LETTING DATE Dec 15, 2026

LIGHTING

IM-080-6(518)202--13-79

POWESHIEK COUNTY

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
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P Sheets	**Lighting Layout Sheets**
P.1	Lighting Layout Sheets
P.2	Lighting Detail Sheets
P.3	As-Built Drawing (For Information Only)

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

POWESHIEK COUNTY

LIGHTING

W of IA 21 to E of IA 21

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

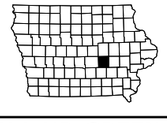
Value Engineering Saves. Refer to Article 1105.13 of the Specifications.

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

REVISIONS

TOTAL 9
PROJECT IDENTIFICATION NUMBER
21-79-080-10
PROJECT NUMBER
IM-080-6(518)202--13-79
R.O.W. PROJECT NUMBER

Scan the QR code or click the link below to leave plan quality feedback and help us improve future projects.



CALEB S. BARDUSON 30641 LICENSED PROFESSIONAL ENGINEER IOWA

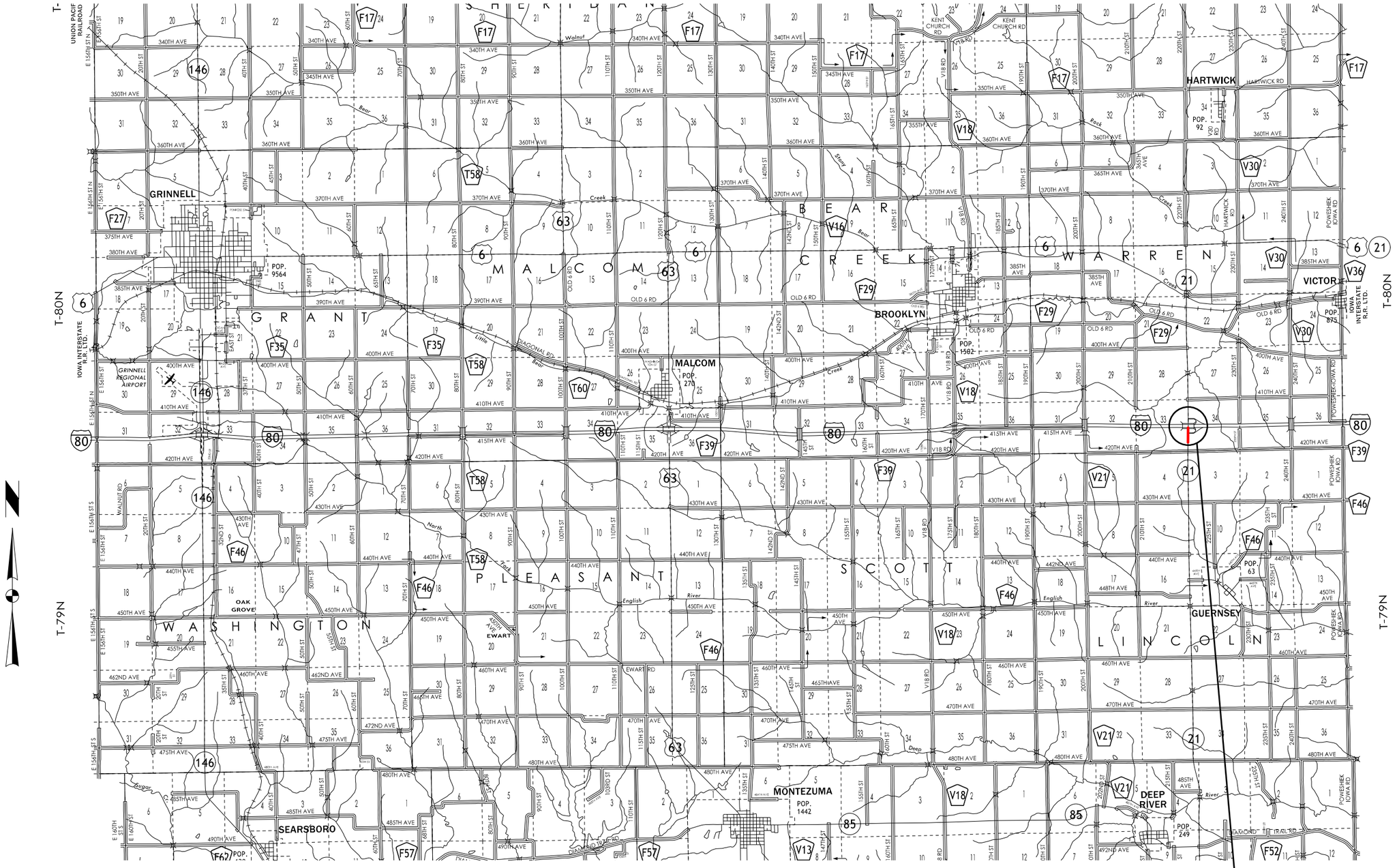
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Caleb Barduson 10/02/2026

CALEB S. BARDUSON, P.E. DATE
License Number: 30641
My license renewal date is December 31, 2027.
Pages or sheets covered by this seal:
A.1-2, C.1-4, P.1-2

FILE NO.	ENGLISH	DESIGN TEAM HERMANN \ HR GREEN	POWESHIEK COUNTY	PROJECT NUMBER IM-080-6(518)202--13-79	SHEET NUMBER A.1

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FILE NO.	ENGLISH	DESIGN TEAM HERMANN \ HR GREEN	POWESHIEK COUNTY	PROJECT NUMBER IM-080-6(518)202--13-79	SHEET NUMBER A.2

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ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Lighting Items : Lighting Bid Items

Division 2 - Lighting Items :

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Lighting Items	Division 2 - Lighting Items	Total	
1	2401-6745359	REMOVAL OF CONCRETE FOUNDATIONS OF LIGHT POLES	EACH	3		3	A. Refer to P Sheets for locations and details. B. This item includes the demolition and disposal of each light pole concrete footing per the plans. C. Method of Measurement: By count of each light pole concrete footing removed. D. Basis of Payment: The contractor will be paid the contract unit price for each light pole concrete footing removed. Payment is full compensation for furnishing all materials, equipment, and labor required to remove each light pole footing and any associated access handhole including waste disposal, backfill of the void, compaction to finished grade, and surface restoration. Protection, splicing, decommissioning, and removal of electric conductors and portions of conduit associated with the footing shall be incidental to the cost of the footing removal.
2	2401-6745765	REMOVAL OF LIGHT POLES	EACH	3		3	A. Refer to the P Sheets for locations and details. B. This item includes the protection and removal of the roadway light pole assembly for salvage to the owner. C. Method of Measurement: By count of each light pole structure removed. D. Basis of Payment: The contractor will be paid the contract unit price for each light pole structure removed. Payment is full compensation for furnishing all materials, equipment, and labor required to protect and remove each light pole assembly for salvage to the owner.
3	2523-0000100	LIGHTING POLES	EACH	3		3	A. Refer to the P Sheets for locations and details. B. Refer to Tab. 108-1 and Tab. 108-11A in the C Sheets. C. Provide and install each light pole assembly per Iowa DOT Standard Specifications and Standard Road Plans LI-101 and LI-201. D. Method of Measurement: By count of each light pole assembly installed. E. Basis of Payment: The contractor will be paid the contract unit price for each light pole assembly installed. Payment is full compensation for furnishing all materials, equipment, and labor required to install each light pole assembly including luminaire, pole, footing, grounding, and associated riser conductors in pole.
4	2523-0000200	ELECTRICAL CIRCUITS	LF	740		740	A. Refer to the P Sheets for locations and details. B. Refer to Tab. 108-2 and Tab. 108-12 in the C Sheets. C. Provide and install Electrical Circuits per Iowa DOT Standard Specifications and Standard Road Plan LI-141. D. Method of Measurement: By count of each lineal foot of electrical circuit installed. E. Basis of Payment: The contractor will be paid the contract unit price for each lineal foot of electrical circuit installed. Payment is full compensation for furnishing all materials, equipment, and labor required to install conduit, fittings, conductors, and splice connectors/terminations including excavation, backfill, and compaction.
5	2523-0000310	HANDHOLES AND JUNCTION BOXES	EACH	2		2	A. Refer to the P Sheets for locations and details. B. Provide and install Handholes/Junction Boxes per Iowa DOT Standard Specifications and Standard Road Plan LI-103.C. Handholes shall be Type I per Standard Road Plan LI-103 unless noted otherwise. C. Basis of Payment: The contractor will be paid the contract unit price for each handhole installed. Payment is full compensation for furnishing all materials, equipment, and labor required to install each handhole including excavation, backfill, compaction, ground rod, and bonding conductors.

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Lighting Items	Division 2 - Lighting Items	Total	
6	2523-0000400	CONTROL CABINET	EACH	1		1	A. Refer to the P Sheets for location and details. B. Provide and install Pole-Mounted Control Cabinet per Iowa DOT Standard Specifications and Standard Road Plan LI-152. C. Refer to Standard Road Plan LI-151 and Standard Specifications. D. Method of Measurement and Basis of Payment per Standard Specifications.
7	2528-8445110	TRAFFIC CONTROL	LS	1		1	A. Includes all traffic control devices and equipment necessary to maintain traffic in accordance with the current Standard Specifications. Refer to Tab 108-23A for additional information.
8	2533-4980005	MOBILIZATION	LS	1		1	- -
9	2555-0000010	DELIVER AND STOCKPILE SALVAGED MATERIALS	LS		1	1	A. Refer to Tab. 110-13 in C Sheets. B. Method of Measurement: By lump sum. C. Basis of Payment: The contractor will be paid the contract lump sum price for transport and delivery of the identified materials/equipment to the designated stockpile location. This shall be considered full compensation for furnishing all labor, equipment, and materials required to coordinate delivery with contact person, load a materials/equipment at the project site, transport, and unload identified materials/equipment at the delivery site."
10	2599-9999005	('EACH' ITEM) REMOVE AND DISPOSE OF POLE MOUNTED LIGHTING CABINET	EACH	1		1	A. Refer to the P Sheets for locations and details. B. This item includes complete removal of pole mounted lighting control cabinet. Salvage is to contractor for recycle / disposal. C. Method of Measurement: By count each of each pole mounted lighting control cabinet removed. D. Basis of Payment: The contractor will be paid the contract unit price for each pole mounted lighting control cabinet removed. Payment includes furnishing all materials, equipment, and labor to remove the existing cabinet. Incidental to and included with the removal of the lighting control cabinet is waste disposal, backfill of the void, compaction to finished grade, surface restoration, and coordination with the utility.
11	2599-9999010	('LUMP SUM' ITEM) DEMOLITION OF ELECTRICAL CIRCUITS	LS	1		1	A. Refer to the P Sheets for locations and details. B. This item includes the removal of unused existing handholes, cutting back of unused existing conduits and conductors, and removal of conductors from conduits as called out on P Sheets. Salvage of removed materials is to the contractor for recycling / disposal. C. Method of Measurement: By lump sum. D. Basis of Payment: The contractor will be paid the contract lump sum price for the removal of unused existing electrical circuits. Payment includes furnishing all materials, equipment, and labor to remove the electrical circuits. Incidental to and included with the removal of the electrical circuits is waste disposal, backfill of voids, compaction to finished grade, and surface restoration.

108-11A
08-01-08

HIGHWAY LIGHTING DATA

The Iowa DOT is performing interchange reconstruction at IA 21 on I-80. This work will include updating the current lighting at the intersection to a more current design located in Poweshiek County Iowa

The project generally consists of the following new work:
(3) New IADOT conventional lighting pole assemblies and associated circuitry, associated conduit, and wire.
(6) Existing lighting poles and foundations that will be removed and the pole bases demolished to 2'-0" below adjacent grade and backfill as required.
(6) Existing IADOT poles, arms will be salvage to contractor
(6) luminaires will be salvaged to owner.

Electrical Service: No changes planned - replace existing pole mounted lighting cabinet with new pole mounted lighting cabinet in same location. Salvage of old existing lighting cabinet is to the contractor.

Utility Provider:

T.I.P. Rural Electric Coop.
Address: 320 Industrial Dr, Brooklyn, IA 52211
Phone: (800) 934-7976

The intent is to remove the existing poles, install the new poles in locations shown.

Obtain One-Call services and verify the location of existing underground utilities and lighting circuits prior to proceeding with lighting/electrical installations.

Light Poles: All Light Poles shall be Steel poles with Transformer Base type, per Standard Road Plan LI-210, Standard Specifications, and sized/dimensioned per the Layout Plans.

Roadway Luminaires: Contractor shall be responsible for suppling and installing solid state light emitting diode (LED) cobrahead style luminaires as described for the new luminaire locations. LED luminaires shall be:

Cooper Lighting - Archeon Model:
ARCH-M-PA2-110-740-U-T2R-AP-10K-PR7-PSC for Type II distribution.

or
Acuity Lighting - Autobahn Model:
ATB0-P304-MVOLT-R2-P7-SH for Type II distribution.

or
Signify Lumec - RoadFocus Model:
RFM-135W40LED-4K-G3-R2M-UNV-DMG-PH9-RCD7-GY3 for Type II distribution.

No substitutes will be allowed. All luminaires shall be rated for and connected for operation at 240 Volts.

232-3A
10-19-21

EROSION CONTROL (RURAL 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 lying 8 feet adjacent to shoulder and median as follows:

Place seed and fertilize according to the requirements of Article 2601.03,C,3 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 all incidental to mobilization and will not be paid for separately.

105-4
10-18-11

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

Number	Date	Title
LI-101	10-21-14	Light Pole Location
LI-103	04-19-22	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	04-18-17	Light Pole Foundation
LI-210	10-21-14	Transformer Base (Cast Aluminum)
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

108-23A
08-01-08

TRAFFIC CONTROL PLAN

1. To the extent practicable, perform lighting installations in coordination with traffic control measures associated with Project IM-NHS-080-6(522)202--03-79.
2. For lighting installations performed on roadways otherwise open to traffic, contractor shall maintain traffic on such roadways at all times.
3. Traffic control on this project shall be in accordance with the TC series of Standard Road Plans listed on Tab. 105-4.

All traffic control devices and equipment necessary to maintain traffic in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) and the current Standard Specifications.

110-13
04-20-10

DELIVERY AND STOCKPILING

Item Description	Quantity	Units	Delivery Location	Contact Name & Number	Remarks
LED Luminaire	3	EACH	Malcom Garage 1206 420th Ave Malcom, IA 50157	Aaron Wiegand 515.686.1983 (Cell) 641.528.3775 (Work)	Mount Ayr Maintanance

UTILITY
Modified

UTILITY NOTES

Lighting Contractor shall check for locations of utilities, drainage structures or other facilities in the construction area. Any damage to such facilities due to the contractor's carelessness shall be corrected at the contractor's expense.

WASTE
Modified

WASTE

It shall be the contractor's responsibility to provide waste areas or disposal sites for excess materials (excavated material or broken concrete) which is not desirable to be incorporated into the work involved on this projects.

It shall be the contractor's responsibility to ensure that areas (including haul roads) selected for waste or disposal not impact 1) culturally sensitive sites or graves or 2) wetlands or "Waters of the U.S.", including streams or stream banks below the "ordinary high water mark", without an approved U.S. Army Corps of Engineers Section 404 Permit.

No payment for overhaul will be allowed for material hauled to these sites. No material shall be placed within the right-of-way, unless specifically stated in the plans.

111-01
04-17-12

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-080-6(567)201--0E-79	7511-Salvage and Removal
ITS-080-6(560)201--25-79	5840-Intelligent Work Zone (IWZ)
IMN-080-6(559)201--0E-79	7511-Salvage and Removal
ITS-080-6(551)201--25-79	5830-ITS Integration
ITS-080-6(550)201--25-79	5820-ITS Infrastructure
ITS-080-6(549)201--25-79	5820-ITS Infrastructure
IMN-080-6(524)201--0E-79	6031-Right Of Way
IMN-080-6(523)202--0E-79	4521-Erosion Control
IM-NHS-080-6(522)202--03-79	2023-Bridge Replacement-PPCB
IM-080-6(521)202--13-79	5021-Lighting
IM-080-6(520)201--13-79	5062-Traffic Signs
IM-NHS-080-6(519)201--03-79	1013-PCC Pavement - Grade and New
IM-080-6(518)202--13-79	5021-Lighting
IM-080-6(517)201--13-79	5062-Traffic Signs
IM-NHS-080-6(516)201--03-79	1031-Unknown Pavement - New
IM-NHS-080-6(515)202--03-79	2023-Bridge Replacement-PPCB
IM-NHS-080-6(514)201--03-79	1013-PCC Pavement - Grade and New
IM-080-6(513)201--13-79	9040-Preliminary Engineering

108-12
10-21-14

WIRE, CABLE AND CONNECTORS

Circuit Number	Connectors								Phase Lines								Ground		Remarks
	Type	Quan. No.	Type	Quan. No.	Type	Quan. No.	Type	Quan. No.	Size A.W.G.	Quan. LF	Size A.W.G.	Quan. LF	Size A.W.G.	Quan. LF	Size A.W.G.	Quan. LF	Size A.W.G.	Quan. LF	
"LC-C"																			
C-0									#2	200							#4	100	**Service line and nutural conductors. Ground electrode con.**
C-1													#6	1280			#6	640	Circuit run conductors
C-1						Y-3	6								#10	600	#8	300	Light pole riser conductors, Ground conductor, [1]
																			[1] Provide one 5A time delay fuse in each Y-1 connector.

108-2
08-01-08

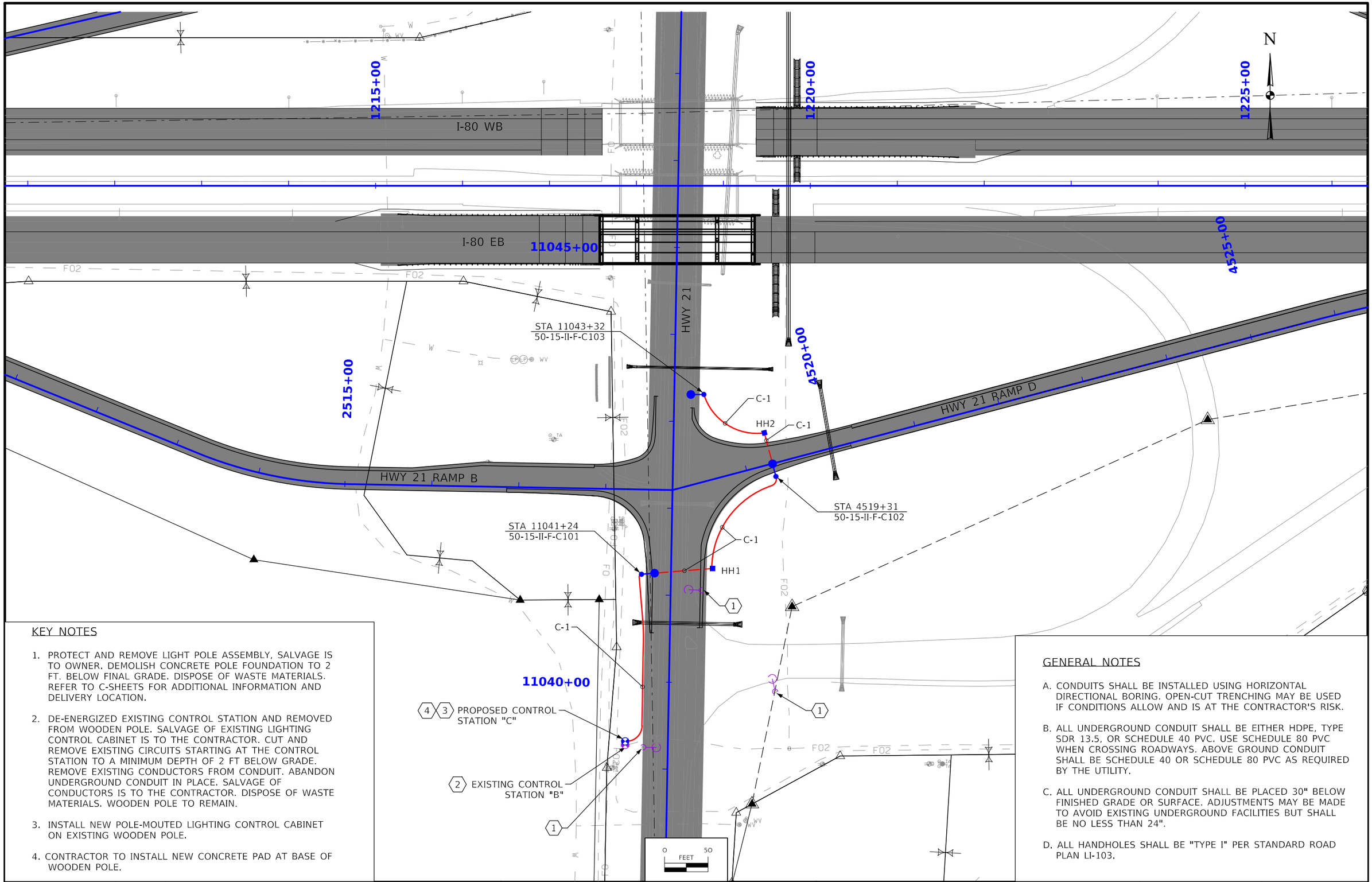
ELECTRICAL DUCTS

Location	Conduit Type	Dia. IN	Length FT	Remarks
"LC-C"				
C-0	RGS	2.0	25.0	Electric Service
C-0	PLASTIC	2.0	75.0	Electric Service
C-1	PLASTIC	2.0	225.5	
C-1	SCH 80 PVC	2.0	90.2	Road Crossing (C101-HH1)
C-1	PLASTIC	2.0	154.0	
C-1	SCH 80 PVC	2.0	58.3	Road Crossing (C102-HH2)
C-1	PLASTIC	2.0	112.2	
		Total:	740.2	

108-1
10-21-14

LIGHTING INSTALLATIONS

Location No.	Location Station	LI-101 Type	LI-101 A	LI-101 E FT	LI-201 Type	Remarks
C101	11041+24	1	6	6.0	A	T-Base
C102	4519+31	1	6	6.0	A	T-Base
C103	11043+31	1	6	6.0	A	T-Base



KEY NOTES

1. PROTECT AND REMOVE LIGHT POLE ASSEMBLY, SALVAGE IS TO OWNER. DEMOLISH CONCRETE POLE FOUNDATION TO 2 FT. BELOW FINAL GRADE. DISPOSE OF WASTE MATERIALS. REFER TO C-SHEETS FOR ADDITIONAL INFORMATION AND DELIVERY LOCATION.

2. DE-ENERGIZED EXISTING CONTROL STATION AND REMOVED FROM WOODEN POLE. SALVAGE OF EXISTING LIGHTING CONTROL CABINET IS TO THE CONTRACTOR. CUT AND REMOVE EXISTING CIRCUITS STARTING AT THE CONTROL STATION TO A MINIMUM DEPTH OF 2 FT BELOW GRADE. REMOVE EXISTING CONDUCTORS FROM CONDUIT. ABANDON UNDERGROUND CONDUIT IN PLACE. SALVAGE OF CONDUCTORS IS TO THE CONTRACTOR. DISPOSE OF WASTE MATERIALS. WOODEN POLE TO REMAIN.

3. INSTALL NEW POLE-MOUTED LIGHTING CONTROL CABINET ON EXISTING WOODEN POLE.

4. CONTRACTOR TO INSTALL NEW CONCRETE PAD AT BASE OF WOODEN POLE.

GENERAL NOTES

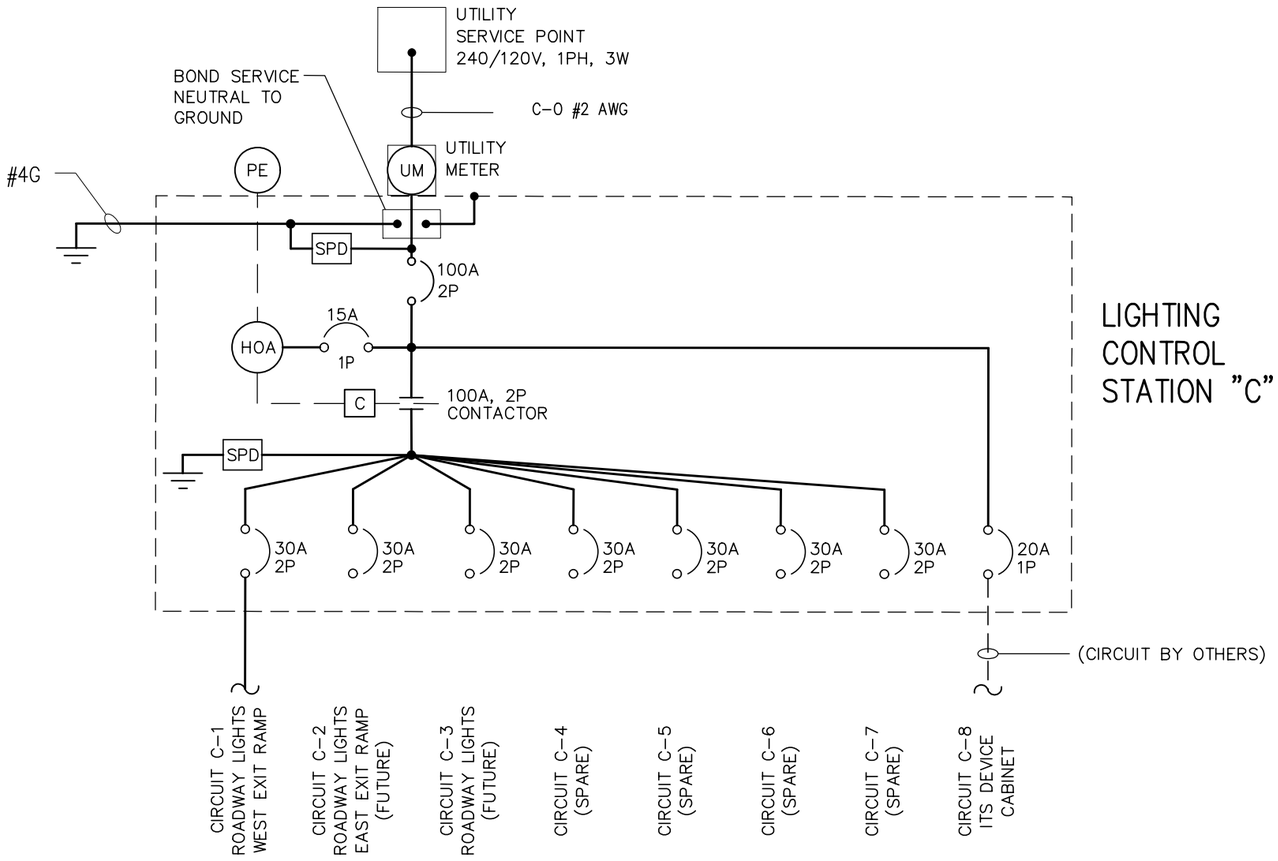
A. CONDUITS SHALL BE INSTALLED USING HORIZONTAL DIRECTIONAL BORING. OPEN-CUT TRENCHING MAY BE USED IF CONDITIONS ALLOW AND IS AT THE CONTRACTOR'S RISK.

B. ALL UNDERGROUND CONDUIT SHALL BE EITHER HDPE, TYPE SDR 13.5, OR SCHEDULE 40 PVC. USE SCHEDULE 80 PVC WHEN CROSSING ROADWAYS. ABOVE GROUND CONDUIT SHALL BE SCHEDULE 40 OR SCHEDULE 80 PVC AS REQUIRED BY THE UTILITY.

C. ALL UNDERGROUND CONDUIT SHALL BE PLACED 30" BELOW FINISHED GRADE OR SURFACE. ADJUSTMENTS MAY BE MADE TO AVOID EXISTING UNDERGROUND FACILITIES BUT SHALL BE NO LESS THAN 24".

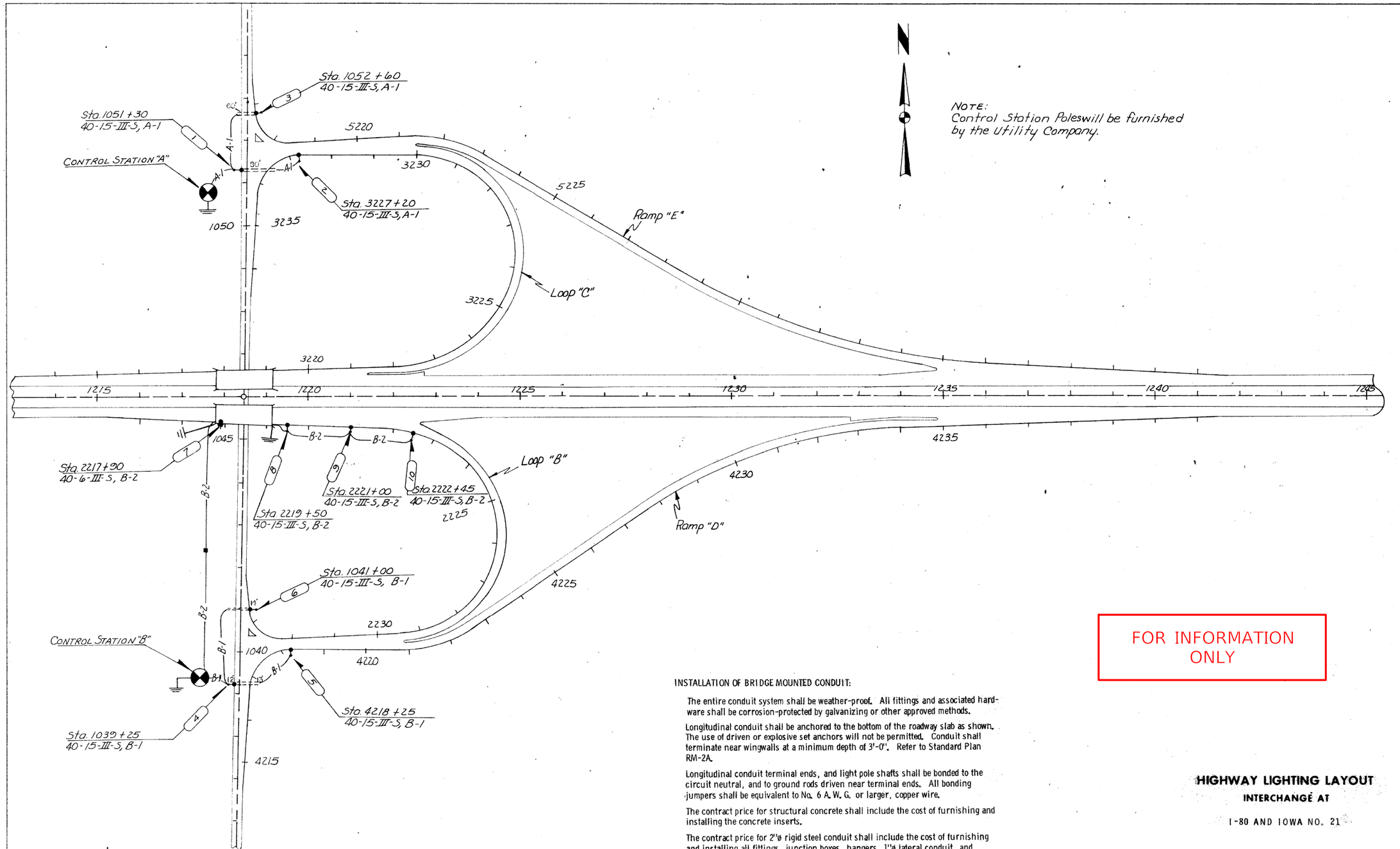
D. ALL HANDHOLES SHALL BE "TYPE I" PER STANDARD ROAD PLAN LI-103.

FILE NO. 98765	ENGLISH	DESIGN TEAM HERMANN \ HR GREEN	POWESHIEK COUNTY	PROJECT NUMBER IM-080-6(518)202--13-79	SHEET NUMBER P.1



LIGHTING
CONTROL
STATION "C"

LIGHTING DETAILS



NOTE:
Control Station Poleswill be furnished by the Utility Company.

FOR INFORMATION ONLY

INSTALLATION OF BRIDGE MOUNTED CONDUIT:

The entire conduit system shall be weather-proof. All fittings and associated hardware shall be corrosion-protected by galvanizing or other approved methods.

Longitudinal conduit shall be anchored to the bottom of the roadway slab as shown. The use of driven or explosive set anchors will not be permitted. Conduit shall terminate near wingwalls at a minimum depth of 3'-0". Refer to Standard Plan RM-2A.

Longitudinal conduit terminal ends, and light pole shafts shall be bonded to the circuit neutral, and to ground rods driven near terminal ends. All bonding jumpers shall be equivalent to No. 6 A.W.G. or larger, copper wire.

The contract price for structural concrete shall include the cost of furnishing and installing the concrete inserts.

The contract price for 2"ø rigid steel conduit shall include the cost of furnishing and installing all fittings, junction boxes, hangers, 1"ø lateral conduit, and other hardware appurtenant to the electrical duct system.

HIGHWAY LIGHTING LAYOUT

INTERCHANGE AT

I-80 AND IOWA NO. 21

D-5

FILE NO. 80 - 51A

Poweshiek COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I-80-6(66)206--01-79	IOWA	5		3	15

FILE NO.	ENGLISH	DESIGN TEAM HERMANN \ HR GREEN	POWESHIEK COUNTY	PROJECT NUMBER IM-080-6(518)202--13-79	SHEET NUMBER P.3	

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