

LAKE COUNTY, FLORIDA



DEPARTMENT OF PUBLIC WORKS  
ENGINEERING DIVISION  
350 N. SINCLAIR AVE.  
TAVARES, FLORIDA 32778

INDEX OF LIGHTING PLANS

SHEET NO.	SHEET DESCRIPTION
L-1	KEY SHEET
L-2	TABULATION OF QUANTITIES
L-3	GENERAL NOTES
L-4	POLE DATA AND LEGEND
L-5 - L-7	LIGHTING PLAN
L-8	SERVICE POINT DETAIL

LIGHTING PLANS

CR 455 AND RIDGEWOOD AVE ROUNDABOUT

LIGHTING SHOP DRAWINGS  
TO BE SUBMITTED TO:

SUSANNE S. WILLIAMS, P.E. PE No. 49486

Traffic Engineering Data Solutions, Inc.

80 Spring Vista Drive Phone: 386.753.0558  
DeBary, FL 32713 Fax: 386.753.0778

CERTIFICATE OF AUTHORIZATION # 27392

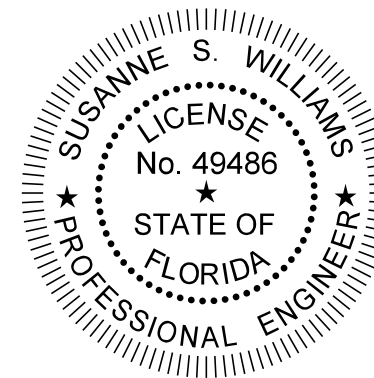
PLANS PREPARED BY:

Traffic Engineering Data Solutions, Inc.

80 Spring Vista Drive Phone: 386.753.0558  
DeBary, FL 32713 Fax: 386.753.0778

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THIS ITEM HAS BEEN DIGITALLY  
SIGNED AND SEALED BY



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AND THE SIGNATURE MUST BE VERIFIED  
ON ANY ELECTRONIC COPIES.

NOTE: THE SCALE OF THESE PLANS MAY  
HAVE CHANGED DUE TO REPRODUCTION.

GOVERNING DESIGN STANDARDS:

Florida Department of Transportation, FY2019-20 Design Standards eBOOK (DSeB)  
and applicable Design Standards Revisions (DSRs) at the following website:  
<http://www.fdot.gov/roadway/DesignStandards/Standards.shtm>

APPLICABLE DSRs:

GOVERNING STANDARD SPECIFICATIONS:

Florida Department of Transportation, July 2019 Standard Specifications  
for Road and Bridge Construction at the following website:  
<http://www.fdot.gov/programmangement/Implemented/SpecBooks>

LIGHTING PLANS  
ENGINEER OF RECORD: SUSANNE S. WILLIAMS, P.E.

P.E. NO.: 49486

SHEET  
NO.

L-1

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

# TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS												TOTAL THIS SHEET		GRAND TOTAL	
			L-5		L-6		L-7											
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL
630-2-11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	864		107		110										1081	1081
630-2-12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	265		74		71										410	410
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24" COVER SIZE	EA	15		3		4										22	22
639-1-121	ELECTRICAL POWER SERVICE, F&I, UNDERGROUND, METER FURNISHED BY POWER COMPANY	EA					1										1	1
639-2-1	ELECTRICAL SERVICE WIRE, FURNISH & INSTALL	LF					6										6	6
639-3-11	ELECTRICAL SERVICE DISCONNECT, F&I, POLE MOUNT	EA					1										1	1
641-2-11	PRESTRESSED CONCRETE POLE, F&I, TYPE P-11 PEDESTAL	EA					1										1	1
715-1-12	LIGHTING CONDUCTORS, F&I, INSULATED, NO.8 - 6	LF	4733		711		1265										6709	6709
715-4-12	LIGHT POLE COMPLETE, FURNISH & INSTALL STANDARD POLE STANDARD FOUNDATION, 35' MOUNTING HEIGHT	EA	9		2		1										12	12
715-7-11	LOAD CENTER, F&I, SECONDARY VOLTAGE	EA					1										1	1
715-500-1	POLE CABLE DISTRIBUTION SYSTEM, CONVENTIONAL	EA	9		2		1										12	12

REVISIONS			
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**TABULATION OF QUANTITIES**

SHEET NO.  
L-2

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## ROUNABOUT LIGHTING DESIGN NOTES

GENERAL NOTES:

1. A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED WITH LAKE COUNTY TRAFFIC OPERATIONS, (352) 742-1766, PRIOR TO ANY CONSTRUCTION.
2. IT SHALL BE NOTED THAT NO TEST BORINGS BE MADE WHERE CONDUIT RUNS ARE TO BE INSTALLED. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO EXAMINE THE JOB SITE CONDITIONS PRIOR TO SUBMITTING PROPOSALS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING LAKE COUNTY TRAFFIC OPERATIONS, AT 352-742-1766, 48 HOURS IN ADVANCE OF ALL PHASES OF CONSTRUCTION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS INCLUDING THE ELECTRIC PERMIT. THE APPLICATION FOR POWER SHOULD BE COORDINATED WITH LAKE COUNTY TRAFFIC OPERATIONS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY PROVIDING THE ELECTRICAL POWER, TO DETERMINE IF ANY ADDITIONAL FEES ARE REQUIRED TO CONNECT POWER. IF REQUIRED, THE FEE SHALL BE INCLUDED AS PART OF BID ITEM PAYMENT FOR ELECTRICAL SERVICE ASSEMBLY.
6. THE EXACT LOCATIONS OF ALL UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR PRIOR TO BEGINNING OF CONSTRUCTION.
7. ALL MATERIALS AND HARDWARE SHALL BE F.D.O.T. APPROVED, AND PRE-APPROVED BY LAKE COUNTY TRAFFIC OPERATIONS.
8. PULL BOX COVERS SHALL BE F.D.O.T. APPROVED NON METALLIC WITH RECESSED COVER LOGO "TRAFFIC LIGHTING".
9. PULL BOXES SHALL BE LOCATED AWAY FROM EDGE OF PAVEMENT, OR BEHIND A CURB WHEN POSSIBLE, ATTEMPTING TO KEEP AWAY FROM THE BOTTOM OF A DITCH OR RETENTION AREA, AND WHERE LARGE VEHICLES PARK.
10. DIRECTIONAL BORES SHALL BE INSTALLED BELOW EXISTING AND PROPOSED UTILITIES. CONTRACTOR SHALL REFERENCE CR 455 AND RIDGEWOOD AVENUE ROUNABOUT PLANS AND COORDINATE WITH LAKE COUNTY INSPECTOR PRIOR TO DIRECTIONAL BORES.
11. CONTRACTOR SHALL STAKE POLES AND COORDINATE WITH LAKE COUNTY INSPECTOR ON LOCATION AND SIZE OF CONCRETE MOWING PAD PRIOR TO INSTALLATION OF POLES/FOUNDATIONS.

PAY ITEM NOTES

- |           |   |
|-----------|---|
| 715-4-12  | CONTRACTOR SHALL COORDINATE WITH LAKE COUNTY ENGINEERING DIVISION ON THE LIGHT POLE TYPE (ALUMINUM OR CONCRETE) PRIOR TO BID SUBMITTAL. |
| 715-500-1 | IF CONCRETE POLE OPTION IS SELECTED, THIS ITEM IS NOT REQUIRED AND SHOULD NOT BE INCLUDED IN THE BID.                                   |

REVISIONS				 SUSANNE S. WILLIAMS P.E. PE No. 49486 <b>Traffic Engineering Data Solutions, Inc.</b> 80 Spring Vista Drive Phone: 386.753.0558 DeBary, FL 32713 Fax: 386.753.0778 CERTIFICATE OF AUTHORIZATION # 27392	 <b>LAKE COUNTY</b> FLORIDA	<b>DEPARTMENT OF PUBLIC WORKS</b> ENGINEERING DIVISION 350 N. SINCLAIR AVE. TAVARES, FLORIDA 32778	<h3>GENERAL NOTES</h3>	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION					L-3

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POLE DATA

POLE NO.	CIRCUIT	STATION	BASELINE	DIST. OR ARM	LUMINAIRE WATTAGE	MOUNTING HEIGHT	POLE OFFSET	SIDE	PAY ITEM
1	1-1	52+66	Ⓞ RIDGEWOOD AVE	8'	204	35'	34.8	RT	715-4-12
2	1-1	53+19	Ⓞ RIDGEWOOD AVE	8'	204	35'	18.1	RT	715-4-12
3	1-1	54+74	Ⓞ RIDGEWOOD AVE	8'	88	35'	14.2	RT	715-4-12
4	1-1	203+54	Ⓞ CR 455	8'	204	35'	37.6	RT	715-4-12
5	1-1	205+93	Ⓞ CR 455	8'	88	35'	22.5	LT	715-4-12
6	1-1	204+21	Ⓞ CR 455	8'	204	35'	25.9	LT	715-4-12
7	1-1	51+36	Ⓞ RIDGEWOOD AVE	8'	204	35'	48.5	LT	715-4-12
8	1-1	48+92	Ⓞ RIDGEWOOD AVE	8'	88	35'	21.0	RT	715-4-12
9	1-1	50+50	Ⓞ RIDGEWOOD AVE	8'	204	35'	25.2	RT	715-4-12
10	1-1	202+12	Ⓞ CR 455	8'	204	35'	40.2	LT	715-4-12
11	1-1	201+40	Ⓞ CR 455	8'	204	35'	27.0	LT	715-4-12
12	1-1	199+68	Ⓞ CR 455	8'	88	35'	29.4	LT	715-4-12

ROUNDABOUT LIGHTING DESIGN CRITERIA

Average Initial Intensity 3.0 Foot Candles  
 Average Vertical Intensity 2.3 Foot Candles  
 Uniformity Ratio Avg./Min. 4:1 Or Less  
 Max./Min. 10:1 Or Less  
 Wind Speed 140 MPH

ROADWAY LIGHTING DESIGN CRITERIA

Average Initial Intensity 1.0 Foot Candles  
 Uniformity Ratio Avg./Min. 3:1 Or Less  
 Max./Min. 10:1 Or Less

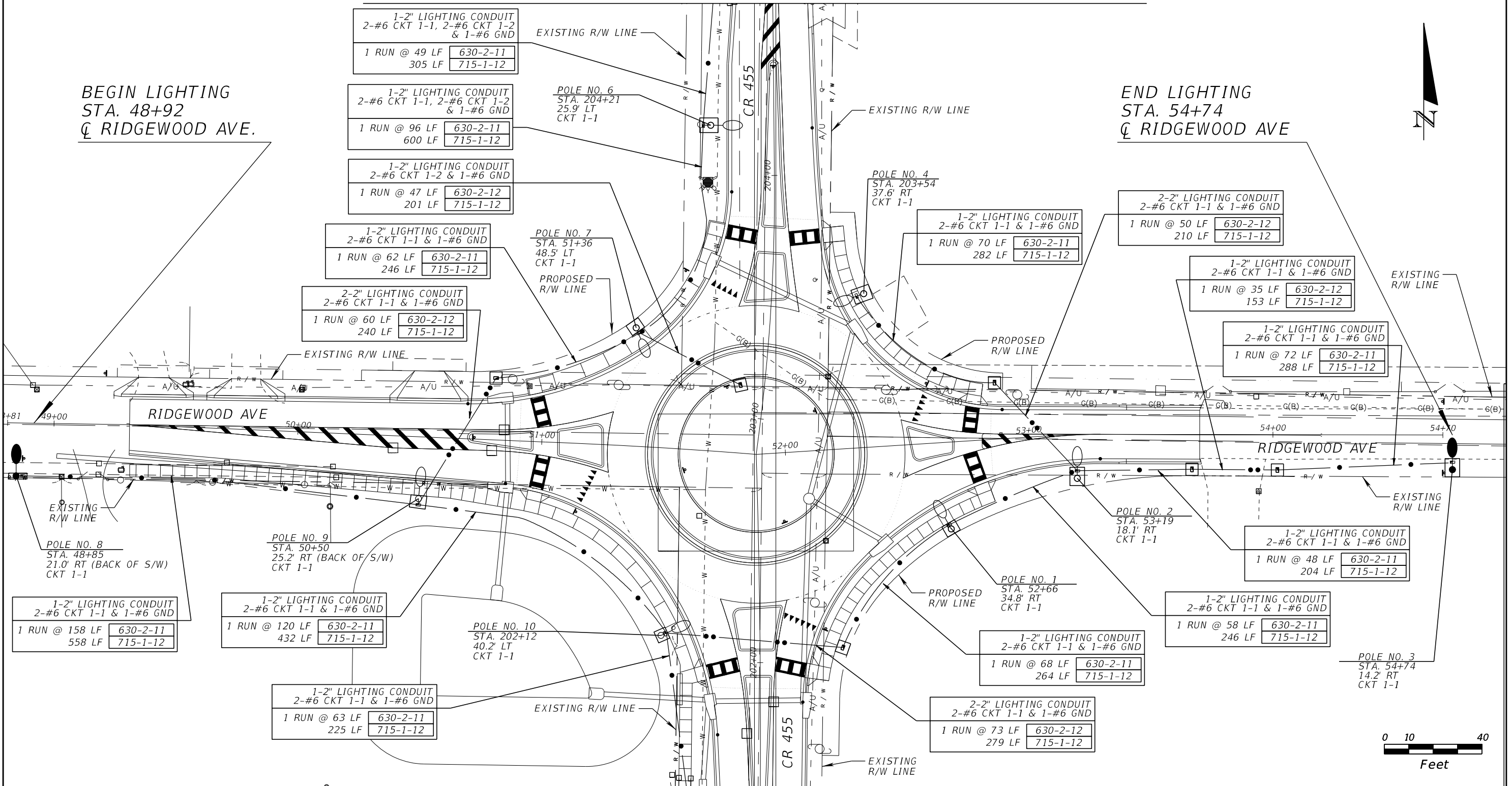
LEGEND

SYMBOLS	DESCRIPTION
	Single arm conventional shoulder mounted 204 Watt LED luminaire. Designed for Type III Medium distribution. Luminaire wired for 120/240 volt operation. Use American Electric Model No. ATB2_60BLEDE10_XXXX_R3 or equal.
	Single arm conventional shoulder mounted 88 Watt LED luminaire. Designed for Type III Medium distribution. Luminaire wired for 120/240 volt operation. Use American Electric Model No. ATB2_40BLEDE70_XXXX_R3 or equal.
	Open trench conduit with conductors inside (conductor size as shown on plan sheets.)
	Directional bore conduit with conductors inside (conductor size as shown on plan sheets.)
	Pull box.
	Proposed Load Center

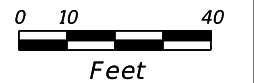
MATCHLINE STA. 204+70 - SEE LIGHTING PLAN (3)

BEGIN LIGHTING  
STA. 48+92  
CL RIDGEWOOD AVE.

END LIGHTING  
STA. 54+74  
CL RIDGEWOOD AVE



MATCHLINE STA. 201+49 - SEE LIGHTING PLAN (2)



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**LIGHTING PLAN (1)**

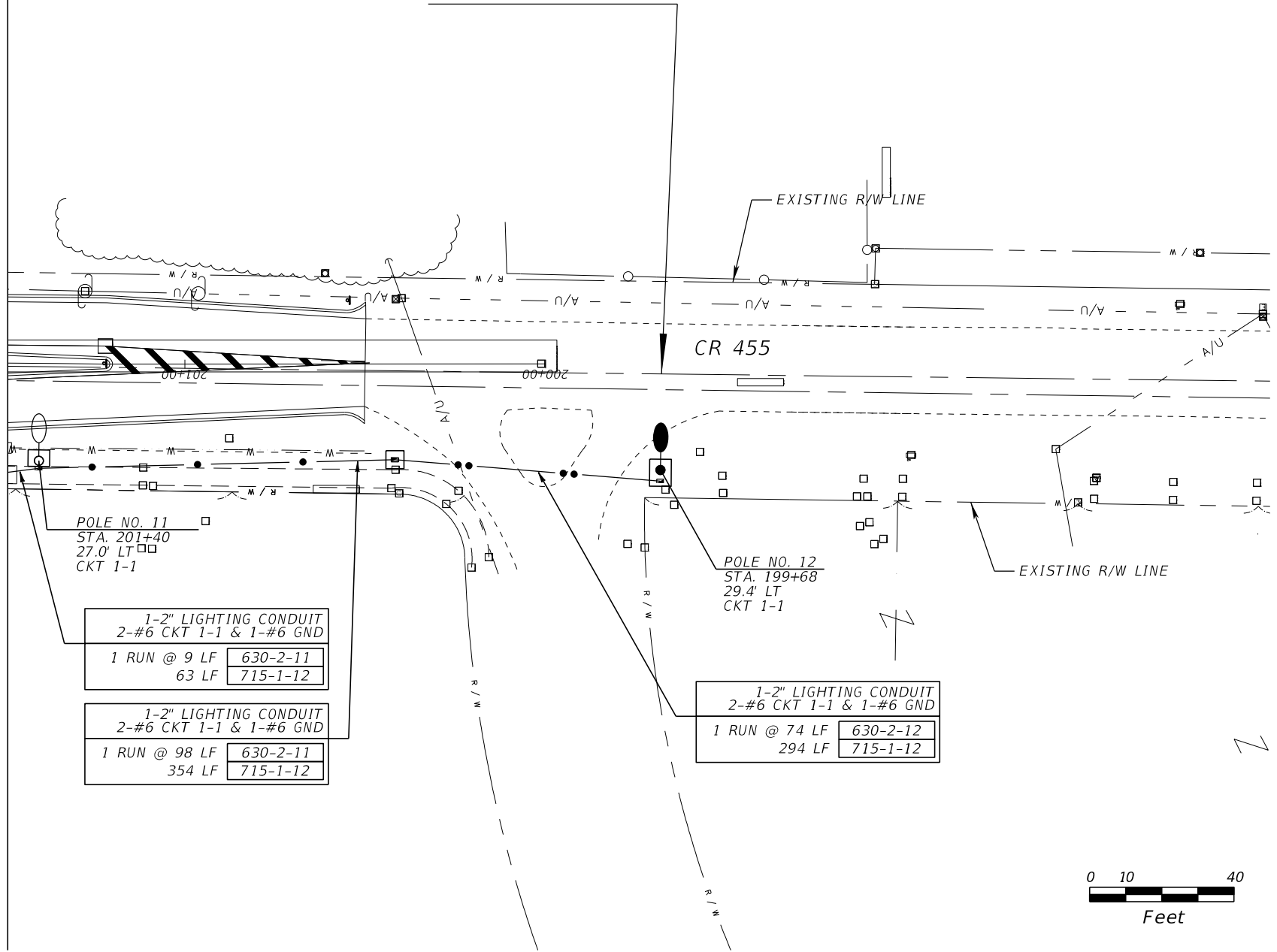
SHEET NO.  
**L-5**

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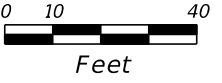
BEGIN LIGHTING  
STA. 199+68  
CL CR 455

MATCHLINE STA. 201+49 - SEE LIGHTING PLAN (1)



1-2" LIGHTING CONDUIT 2-#6 CKT 1-1 & 1-#6 GND	
1 RUN @ 9 LF	630-2-11
63 LF	715-1-12
1-2" LIGHTING CONDUIT 2-#6 CKT 1-1 & 1-#6 GND	
1 RUN @ 98 LF	630-2-11
354 LF	715-1-12

1-2" LIGHTING CONDUIT 2-#6 CKT 1-1 & 1-#6 GND	
1 RUN @ 74 LF	630-2-12
294 LF	715-1-12



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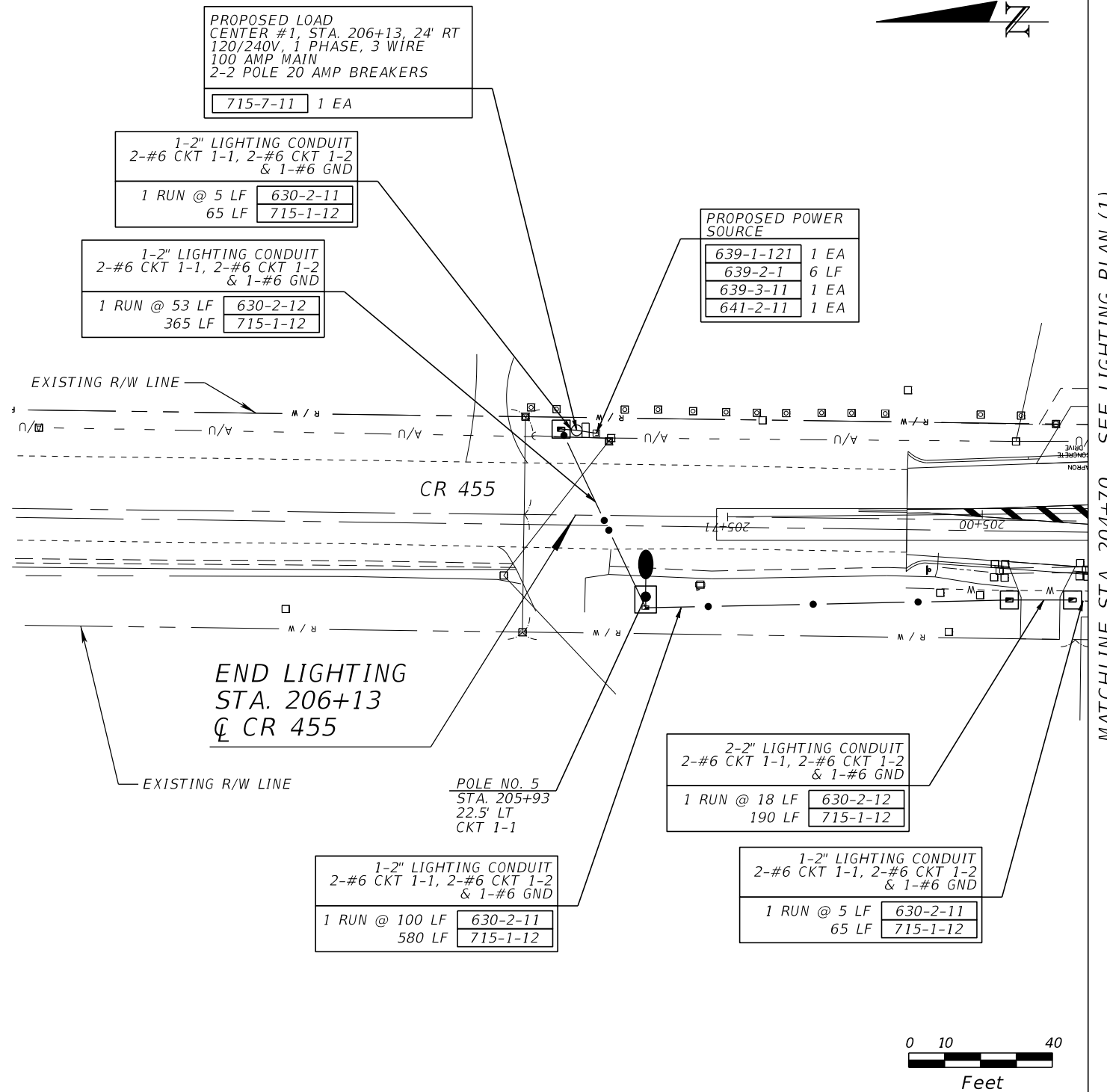


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**LIGHTING PLAN (2)**

SHEET NO.  
**L-6**

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**LIGHTING PLAN (3)**

DATE: 6/21/2019 1:16:32 PM  
 Z:\2015 Projects\10780 (Lake County)\TW0 #18 - CR 455 Roundabout Lighting\CADD\RS

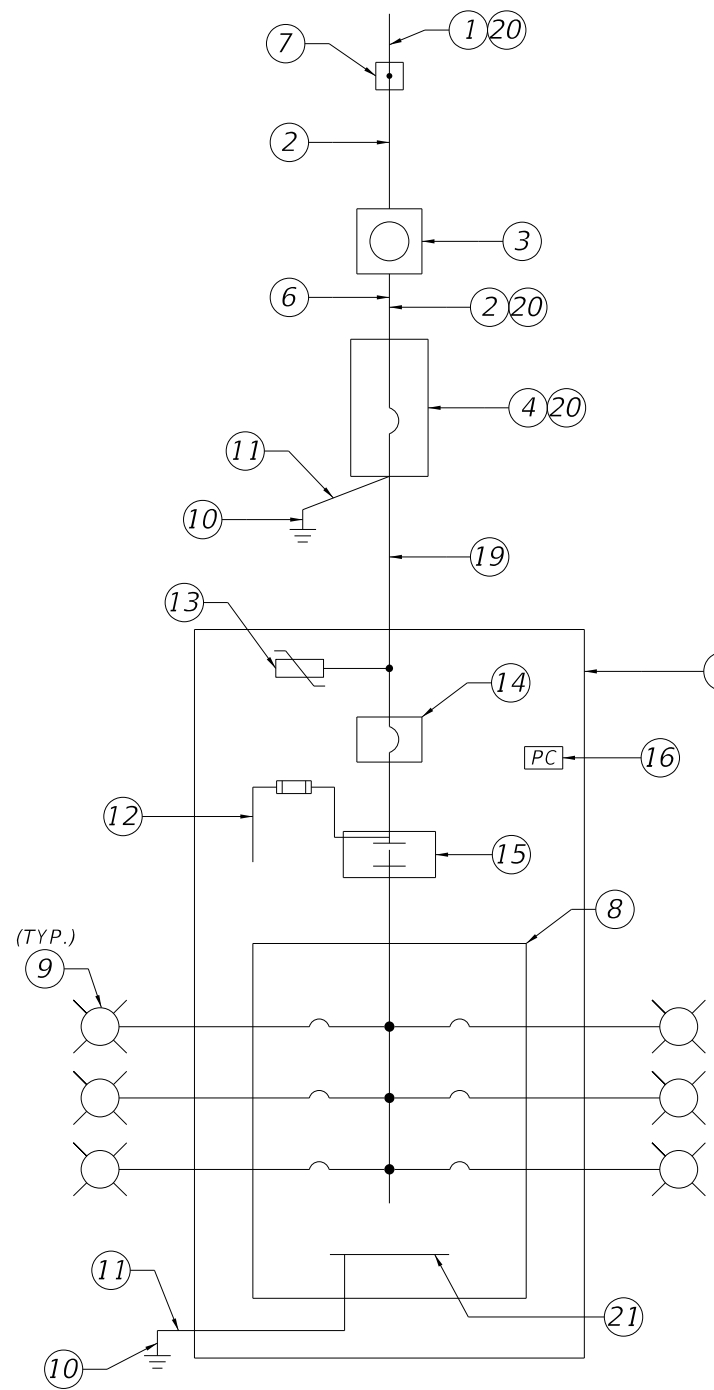
SHEET NO.
L-7

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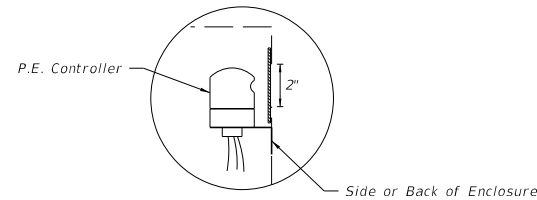
# SERVICE POINT DETAIL LOAD CENTER #1

### Keyed Notes:

1. 120/240V, Single Phase, 3 Wire Electric Distribution Underground Service Drop.
2. 2-#1 AWG Ungrounded Service Conductors & 1-#1 AWG Grounded Service Conductor (Neutral) in 2" Underground Conduit
3. Meter Socket by Contractor
4. Service Main Disconnect: 240V, 2 Pole, S/N, 100A, 35,000 AIC Min. Rated Circuit Breaker, in Service Entrance Rated NEMA 4X Circuit Breaker Enclosure
5. Lighting Control Panel Enclosure. Dimensions as Necessary for Equipment Inside. Ground Mounted Cabinet per Standard Plan 639-002.
6. Concrete Riser Pole.
7. Point of Service: Utility Company Installed Handhole. Contractor to provide 10' of slack service feeder for connection by Utility Company.
8. Main Lug Only Panelboard in NEMA 1 Enclosure. Number and Rating of Branch Circuit Breakers shall be as Indicated on Panelboard Schedule.
9. Branch Circuit to Roadway Luminaires in 2" Underground Conduit (See plan sheets for count of conduits).
10. 5/8" Copper Clad Ground Rod, 40' Long.
11. #6 Insulated Copper Ground Wire. Bond the Service Neutral to Ground at Service Main Disconnect.
12. Fused Control Circuit, 120VAC. Size conductors according to contactor manufactures recommendation, and size fuse per NEC.
13. Lightning Arrester (Surge Protective Device) Mounted on Outside of Enclosure.
14. Lighting Control Panel Main Breaker in NEMA 1 Enclosure: 240V, 2 Pole, S/N, 60A, 22,000 AIC Min. Rated
15. 2 Pole Electrically Held Feeder Disconnect Style Lighting Contactor in NEMA 1 Enclosure: Minimum Voltage and Current Rating to Meet or Exceed Lighting Control Panel Main Breaker, 120VAC 60Hz Coil
16. Photo Electric Switch-120V Rated.
17. Hand-off Automatic Selector Switch (Part of Lighting Contactor)
18. Concrete Pad.
19. Underground Feeder: 2-#1 & 1-#1 Ground in 2" Underground Conduit
20. Mount on Riser Pole.
21. Ground BUS.



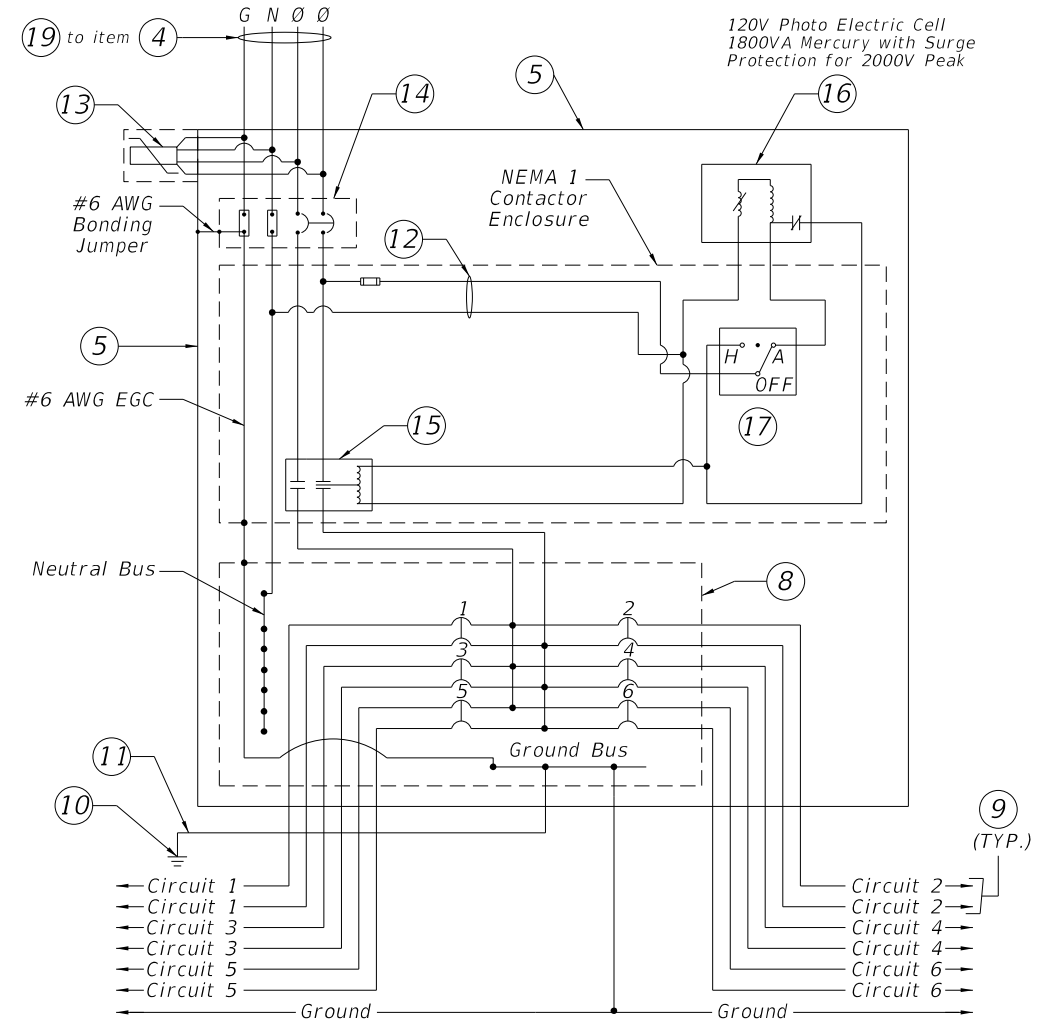
ONE LINE DIAGRAM DISTRIBUTION POINT



Cut a 2" hole in the side of the Lighting Control Panel enclosure for the operation and mounting of the P.E. controller. Use plexiglass and a clear silicone sealant to cover hole, install P.E. Controller.

PHOTO ELECTRIC CONTROLLER DETAIL

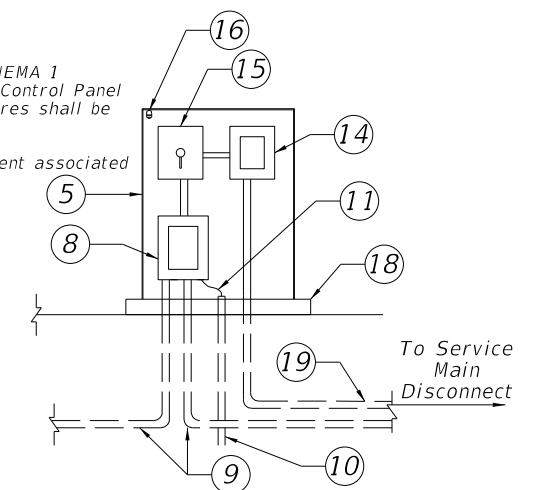
PANELBOARD SCHEDULE											
VOLTAGE: 120/240					MAINS TYPE: LUG						
PHASE: 1					MAIN RATING: 60 A						
WIRES: 3					AIC: 22,000 A						
CKT	CKT NAME	CONNECTED LOAD	TRIP	POLES	A LOAD (VA)	B LOAD (VA)	POLES	TRIP	CKT NAME	CONNECTED LOAD	CKT
1	1-1	Roadway Lighting	20A	2	1240	0	2	20A	1-2	Future Landscape	2
3	---	---	---	---	---	---	---	---	---	---	4
5	---	---	---	---	---	---	---	---	---	---	6
LOAD PER LEG:					1240	1240					
TOTAL LOAD (VA):					2480						
TOTAL AMPS @ 240V:					10.33		(INCLUDED % FOR CONTINUOUS LOADING)				



TYPICAL DISTRIBUTION POINT SCHEMATIC DETAIL

### Notes:

1. All equipment shall be enclosed individual NEMA 1 Enclosures inside of the NEMA 4X Lighting Control Panel Enclosure. All wiring between these enclosures shall be installed in Intermediate Metal Conduit.
2. Shop Drawings are required for all equipment associated with the Lighting Control Panel.



RISER DIAGRAM - TYPICAL DISTRIBUTION POINT

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## SERVICE POINT DETAIL LOAD CENTER #1

SHEET  
NO.  
L-8