Quantity (EA)	Connector Type	Quantity (EA)	Connector Type	Quantity (EA)	Connector Type	Quantity (EA)	Phase Line Size (AWG)	Quantity (LF)	Phase Line Size (AWG)	Quantity (LF)	Phase Line Size (AWG)	Quantity (LF)	Phase Line Size (AWG)	Quantity (LF)	Ground Size (AWG)	Quantity (LF)	Remarks
1.0																				
2.0	A-0											#2	30.0					#6	15.0	
3.0	A-1					L-1	2			#10	150.0					#8	230.0	#6	135.0	
4.0	A-2	Y-1	2			L-1	2	L-2	2	#10	300.0					#8	814.0	#6	437.0	
5.0																				
6.0	E-00											#2	40.0					#6	20.0	
7.0	E-0											#2	30.0					#6	15.0	
8.0	E-1	Y-1	2			L-1	2	L-2	2	#10	300.0					#8	514.0	#6	287.0	
9.0	E-2	Y-1	2	Y-3	2	L-1	4	L-2	4	#10	430.0			#6	1454.0			#6	622.0	

108_02 10/24/24						ELECTRICAL DUCTS	
Line No.	Location	Conduit Type	Diameter (IN)	Length (FT)	Remarks		
1.0							
2.0	Control Cab A	RGS	2.0	30.0	Top Riser		
3.0	Control Cab A	RGS	2.0	30.0	Bottom Riser		
4.0	Circuit A-1	Plastic	2.0	65.0	Circuit Ducts		
5.0	Circuit A-2	Plastic	2.0	258.0	Circuit Ducts		
6.0	STA 725+60	Rigid PVC	2.0	54.0	Rdway Crossing IA 3		
7.0							
8.0	Control Cab E	RGS	2.0	40.0	Top Riser		
9.0	Control Cab E	RGS	2.0	30.0	Bottom Riser		
10.0	Circuit E-1	Plastic	2.0	197.0	Circuit Ducts		
11.0	Circuit E-2	Plastic	2.0	285.0	Circuit Ducts		
12.0	977+11	Rigid PVC	2.0	70.0	Rdway Crossing 3rd Ave		
13.0		Rigid PVC	2.0	40.0	Rdway Crossing IA 3/US69		
14.0	630+20	Rigid PVC	2.0	85.0	Rdway Crossing US69		
15.0	630+20	Rigid PVC	2.0	57.0	Rdway Crossing 69/3		

108_23A 8/15/22		TRAFFIC CONTROL PLAN	
		1. For lighting installations performed on roadways otherwise open to traffic, contractor shall maintain traffic on such roadways at all times.	
		2. Shoulder Closures will be allowed during non-peak hours. Peak Hours are 6:30 AM to 8:30 AM and 3:30 PM to 6 PM, Monday thru Friday.	
		3. Traffic control on this project shall be in accordance with the Standard Road Plans included in Tabulation 105-4.	
		4. Traffic control on this project shall be in accordance with the TC series of Standard Road Plans listed in Tab. 105-4. All traffic control devices and equipment necessary to maintain traffic in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).	

LIGHTING INSTALLATIONS								108_01 8/15/22
Line No.	Location No.	Station	LI-101 Type	A	E (FT)	LI-201 Type	Remarks	
1.0	A101	948+30.00	1	4	15.0	A	T-Base/LI-210	
2.0	A201	723+45.00	1	<4	15.0	A	T-Base/LI-210	
3.0	A202	725+55.00	1	<4	11.0	A	T-Base/LI-210	
4.0								
5.0	E101	977+11.00	1	12	14.0	A	T-Base/LI-210	
6.0	E102	631+92.00	1	4	9.5	A	T-Base/LI-210	
7.0	E201	630+20.00	2	-	20.0	A	T-Base/LI-210	
8.0	E202	978+50.00	2	-	4.0	A	T-Base/LI-210	
9.0	E203	980+61.00	1	4	13.5	A	T-Base/LI-211	

110_16
8/15/22

REMOVAL OF LIGHT POLES AND CONCRETE FOOTINGS						
Line No.	No.	Station	Side	Offset (FT)	Removal Type	Remarks
1.0		948+30.00			Concrete Footing	See P.1 and Removal Items on C.1
2.0		723+65.00			Light Pole and Concrete Footing	See P.1 and Removal Items on C.1
3.0		725+45.00			Light Pole and Concrete Footing	See P.1 and Removal Items on C.1
4.0						
5.0					Light Pole and Concrete Footing	See P.3 and Removal Items on C.1
6.0					Light Pole and Concrete Footing	See P.3 and Removal Items on C.1
7.0					Light Pole and Concrete Footing	See P.3 and Removal Items on C.1

232_03A
9/28/22

EROSION CONTROL (RURAL SEEDING)	
<p>Area to be seeded is estimated to be less than 1 acre. If the contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,B of the Standard Specifications.</p> <p>Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed, fertilizer, and mulch on the disturbed area lying 8 feet adjacent to shoulder and median as follows:</p> <p>Place seed and fertilize according to the requirements of Article 2601.03,C,3 and Section 4169 of the Standard Specifications.</p> <p>Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.</p> <p>Preparing the seedbed, furnishing and applying seed, fertilizer, and mulch are all incidental to mobilization and will not be paid for separately.</p>	

232_03C
8/28/24

EROSION CONTROL (NATIVE GRASS SEEDING)

Area to be seeded is estimated to be less than 1 acre. If the Contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,B of the Standard Specifications.

Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed and mulch on the disturbed area lying 8 feet or more beyond the shoulder as follows:

SEED MIX:

Big bluestem (<i>Andropogon geradii</i>)	6 lbs. PLS/Acre (7.0 kg/ha)
Indiangrass (<i>Sorghastrum nutans</i>)	6 lbs. PLS/Acre (7.0 kg/ha)
Little bluestem (<i>Schizachyrium scoparium</i>)	6 lbs. PLS/Acre (7.0 kg/ha)
Partridge Pea (<i>Chamaecrista fasciculata</i>)	4 lbs. PLS/Acre (4.5 kg/ha)
Sideoats grama (<i>Bouteloua curtipendula</i>)	4 lbs. PLS/Acre (4.5 kg/ha)
Canada wildrye (<i>Elymus canadensis</i>)	2 lbs. PLS/Acre (2.2 kg/ha)
Switchgrass (<i>Panicum virgatum</i>)	1 lbs. PLS/Acre (1.1 kg/ha)
Oats (<i>Avena sativa</i>)	32 lbs./Acre (36.0 kg/ha)


Furnish Big bluestem, Indiangrass, Canada wildrye and Little bluestem that is debarred or equal to facilitate the application of seed.

Furnish seed certified as Source Identified Class (Yellow Tag) Source G0-Iowa. Oats are excluded from this requirement. Place seed according to the requirements of Article 4169.02 of the Standard Specifications.

Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

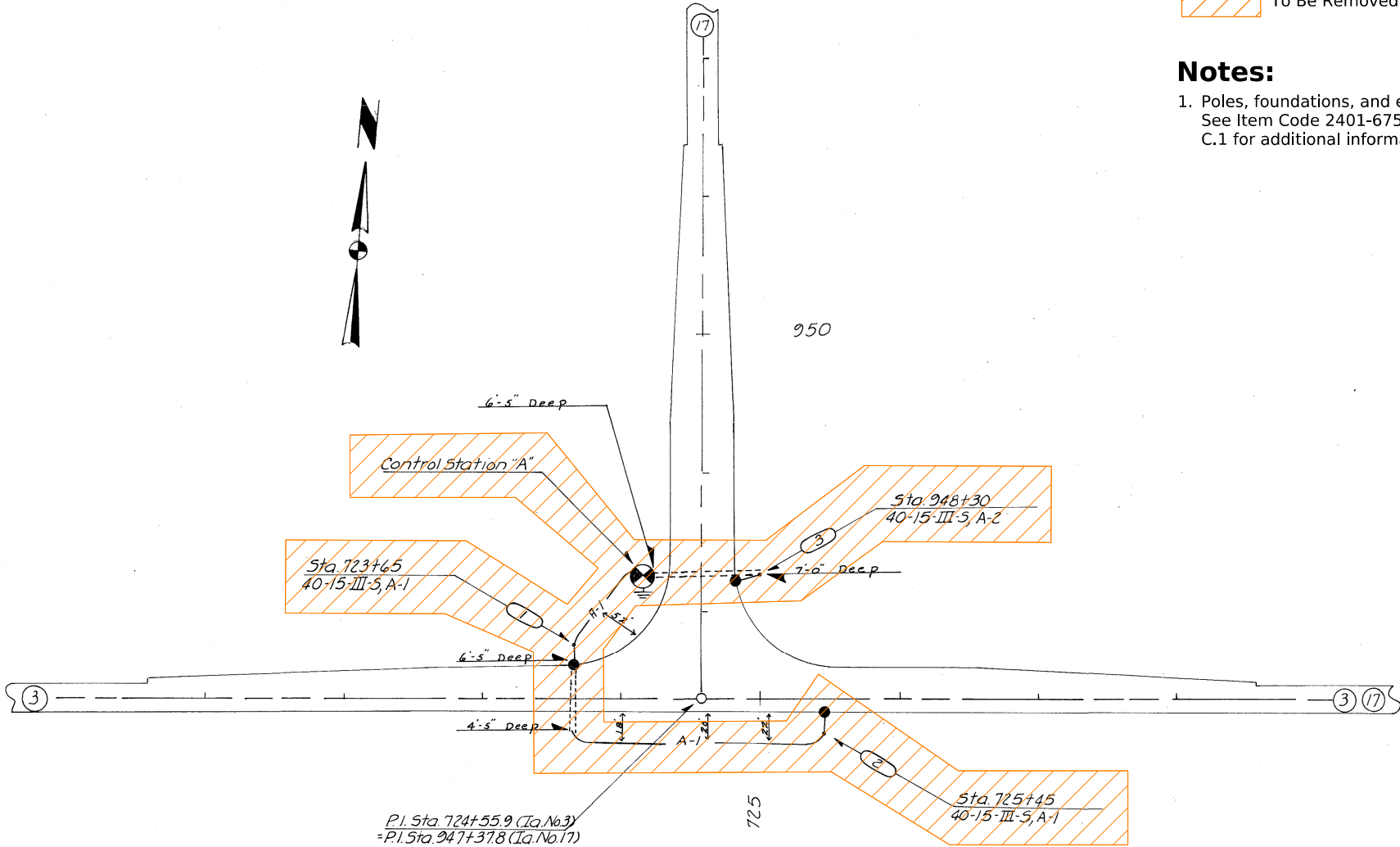
Preparing the seedbed, furnishing and applying seed and mulch are incidental to mobilization and will not be paid for separately.

Legend:

 To Be Removed

Notes:

- 1. Poles, foundations, and electrical components to be demolished. See Item Code 2401-6750001 'REMOVALS, AS PER PLAN' on Sheet C.1 for additional information.



HIGHWAY LIGHTING LAYOUT
INTERSECTION OF
IOWA NO. 3 & IOWA NO. 17 (WEST)

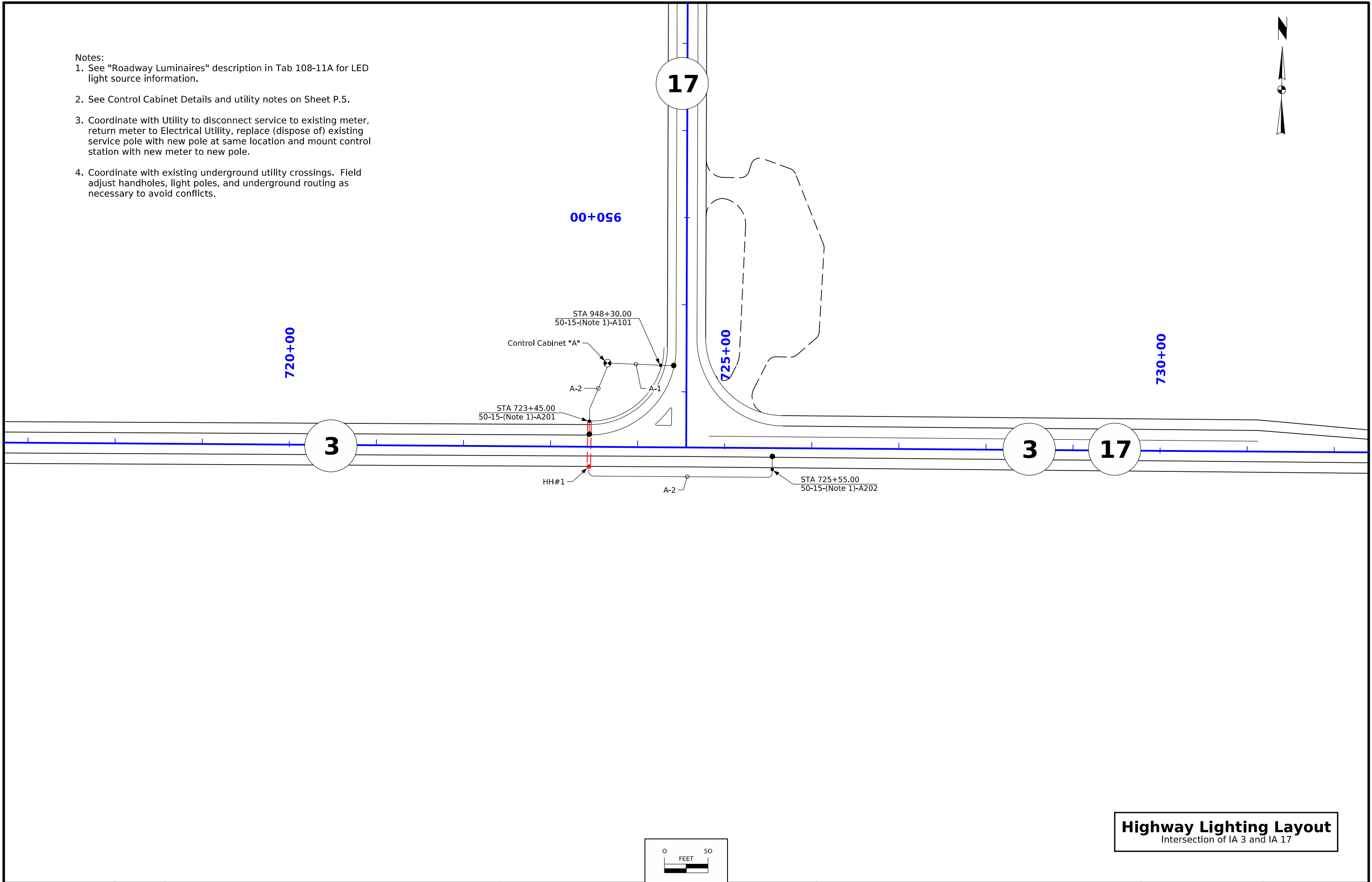
Lighting Removals

Note: Drawing is included from old plan set. Wiring shown may not be accurate.

FILE NO.	ENGLISH	DESIGN TEAM Stanley Consultants, Inc.	WRIGHT COUNTY	PROJECT NUMBER NHSN-003-4(052)--2R-99	SHEET NUMBER P.1
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- Notes:
- 1. See "Roadway Luminaires" description in Tab 108-11A for LED light source information.
 - 2. See Control Cabinet Details and utility notes on Sheet P.5.
 - 3. Coordinate with Utility to disconnect service to existing meter, return meter to Electrical Utility, replace (dispose of) existing service pole with new pole at same location and mount control station with new meter to new pole.
 - 4. Coordinate with existing underground utility crossings. Field adjust handholes, light poles, and underground routing as necessary to avoid conflicts.




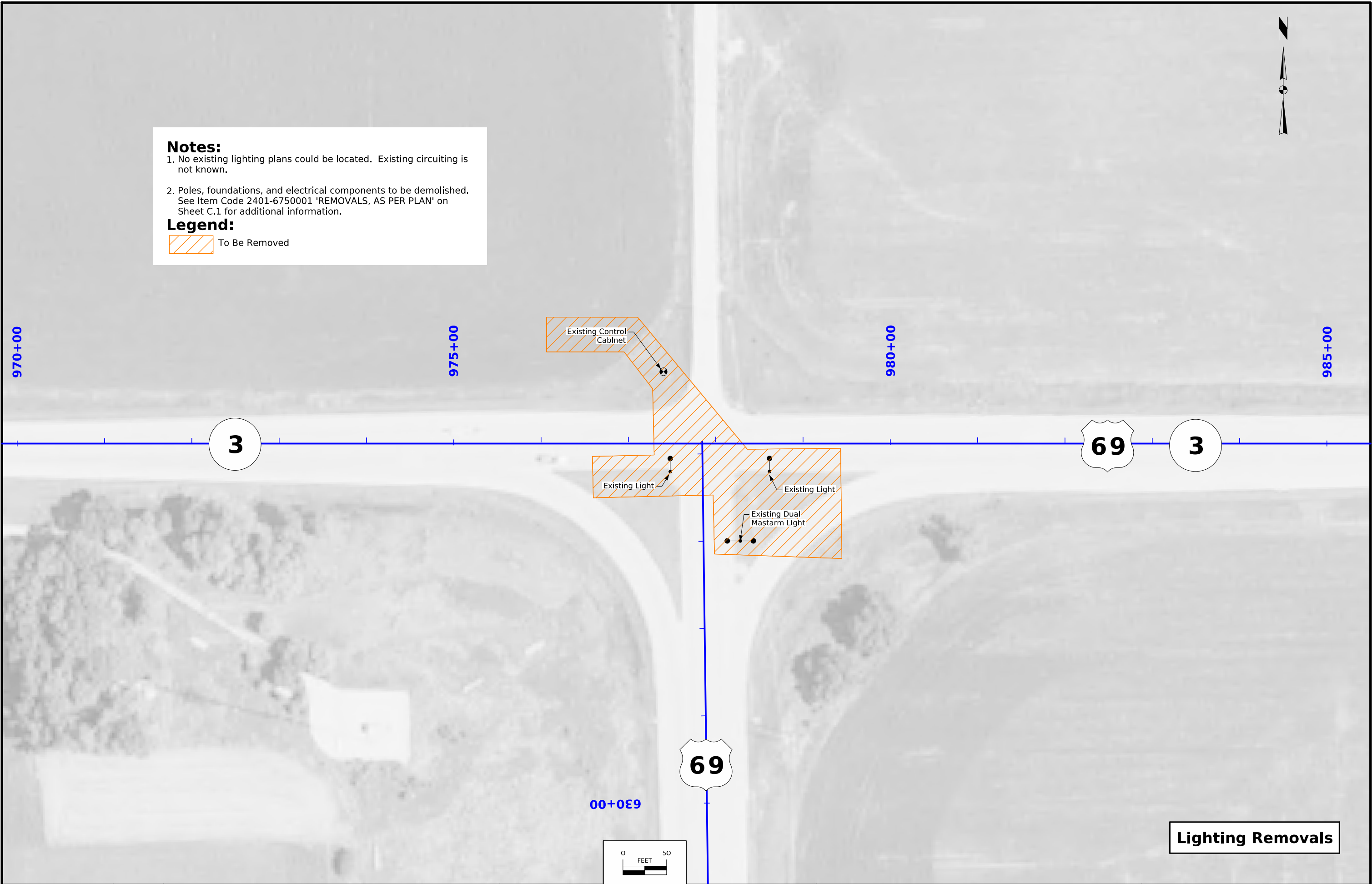
Highway Lighting Layout
Intersection of IA 3 and IA 17

Notes:

- 1. No existing lighting plans could be located. Existing circuiting is not known.
- 2. Poles, foundations, and electrical components to be demolished. See Item Code 2401-6750001 'REMOVALS, AS PER PLAN' on Sheet C.1 for additional information.

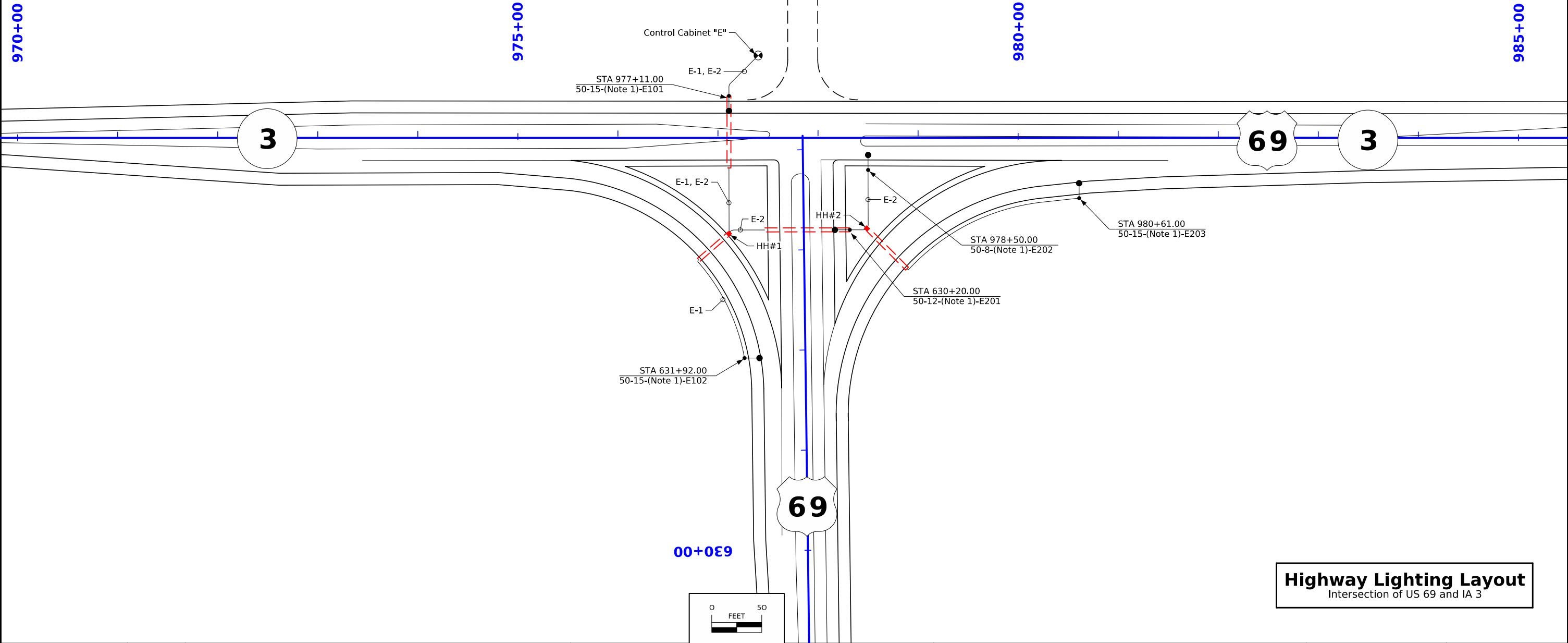
Legend:

 To Be Removed

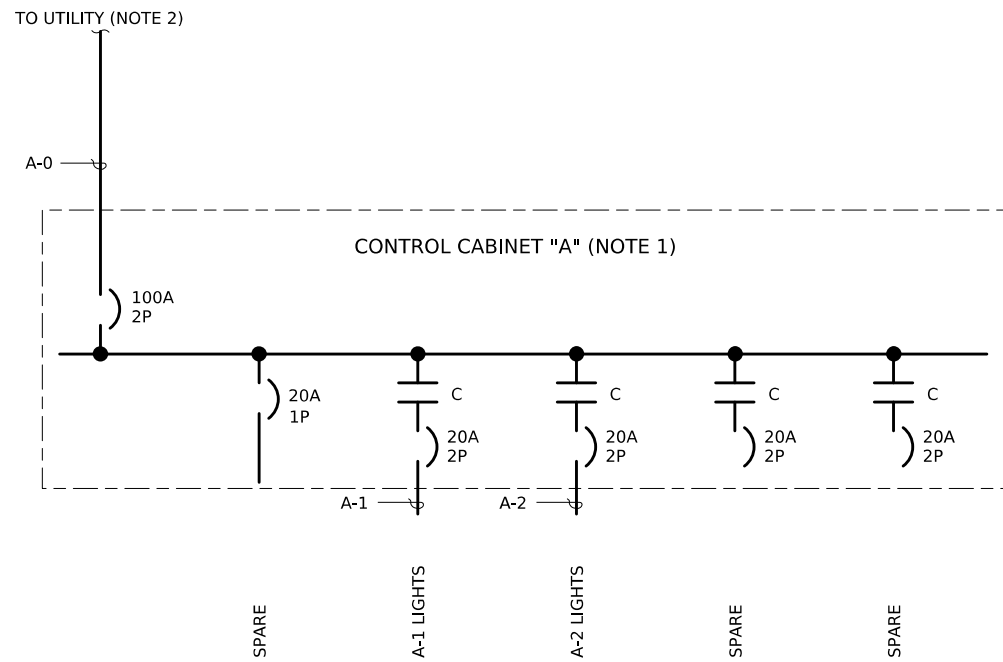


Notes:

- 1. See "Roadway Luminaires" description in Tab 108-11A for LED light source information.
- 2. See Control Cabinet Details and utility notes on Sheet P.5. Coordinate final location of Control Cabinet with Utility and Engineer.
- 3. Coordinate with existing underground utility crossings. Field adjust handholes, light poles, and underground routing as necessary to avoid conflicts.

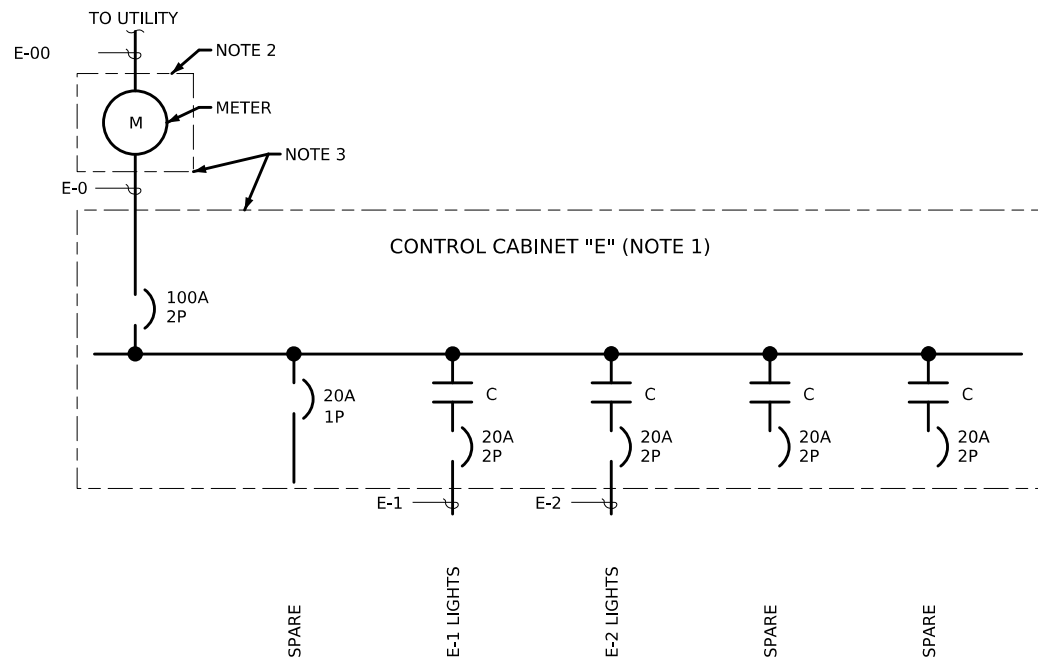


Highway Lighting Layout
Intersection of US 69 and IA 3



CABINET "A" ONE-LINE DIAGRAM

- NOTE:
- 1. Existing pole-mounted Control Cabinet to be replaced with new pole-mounted Control Cabinet based on LI-151 with photocell, contactor, and as shown on drawings. coordinate final location of control cabinet with Utility and Engineer.
 - 2. Existing service is unmetered and will continue to be unmetered.



CABINET "E" ONE-LINE DIAGRAM

- NOTE:
- 1. Existing pole-mounted Control Cabinet to be replaced with new pole-mounted Control Cabinet based on LI-151 with photocell, contactor, and as shown on drawings. Coordinate final location of control cabinet with Utility and Engineer.
 - 2. Meter and meter socket by Prairie Energy Cooperative. Installation by Contractor. Coordinate final location of meter socket with Utility and Engineer.
 - 3. Install Control Cabinet per NFPA 70 for maximum height for an electrical disconnect. Replace cable and conduit on the pole.