

CLAY COUNTY
LIGHTING
HSIPX-018-2(144)--3L-21

CLAY COUNTY

LETTING DATE
9/15/2026



PLANS OF PROPOSED IMPROVEMENT ON THE
STATE HIGHWAY ROAD SYSTEM
CLAY COUNTY

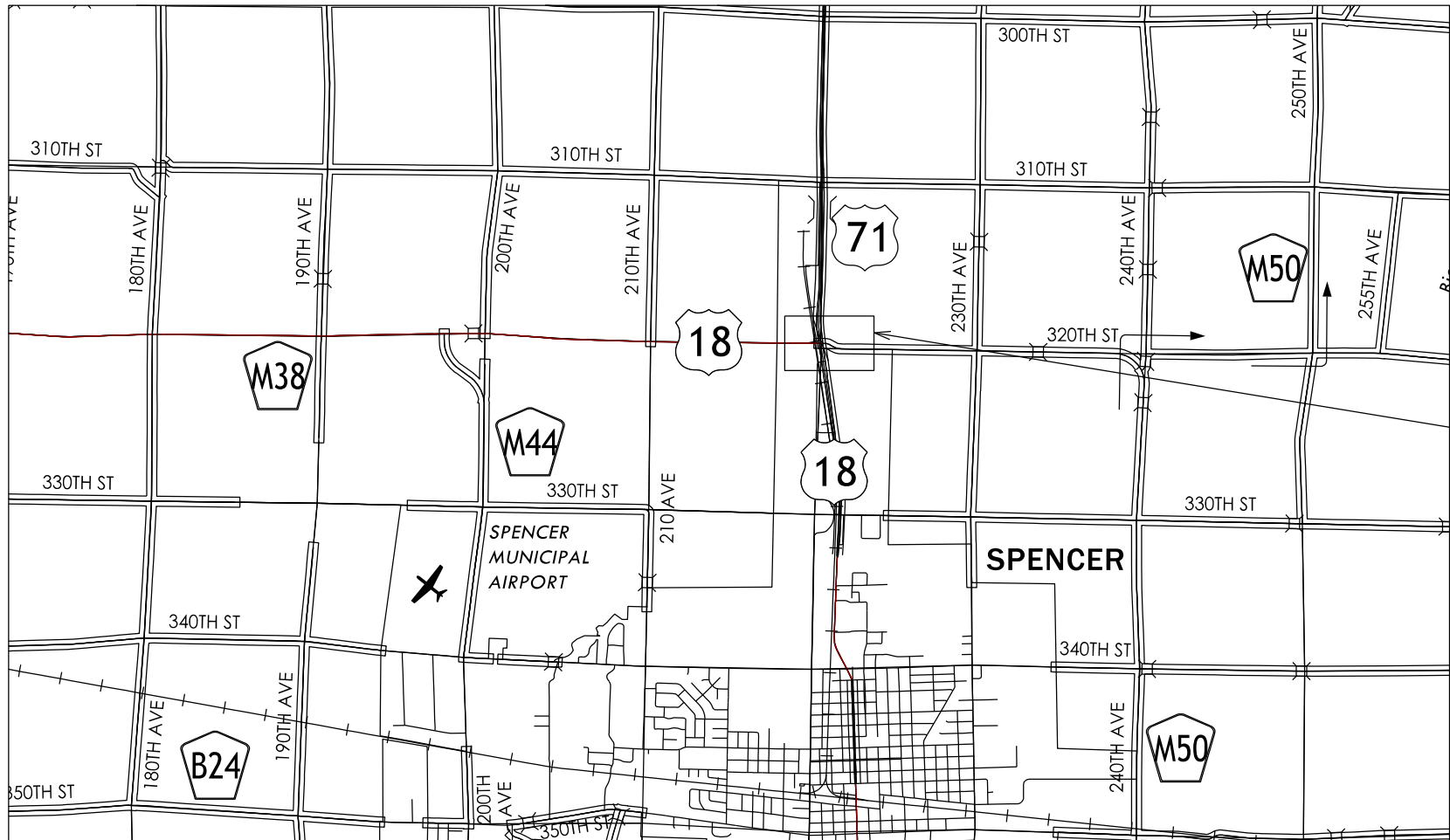
Lighting

N US 71 Intersection in Spencer

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



PROJECT LOCATION

REVISIONS

TOTAL

6

PROJECT IDENTIFICATION NUMBER

23-21-018-020

PROJECT NUMBER

HSIPX-018-2(144)--3L-21

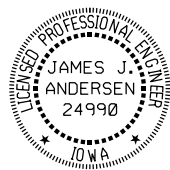
R.O.W. PROJECT NUMBER

NHSN-018-2(145)--2R-21

INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	Title Sheet
A.1	Title Page
C Sheets	Quantities and General Information
C.1	Estimated Quantities, and Reference Notes
C.2	Tabulations
J Sheets	Traffic Control Plan
J.1	Traffic Control Plan
P Sheets	Lighting Plan
P.1	Lighting Plan
U Sheets	Lighting Detail Sheets
U.1	One-Line Diagrams

LIGHTING 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
James J. Andersen

7/2/2026

Printed or Typed Name

My license renewal date is December 31, 2026

Pages or sheets covered by this seal:

A.1, C.1-2, J.1, P.1, U.1

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Lighting Items : Lighting Items

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Lighting Items	
1	2401-6745356	REMOVAL OF CONCRETE FOOTINGS OF LIGHT POLES	EACH	5	Refer to plan sheets and Tab 110_16 for locations.
2	2401-6745765	REMOVAL OF LIGHT POLES	EACH	5	Includes the removal of 5 poles and bases. Refer to plan sheets and Tab 110_16 for locations. All materials removed shall become the property of the Contractor. Bases shall be removed a minimum of 1.0 foot below existing ground. METHOD OF MEASUREMENT: The engineer will count the number of light poles removed. BASIS OF PAYMENT: The contractor shall be paid the contract unit price for each light pole assembly removed.
3	2401-6750001	REMOVALS, AS PER PLAN	LS	1	Includes all work for removal and off-site disposal of the existing lighting circuit breaker cabinet and concrete foundation. Removal of scheduled items shall be in accordance with Section 2401, of the Standard Specifications. Any damage to material not to be removed shall be the responsibility of the Contractor and repaired at no extra cost to the state.
4	2523-0000100	LIGHTING POLES	EACH	10	Bid to include LED fixtures as listed in 'Roadway Luminaires' description in Tab 108_11A. Bid to include transformer bases and poles with mounting heights and mastarm lengths as shown on the lighting plans.
5	2523-0000200	ELECTRICAL CIRCUITS	LF	1,688	Bid to include 600-volt fuses at 3 amperes for luminaire supply (L-1 connectors) and 5 amperes for tap circuit protection (Y-1 connectors) located in the junction boxes or handholes. Included are (4) type Y-1 connectors, (2) type Y-2 connectors, (10) type L-1 connectors, and (12) 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 to be LI-103, Type II.
7	2523-0000400	CONTROL CABINET	EACH	1	Control Cabinet to be based on LI-151, with photocell, contactor, and as shown on drawings.
8	2526-8285040	CONSTRUCTION SURVEY, LOCATION SURVEY	LS	1	Refer to TC-283 for traffic control layout.
9	2526-9000000	GEOSPATIAL MAPPING OF SUB-SURFACE AND UNDERGROUND UTILITIES	LF	1,688	Refer to DS-23045.
10	2528-8445110	TRAFFIC CONTROL	LS	1	--
11	2533-4980005	MOBILIZATION	LS	1	

100_01D 8/15/22									
PROJECT DESCRIPTION									
This project will construct new intersection lighting at the US 71 and US 18 intersection north of Spencer. This project includes the removal of five existing light pole and foundations, the removal of one lighting circuit breaker cabinet, and the installation of new light poles, electrical control cabinet, conduits, and handholes. The project is tied to the (142) roadway project that is constructing a roundabout at this intersection.									

108_11A 8/15/22									
HIGHWAY LIGHTING DATA									
Electrical Service: Utilize existing secondary service (120/240 volts, single phase) for the new service. It shall be the contractor's responsibility to make the necessary contacts with the utility company regarding this electrical service as needed. Contact information is: Alliant Energy: Tyler Thoeny, TylerThoeny@alliantenergy.com, (712) 336-6011 Roadway Luminaires: Contractor shall be responsible for supplying and installing light emitting diode (LED) luminaires as described. LED luminaires shall be the following: Type III distribution, gray/silver finish: Cooper Lighting (NVN Navion 'NVN-SA3B-740-U-T3R'), American Electric Lighting (Autobahn 'ATB0-P304-MVOLT-R3-4K'), or GE/Current (Evolve 'ERL2-0-18-C5-40'). No substitutes will be allowed.									

105_04 4/21/26									
STANDARDS									
The following Standards apply to construction work on this project.									
Number	Date	Title							
LI-101	10-21-14	Light Pole Location							
LI-103	10-21-25	Conduit and Precast Handholes							
LI-141	10-21-14	Electrical Installation (Roadway Ducts)							
LI-142	04-21-15	Electrical Installation (Bases)							
LI-151	10-21-14	Control Cabinet (Pole-Mounted)							
LI-201	04-21-26	Light Pole Foundation							
LI-211	10-20-15	Slip-Base for Light Poles							
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)							
TC-202	04-18-23	Work Within 15 ft of Traveled Way							
TC-283	04-18-23	Surveying Operations							

110_16 8/15/22									
REMOVAL OF LIGHT POLES AND CONCRETE FOOTINGS									
No.	Station	Side	Offset (FT)	Removal Type	Remarks				
A301	4058+18.00	Right	38.6	Light Pole and Concrete Footing					
A302	4053+06.00	Left	38.1	Light Pole and Concrete Footing					
A303	4055+91.00	Left	117.6	Light Pole and Concrete Footing					
A304	2633+22.00	Left	42.3	Light Pole and Concrete Footing					
A305	4065+23.00	Left	145.4	Light Pole and Concrete Footing					

108_12 8/15/22																			
WIRE, CABLE AND CONNECTORS																			
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
A-0																			
A-1	Y-1	2			L-1	8	L-2	4	#10	650.0					#6	324.0	#6	108.0	
A-2	Y-1	2	Y-2	2	L-1	2	L-2	8	#10	650.0					#8	970.0	#8	485.0	
															#8	2470.0	#8	1235.0	

FILE NO.	ENGLISH	DESIGN TEAM	IOWA DOT/HDR	CLAY COUNTY	PROJECT NUMBER	HSIPX-018-2(144)--3L-21	SHEET NUMBER	C.2
----------	---------	-------------	--------------	-------------	----------------	-------------------------	--------------	-----

108_02 10/24/24				
ELECTRICAL DUCTS				
Location	Conduit Type	Diameter (IN)	Length (FT)	Remarks
Circuit A-0	Plastic	2.0	98.0	Meter Pedestal "AA" to Control Cabinet "A"
Circuit A-1	Plastic	2.0	311.0	Circuits Ducts
Circuit A-2	Plastic	2.0	979.0	Circuits Ducts
Circuit A-1	Rigid Plas	2.0	134.0	Roadway Crossing @ HH #1
Circuit A-2	Rigid Plas	2.0	69.0	Roadway Crossing @ HH #3
Circuit A-2	Rigid Plas	2.0	77.0	Roadway Crossing @ HH #2
	Rigid Plas	2.0	10.0	A-1 Riser at Control Cab "A"
	Rigid Plas	2.0	10.0	A-2 Riser at Control Cab "A"

232_03B 9/28/22									
EROSION CONTROL (URBAN 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, fertilizer, and mulch on the disturbed area as follows: Place seed and fertilize according to the requirements of Article 2601.03,C,4 and Section 4169 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, fertilizer, and mulch are incidental to mobilization and will not be paid for separately.									

232_11 6/21/23									
EROSION CONTROL (STABILIZING CROP 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. If outside of permanent seeding dates in Section 2601 of the Standard Specifications, or if required by a storm water permit, place stabilizing crop, fertilizer, and mulch on the disturbed area as follows: Place seed and fertilize according to the requirements of Article 2601.03,C,1 and Section 4169 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, fertilizer, and mulch are incidental to mobilization and will will not be paid for separately.									

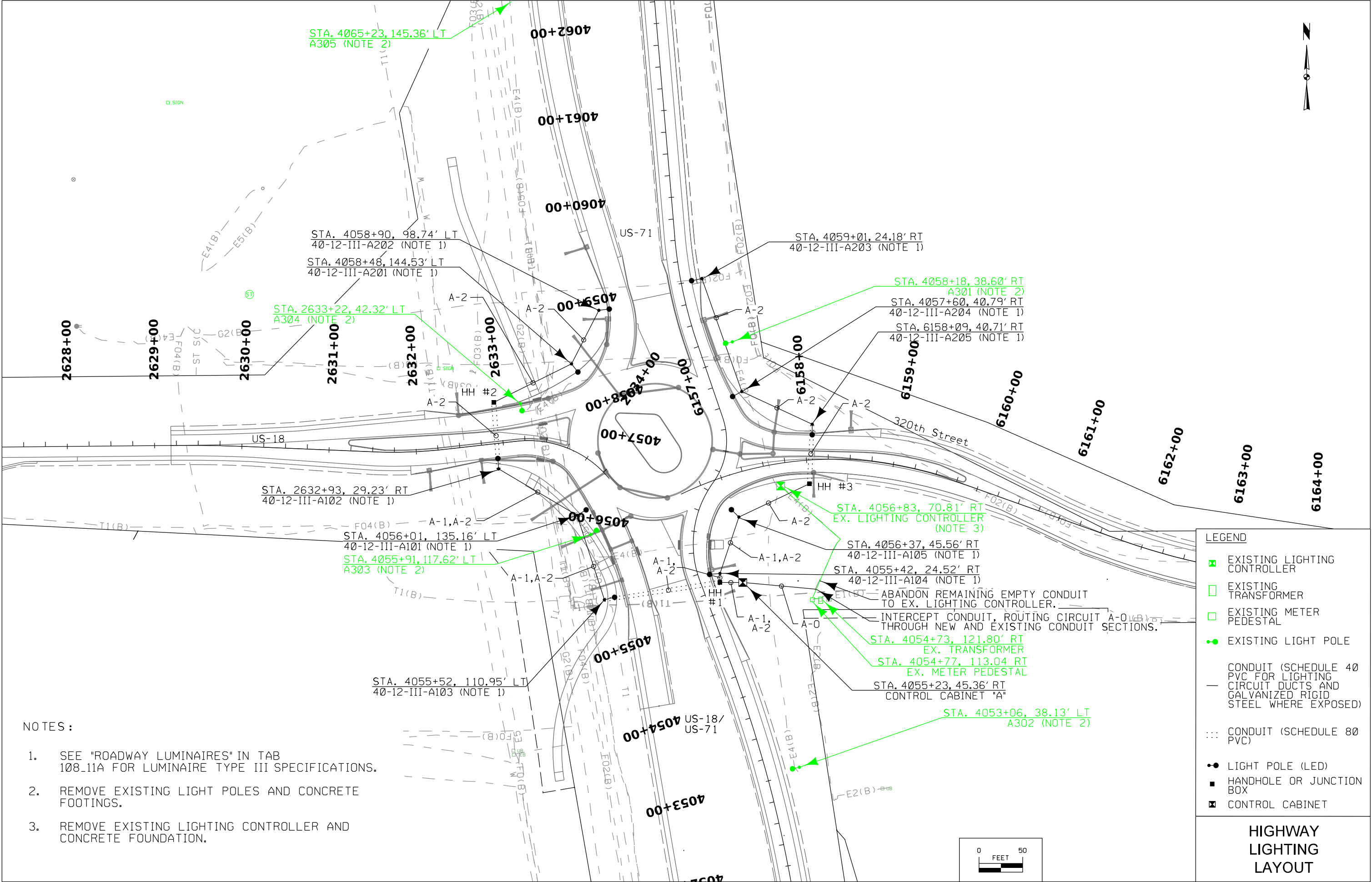
108_01 8/15/22						
LIGHTING INSTALLATIONS						
Location No.	Station	LI-101 Type	A	E (FT)	LI-201 Type	Remarks
A101	4056+01.00	3	4	6.0	A	T-BASE
A102	2632+93.00	3	4	6.0	A	T-BASE
A103	4055+52.00	3	4	6.0	A	T-BASE
A104	4055+42.00	3	4	6.0	A	T-BASE
A105	4056+37.00	3	4	6.0	A	T-BASE
A201	4058+48.00	3	4	6.0	A	T-BASE
A202	4058+90.00	3	4	6.0	A	T-BASE
A203	4059+01.00	3	4	6.0	A	T-BASE
A204	4057+60.00	3	4	6.0	A	T-BASE
A205	6158+09.00	3	4	6.0	A	T-BASE

108-23A
08-01-08

TRAFFIC CONTROL PLAN

SEE GRADE AND PAVE PROJECT HSIPX-018-2(142)--3L-21 FOR TRAFFIC CONTROL INFORMATION.

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	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
				NONE ANTICIPATED				None					



- NOTES :
- SEE "ROADWAY LUMINAIRES" IN TAB 108.11A FOR LUMINAIRE TYPE III SPECIFICATIONS.
 - REMOVE EXISTING LIGHT POLES AND CONCRETE FOOTINGS.
 - REMOVE EXISTING LIGHTING CONTROLLER AND CONCRETE FOUNDATION.

LEGEND

EXISTING LIGHTING CONTROLLER

EXISTING TRANSFORMER

EXISTING METER PEDESTAL

EXISTING LIGHT POLE

CONDUIT (SCHEDULE 40 PVC FOR LIGHTING CIRCUIT DUCTS AND GALVANIZED RIGID STEEL WHERE EXPOSED)

CONDUIT (SCHEDULE 80 PVC)

LIGHT POLE (LED)

HANDHOLE OR JUNCTION BOX

CONTROL CABINET

HIGHWAY LIGHTING LAYOUT

FILE NO.	ENGLISH	DESIGN TEAM	IOWA DOT / HDR	CLAY COUNTY	PROJECT NUMBER	HSIPX-018-2(144)--3L-21	SHEET NUMBER	P.1
SYSTEMTIME	SYSTEMDATE	USERNAME	DGNSPEC					

