

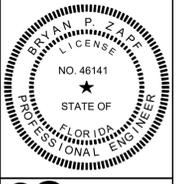
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1 ENLARGED PROJECT SITE LOCATION  
NO SCALE



BRYAN P. ZAPF, P.E.  
FL LICENSE # 46141



**ME3**  
CONSULTING ENGINEERS, LLC  
5300 Paylor Lane  
Suite 100  
Venice, FL 33596  
Tel: 847-248-1818 Fax: 847-361-1221  
bzapf@me3-engr.com  
www.me3-engr.com  
C.O.A. 27582

PROJECT TITLE:	AJAX PAVING VENICE AREA LIGHTING DESIGN
ISSUED FOR:	PERMIT SET
	09/30/2025

REV	DESCRIPTION	DATE
3	REV 4 TRC	1-13-26
2	REV 3 TRC	12-17-25
1	REV 2 TRC	11-6-25

GRAPHIC SCALE:  
SCALE: As indicated  
PROJECT MANAGER:  
DRAWN BY: GPC  
A/E OF RECORD: BPZ  
PROJECT NO: 25-1446  
SHEET TITLE:

SITE PLAN

SHEET No.: **E0.1**

TORK ASTRONOMIC TIME SWITCH #1 SERIES EWZ201 - TYPE 1 STEEL						
TIME CLOCK OR TIME SWITCH #	VOLTAGE	LIGHTING BRANCH CIRCUIT #	LIGHTING OR LOAD CONTROLLED	LOAD IN VA	CONTROL STRATEGY	ADDITIONAL REQUIREMENTS
1	240V	CKT A	TRUCK PARKING LIGHTING	1252	SUNSET VIA ASTRONOMIC CLOCK-ON; SUNRISE VIA ASTRONOMIC CLOCK-OFF (PHOTOSENSOR OVERRIDE)	CONFIRM WITH OWNER AND PROGRAM AS DIRECTED; PROVIDE PHOTOSENSOR AND PHOTOSENSOR OVERRIDE FOR CLOUDY DAYS
2	240V	CKT B	TRUCK PARKING LIGHTING	956	SUNSET VIA ASTRONOMIC CLOCK-ON; SUNRISE VIA ASTRONOMIC CLOCK-OFF (PHOTOSENSOR OVERRIDE)	CONFIRM WITH OWNER AND PROGRAM AS DIRECTED; PROVIDE PHOTOSENSOR AND PHOTOSENSOR OVERRIDE FOR CLOUDY DAYS

TORK ASTRONOMIC TIME SWITCH #2 SERIES EWZ201 - TYPE 1 STEEL						
TIME CLOCK OR TIME SWITCH #	VOLTAGE	LIGHTING BRANCH CIRCUIT #	LIGHTING OR LOAD CONTROLLED	LOAD IN VA	CONTROL STRATEGY	ADDITIONAL REQUIREMENTS
1	120V	CKT A	WEST PARKING LIGHTING	264	SUNSET VIA ASTRONOMIC CLOCK-ON; SUNRISE VIA ASTRONOMIC CLOCK-OFF (PHOTOSENSOR OVERRIDE)	CONFIRM WITH OWNER AND PROGRAM AS DIRECTED; PROVIDE PHOTOSENSOR AND PHOTOSENSOR OVERRIDE FOR CLOUDY DAYS

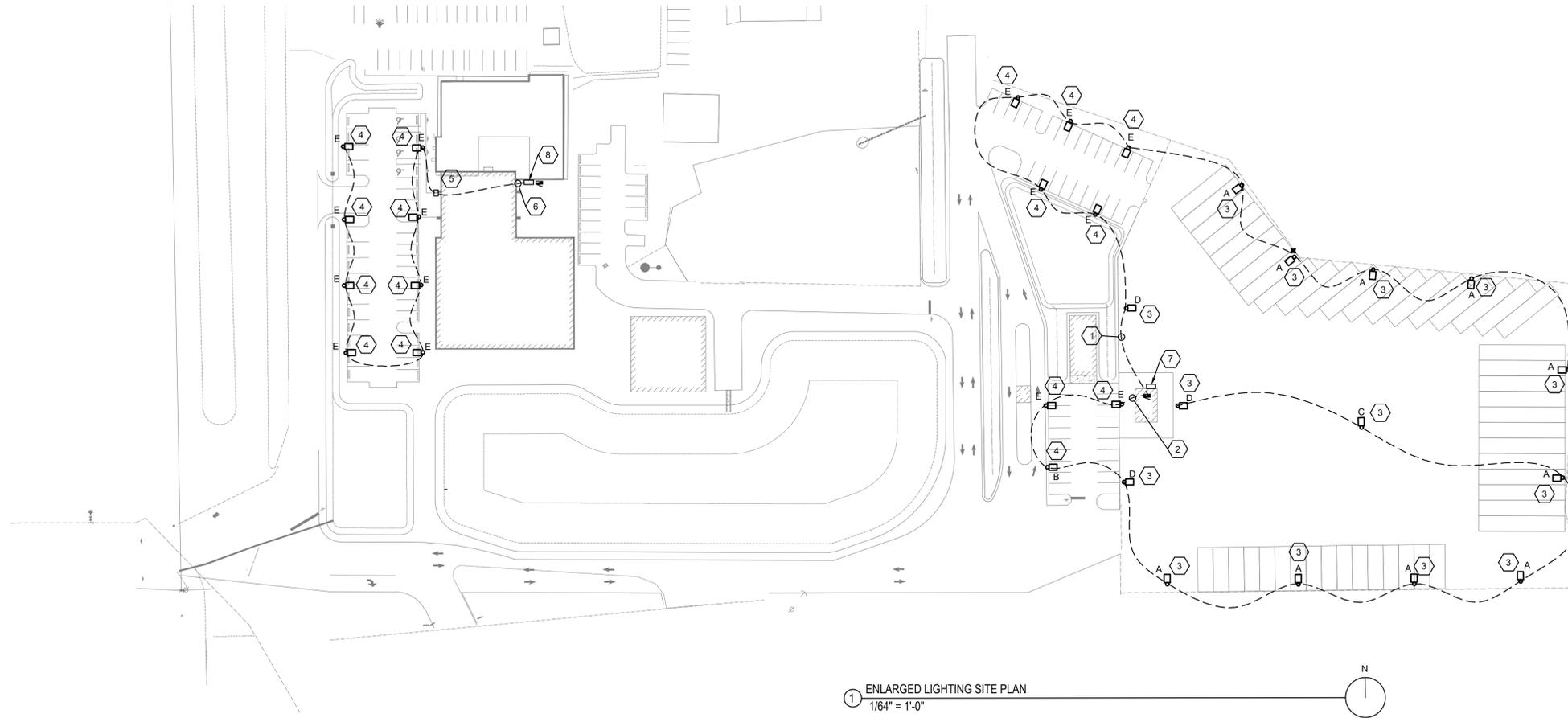
LIGHTING FIXTURE SCHEDULE - PARKING LOT AJAX PAVING - VENICE, FL							
FIXTURE TYPE	FIXTURE DESCRIPTION	MANUFACTURER/ CATALOG NUMBER	VOLTS	LED INFORMATION		TOTAL INPUT WATTS	
				TEMP	LUMENS		
A	LITHONIA LIGHTING D-Series Size 2 Area Luminaire P1 Performance Package 4000K CCT 80 CRI Type 4 Extreme Backlight Control	DSX2 LED P1 40K 80CRI BLC4	UNV @ 240V	4000K	13,427 LUMENS	135W	
B	LITHONIA LIGHTING D-Series Size 0 Area Luminaire P2 Performance Package 4000K CCT 80 CRI Type 4 Medium	DSX0 LED P2 40K 80CRI T4M	UNV @ 240V	4000K	5,755 LUMENS	45W	
C	LITHONIA LIGHTING D-Series Size 2 Area Luminaire P5 Performance Package 4000K CCT 80 CRI Type 5 Wide	DSX2 LED P5 40K 80CRI T5W	UNV @ 240V	4000K	39,127 LUMENS	327W	
D	LITHONIA LIGHTING D-Series Size 1 Area Luminaire P3 Performance Package 4000K CCT 80 CRI Type 4 Medium	DSX1 LED P3 40K 80CRI T4M	UNV @ 240V	4000K	12,816 LUMENS	102W	
E	LITHONIA LIGHTING D-Series Size 0 Area Luminaire P1 Performance Package 4000K CCT 80 CRI Type 3 Medium	DSX0 LED P1 40K 80CRI T3M	VARIABLE	4000K	4,396 LUMENS	33W	

**KEYED NOTES**

- PROVIDE 2-#6 AWG + 1-#6 AWG EQUIPMENT GROUND COPPER IN 1" UNDERGROUND PVC CONDUIT. PROVIDE A 20-AMP, 2 POLE BREAKER (240V) IN THE EXISTING PANEL INSIDE THE BUILDING SHOWN. MATCH EXISTING BREAKERS TYPE AND RATING. CALCULATED VOLTAGE DROP IS 1.26%. LIGHTS TO BE CONTROLLED VIA TIME SWITCH #1, CKT A.
- PROVIDE 2-#6 AWG + 1-#6 AWG EQUIPMENT GROUND COPPER IN 1" UNDERGROUND PVC CONDUIT. PROVIDE A 20-AMP, 2 POLE BREAKER (240V) IN THE EXISTING PANEL INSIDE THE BUILDING SHOWN. MATCH EXISTING BREAKERS TYPE AND RATING. CALCULATED VOLTAGE DROP IS 1.65%. LIGHTS TO BE CONTROLLED VIA TIME SWITCH #1, CKT B.
- LIGHTS MOUNTING HEIGHT TO BE 30 FT, USING BOLTED ON CONCRETE FOOTER LIGHT POLES.
- LIGHTS MOUNTING HEIGHT TO BE 20 FT, USING DIRECT EMBED CONCRETE POLES.
- PROVIDE UNDERGROUND JUNCTION BOX OUTSIDE OF NEW AND EXISTING BUILDING FOOTPRINTS FOR FUTURE CIRCUIT MODIFICATIONS (IF NEEDED).
- PROVIDE 2-#10 AWG + 1-#10 AWG EQUIPMENT GROUND COPPER IN 1" UNDERGROUND PVC CONDUIT. PROVIDE A 20-AMP, 1 POLE BREAKER (120V) IN THE EXISTING PANEL INSIDE THE BUILDING SHOWN. MATCH EXISTING BREAKERS TYPE AND RATING. CALCULATED VOLTAGE DROP IS 1.72%. LIGHTS TO BE CONTROLLED VIA TIME SWITCH #2.
- PROVIDE TIME SWITCH #1.
- PROVIDE TIME SWITCH #2.

**GENERAL SITE LIGHTING NOTES**

- PROVIDE (DEFINED AS "FURNISH AND INSTALL") ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR COMPLETE AND PROPERLY OPERATING SITE LIGHTING SYSTEMS INFRASTRUCTURE FOR THE WORK SHOWN. THE SITE LIGHTING PHOTOMETRIC PLANS MUST BE USED IN CONJUNCTION WITH THIS PLAN FOR THE FIXTURE TYPES OF THE AREA LIGHTING. THE ACTUAL AREA LIGHTING FIXTURE SPECIFICATIONS ARE SHOWN ON THE SITE LIGHTING PHOTOMETRIC PLANS.
- CALL BEFORE DIGGING AS REQUIRED BY THE STATE STATUTES.
- SEAL ALL CONDUIT PENETRATIONS, PROVIDE CONDUIT SUPPORTS AND RESTORE ALL CONCRETE, LANDSCAPING, BUILDING FACADES, ETC. TO THE SATISFACTION OF THE OWNER AND ARCHITECT.
- THE NEW POLES SHOULD NOT BE CLOSER THAN 40 INCHES FROM THE WHEEL STOPS IN PARKING SPACES ADJACENT TO THE PARKING LOT.
- SEE DETAIL FOR INSTALLATION OF POLE / FIXTURE IN THE ELECTRICAL DETAILS. ASSURE A DISTANCE OF AT LEAST 10 FT BETWEEN LIGHT POLES AND TREE TRUNKS TO AVOID DAMAGE TO TREES DURING CONSTRUCTION, MAINTENANCE, AND WINDSTORMS.
- IT IS THE INTENT OF THE SITE LIGHTING DESIGN AND EXTERIOR BUILDING MOUNTED LIGHTING FIXTURE DESIGN THAT ALL LIGHTING FIXTURES HAVE BEEN SPECIFIED WITH FULL-HORIZONTAL CUT OFF OPTICS (NO UPLIGHT). ALL EXTERIOR LIGHTING FIXTURES HAVE BEEN SPECIFIED TO CONFORM WITH SITE LIGHTING STANDARDS IN THE CITY OF VENICE LAND DEVELOPMENT CODE.



1 ENLARGED LIGHTING SITE PLAN  
1/64" = 1'-0"

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FL LICENSE # 46141



**ME3**  
CONSULTING ENGINEERS, LLC  
5300 Parkway Lane  
Suite 104  
Venice, FL 33596  
Phone: 844-246-1818 Fax: 844-361-1221  
b.zapf@me3-engr.com  
www.me3-engr.com  
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PROJECT: AJAX PAVING VENICE AREA LIGHTING DESIGN  
TITLE: 1 AJAX DRIVE, NORTH VENICE, FL 34275

ISSUED FOR: PERMIT SET  
FOR: 09/30/2025

REV	DESCRIPTION	DATE
3	REV 4 TRC	1-13-26
2	REV 3 TRC	12-17-25
1	REV 2 TRC	11-6-25

GRAPHIC SCALE:

SCALE: As indicated

PROJECT MANAGER:

DRAWN BY: GPC

A/E OF RECORD: BPZ

PROJECT NO: 25-1446

SHEET TITLE:

LIGHTING SITE PLAN

SHEET No.: **E1.1**

**ENGINEER'S NOTE**

AFTER REVIEWING THE PLANNING AND ZONING DEPARTMENT COMMENTS ON THE LIGHTING PLANS, ITEM "4" REFERENCES CHAPTER 87, SECTION 3.9.3.A.8, WHICH ADDRESSES PARKING AREA LIGHTING AND PERMITTED POLE HEIGHTS.

DUE TO THE INDUSTRIAL NATURE OF THIS PARKING AREA, THE STANDARD LIGHT POLE HEIGHTS SPECIFIED IN THE CITY OF VENICE CODE (12-15 FEET) ARE INSUFFICIENT TO PROVIDE UNIFORM AND EFFECTIVE ILLUMINATION. THIS PARKING LOT IS INTENDED FOR CONSTRUCTION AND INDUSTRIAL TRUCKS, WHICH AVERAGE APPROXIMATELY 12 FEET IN HEIGHT. TO ENSURE ADEQUATE LIGHT DISTRIBUTION AND SAFETY, THE PROPOSED LIGHT POLE HEIGHTS EXCEED THE STANDARD RANGE.

THE PHOTOMETRIC ANALYSIS DEMONSTRATES THAT LIGHT SPILLAGE BEYOND THE PROPERTY BOUNDARIES REMAINS WITHIN ACCEPTABLE LIMITS. ALL FIXTURES LOCATED ALONG THE PARCEL PERIMETER WILL INCLUDE EXTERNAL GLARE SHIELDS TO PREVENT LIGHT TRESPASS ONTO ADJACENT PROPERTIES.

**HOURS OF OPERATION**

PARKING AREA HOURS: HOURS OF OPERATION ARE FROM 7AM TO 5PM.

**FIXTURE SUBSTITUTION REQUIREMENTS**

THE FIXTURES SHOWN ON THIS PHOTOMETRIC PLAN (SCHEDULE) ARE THE PREFERRED LIGHTING FIXTURES FOR THIS PROJECT. THE LIGHTING DESIGN CRITERIA IS VERY STRICT. OTHER MANUFACTURER'S FIXTURES (EQUIVALENT SUBSTITUTIONS) WILL ONLY BE CONSIDERED BY THE ARCHITECT AND ENGINEER FOR THIS PROJECT IF THEY MEET THE FOLLOWING CRITERIA:

- THE EQUIVALENT FIXTURE MUST PROVIDE NO LESS THAN 95% OF THE DELIVERED LUMENS SHOWN WHEN COMPARED TO THE BASIS OF DESIGN FIXTURE.
- THE INPUT WATTS OF THE EQUIVALENT FIXTURE MUST BE NO MORE THAN THE INPUT WATTAGE OF THE BASIS OF DESIGN FIXTURE WHEN COMPARED TO THE BASIS OF DESIGN FIXTURE.
- THE ELECTRICAL SUBCONTRACTOR MUST PREPARE A POINT-BY-POINT PHOTOMETRIC CALCULATION OF THE SITE AS SHOWN ON THIS DRAWING SHEET FOR REVIEW BY THE ENGINEER (WITH CALCULATION SUMMARY). THE CALCULATED LIGHTING LEVELS MUST NOT BE GREATER THAN IS SHOWN ON THE BASIS OF DESIGN PLAN.

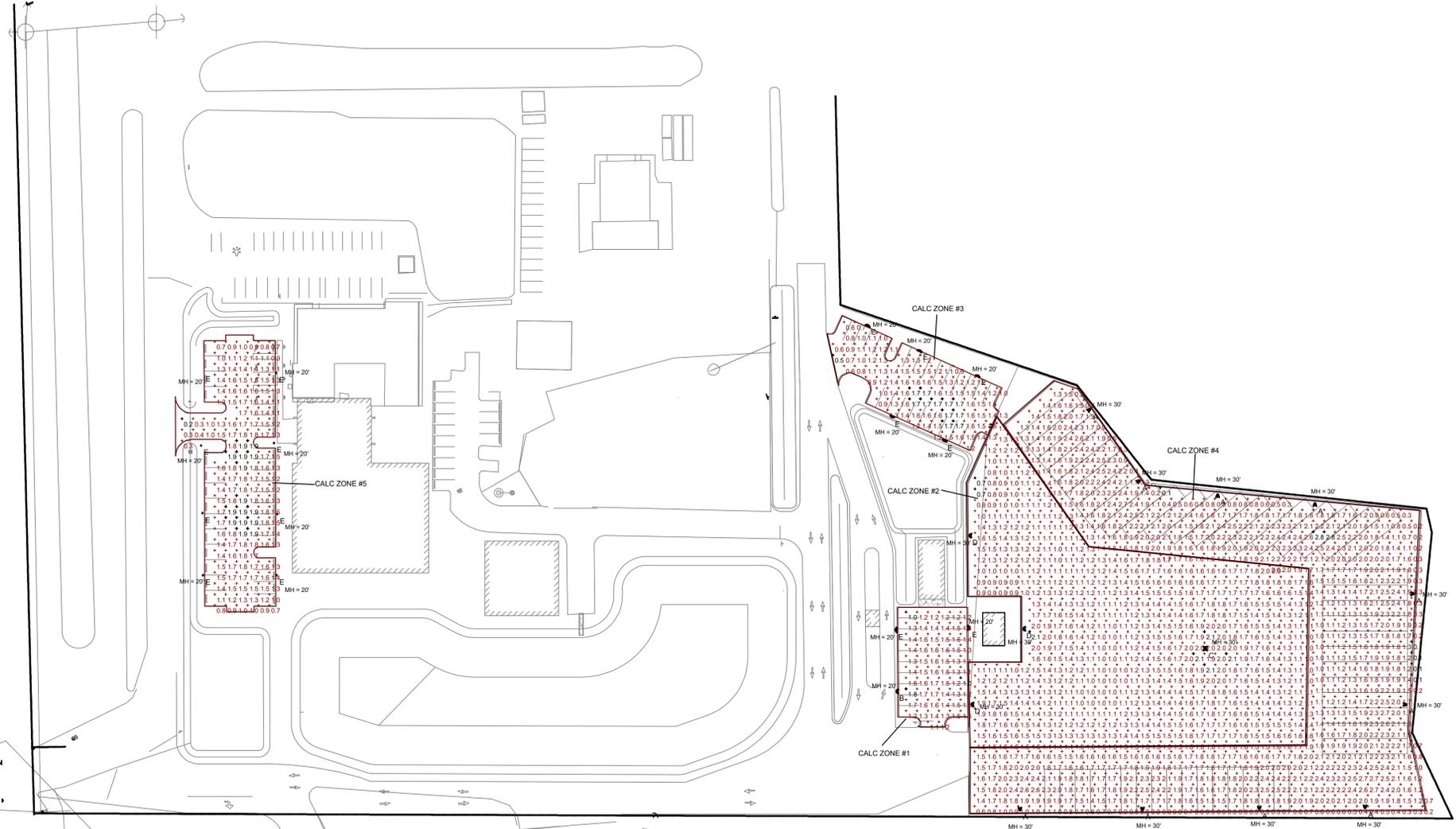
IT WILL BE A RESPONSIBILITY OF THE ELECTRICAL SUBCONTRACTOR TO PROVIDE A CLEAR AND CONCISE SUMMARY OF RESULTS (TABLE/ CHART) FOR THE ENGINEER TO REVIEW IN ORDER TO ASSIST IN DETERMINING THE ACTUAL FIXTURE EQUIVALENTS. THE ENGINEER WILL NOT REVIEW MORE THAN ONE SUMMARY IN ORDER TO DETERMINE THE EQUIVALENT FIXTURES (ONE SUMMARY INCLUDES A REJECTION, NO FOLLOW UP PERMITTED) AND IF THE SUBMITTED PHOTOMETRIC PLAN MEETS THE CRITERIA INDICATED ABOVE, HOWEVER, EACH SUBSEQUENT REVIEW WILL REQUIRE A PAYMENT OF \$1,500.00 TO THE ENGINEER OF RECORD FOR THE ENGINEER'S REVIEW TIME AND RESUBMITTAL FOR PERMIT. ANY AND ALL SUBSTITUTIONS ARE NOT GUARANTEED TO BE CONSIDERED EQUIVALENT AND THE DECISION OF THE ARCHITECT AND ENGINEER IS FINAL.

**PHOTOMETRIC PLAN GENERAL NOTES**

- FOOTCANDLES VALUES SHOWN ARE CALCULATED USING SPECIFIED SITE LIGHTING FIXTURE(S) AND MAY NOT REPRESENT ACTUAL LIGHTING LEVEL AFTER INSTALLATION DUE TO VARIATIONS IN LED PERFORMANCE/FIXTURE PERFORMANCE, NEW OBSTRUCTIONS, ETC. INITIAL FOOTCANDLE LEVELS SHOULD BE AS HIGH AS THE FIXTURE CAN PERFORM BECAUSE THE FOOTCANDLE VALUES SHOWN ARE CALCULATED USING "INITIAL" LED LUMENS (100% LED OUTPUT).
- FIXTURE TYPE(S), QUANTITY AND LOCATIONS SHOWN ON THIS PLAN ARE HAVE BEEN SPECIFIED IN ORDER TO BE IN COMPLIANCE WITH CITY OF VENICE LIGHTING REQUIREMENTS. REFER TO THE SITE LIGHTING PLANS FOR CIRCUITING AND OTHER REQUIREMENTS.
- THE LIGHTING LEVELS SHOWN ARE IN FOOTCANDLES AND SITE REFLECTANCES (DIRECT, INDIRECT AS WELL AS THE EXTERIOR BUILDING LIGHTING) ARE NOT CONSIDERED IN THESE VALUES.
- BUILDING CONSTRUCTION DRAWINGS SHOULD BE USED IN CONJUNCTION WITH THESE PLANS.
- THE NEW FIXTURES SHOWN HAVE BEEN SPECIFIED AS LED TYPE FIXTURES WITH SHARP CUTOFF LIGHTING DISTRIBUTIONS. ALL FIXTURES SHALL HAVE FULL HORIZONTAL CUT-OFF OPTICS.
- IN SUMMARY, THE CALCULATED VALUES SHOWN ARE BELIEVED TO BE IN COMPLIANCE WITH CITY OF VENICE LIGHTING ORDINANCE

CITY OF VENICE OUTDOOR LIGHTING REQUIREMENTS	
MAXIMUM ILLUMINATION LEVELS AT THE PROPERTY LINES (NONRESIDENTIAL DISTRICT)	MAXIMUM POLE/LIGHT FIXTURE HEIGHT
1.0 FC	30 FEET

STATISTICS					
DESCRIPTION	AVERAGE	MAXIMUM	MINIMUM	MAX/MIN	AVG/MIN
CALC ZONE #1	1.5 FC	1.8 FC	1.0 FC	1.8:1	1.5:1
CALC ZONE #2	1.4 FC	2.1 FC	0.8 FC	2.6:1	1.8:1
CALC ZONE #3	1.5 FC	2.0 FC	0.7 FC	2.9:1	2.1:1
CALC ZONE #4	1.8 FC	2.7 FC	0.6 FC	4.5:1	3.0:1
CALC ZONE #5	1.4 FC	1.9 FC	0.2 FC	9.5:1	7.0:1

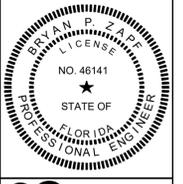


1 ENLARGED SITE PHOTOMETRICS  
NO SCALE



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FL LICENSE # 46141



**ME3**  
CONSULTING ENGINEERS, LLC  
3300 Parkway Lane  
Suite 104  
Boca Raton, FL 33433  
Tel: 561-993-1818 Fax: 561-993-1221  
bryanz@me3-engr.com  
www.me3-engr.com  
C.O.A. 27582

PROJECT: **AJAX PAVING VENICE AREA LIGHTING DESIGN**  
TITLE: 1 AJAX DRIVE, NORTH VENICE, FL 34275

ISSUED FOR: **PERMIT SET**  
DATE: **09/30/2025**

REV	DESCRIPTION	DATE
3	REV 4 TRC	11-3-26
2	REV 3 TRC	12-17-25
1	REV 2 TRC	11-6-25

SCALE: As indicated

PROJECT MANAGER: -

DRAWN BY: GPC

A/E OF RECORD: BPZ

PROJECT NO: 25-1446

SHEET TITLE: **SITE PHOTOMETRICS - CALCULATION ZONES AND STATISTICS**

SHEET No.: **E2.1**

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ENGINEER'S NOTE

AFTER REVIEWING THE PLANNING AND ZONING DEPARTMENT COMMENTS ON THE LIGHTING PLANS, ITEM "4" REFERENCES CHAPTER 87, SECTION 3.9.3.A.8, WHICH ADDRESSES PARKING AREA LIGHTING AND PERMITTED POLE HEIGHTS.

DUE TO THE INDUSTRIAL NATURE OF THIS PARKING AREA, THE STANDARD LIGHT POLE HEIGHTS SPECIFIED IN THE CITY OF VENICE CODE (12-15 FEET) ARE INSUFFICIENT TO PROVIDE UNIFORM AND EFFECTIVE ILLUMINATION. THIS PARKING LOT IS INTENDED FOR CONSTRUCTION AND INDUSTRIAL TRUCKS, WHICH AVERAGE APPROXIMATELY 12 FEET IN HEIGHT. TO ENSURE ADEQUATE LIGHT DISTRIBUTION AND SAFETY, THE PROPOSED LIGHT POLE HEIGHTS EXCEED THE STANDARD RANGE.

THE PHOTOMETRIC ANALYSIS DEMONSTRATES THAT LIGHT SPILLAGE BEYOND THE PROPERTY BOUNDARIES REMAINS WITHIN ACCEPTABLE LIMITS. ALL FIXTURES LOCATED ALONG THE PARCEL PERIMETER WILL INCLUDE EXTERNAL GLARE SHIELDS TO PREVENT LIGHT TRESPASS ONTO ADJACENT PROPERTIES.

HOURS OF OPERATION

PARKING AREA HOURS: HOURS OF OPERATION ARE FROM 7AM TO 5PM.

FIXTURE SUBSTITUTION REQUIREMENTS

THE FIXTURES SHOWN ON THIS PHOTOMETRIC PLAN (SCHEDULE) ARE THE PREFERRED LIGHTING FIXTURES FOR THIS PROJECT. THE LIGHTING DESIGN CRITERIA IS VERY STRICT. OTHER MANUFACTURER'S FIXTURES (EQUIVALENT SUBSTITUTIONS) WILL ONLY BE CONSIDERED BY THE ARCHITECT AND ENGINEER FOR THIS PROJECT IF THEY MEET THE FOLLOWING CRITERIA:

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- THE INPUT WATTS OF THE EQUIVALENT FIXTURE MUST BE NO MORE THAN THE INPUT WATTAGE OF THE BASIS OF DESIGN FIXTURE WHEN COMPARED TO THE BASIS OF DESIGN FIXTURE.
- THE ELECTRICAL SUBCONTRACTOR MUST PREPARE A POINT-BY-POINT PHOTOMETRIC CALCULATION OF THE SITE AS SHOWN ON THIS DRAWING SHEET FOR REVIEW BY THE ENGINEER (WITH CALCULATION SUMMARY). THE CALCULATED LIGHTING LEVELS MUST NOT BE GREATER THAN IS SHOWN ON THE BASIS OF DESIGN PLAN.

IT WILL BE A RESPONSIBILITY OF THE ELECTRICAL SUBCONTRACTOR TO PROVIDE A CLEAR AND CONCISE SUMMARY OF RESULTS (TABLE/ CHART) FOR THE ENGINEER TO REVIEW IN ORDER TO ASSIST IN DETERMINING THE ACTUAL FIXTURE EQUIVALENTS. THE ENGINEER WILL NOT REVIEW MORE THAN ONE SUMMARY IN ORDER TO DETERMINE THE EQUIVALENT FIXTURES (ONE SUMMARY INCLUDES A REJECTION; NO FOLLOW UP PERMITTED) AND IF THE SUBMITTED PHOTOMETRIC PLAN MEETS THE CRITERIA INDICATED ABOVE. HOWEVER, EACH SUBSEQUENT REVIEW WILL REQUIRE A PAYMENT OF \$1,500.00 TO THE ENGINEER OF RECORD FOR THE ENGINEER'S REVIEW TIME AND RESUBMITTAL FOR PERMIT. ANY AND ALL SUBSTITUTIONS ARE NOT GUARANTEED TO BE CONSIDERED EQUIVALENT AND THE DECISION OF THE ARCHITECT AND ENGINEER IS FINAL.

PHOTOMETRIC PLAN GENERAL NOTES

A. FOOTCANDLES VALUES SHOWN ARE CALCULATED USING SPECIFIED SITE LIGHTING FIXTURE(S) AND MAY NOT REPRESENT ACTUAL LIGHTING LEVEL AFTER INSTALLATION DUE TO VARIATIONS IN LED PERFORMANCE/FIXTURE PERFORMANCE, NON OBSTRUCTIONS, ETC. INITIAL FOOTCANDLE LEVELS SHOULD BE AS HIGH AS THE FIXTURE CAN PERFORM BECAUSE THE FOOTCANDLE VALUES SHOWN ARE CALCULATED USING "INITIAL" LED LUMENS (100% LED OUTPUT).

B. FIXTURE TYPE(S), QUANTITY AND LOCATIONS SHOWN ON THIS PLAN ARE HAVE BEEN SPECIFIED IN ORDER TO BE IN COMPLIANCE WITH CITY OF VENICE LIGHTING REQUIREMENTS. REFER TO THE SITE LIGHTING PLANS FOR CIRCUITING AND OTHER REQUIREMENTS.

C. THE LIGHTING LEVELS SHOWN ARE IN FOOTCANDLES AND SITE REFLECTANCES (DIRECT, INDIRECT AS WELL AS THE EXTERIOR BUILDING LIGHTING) ARE NOT CONSIDERED IN THESE VALUES.

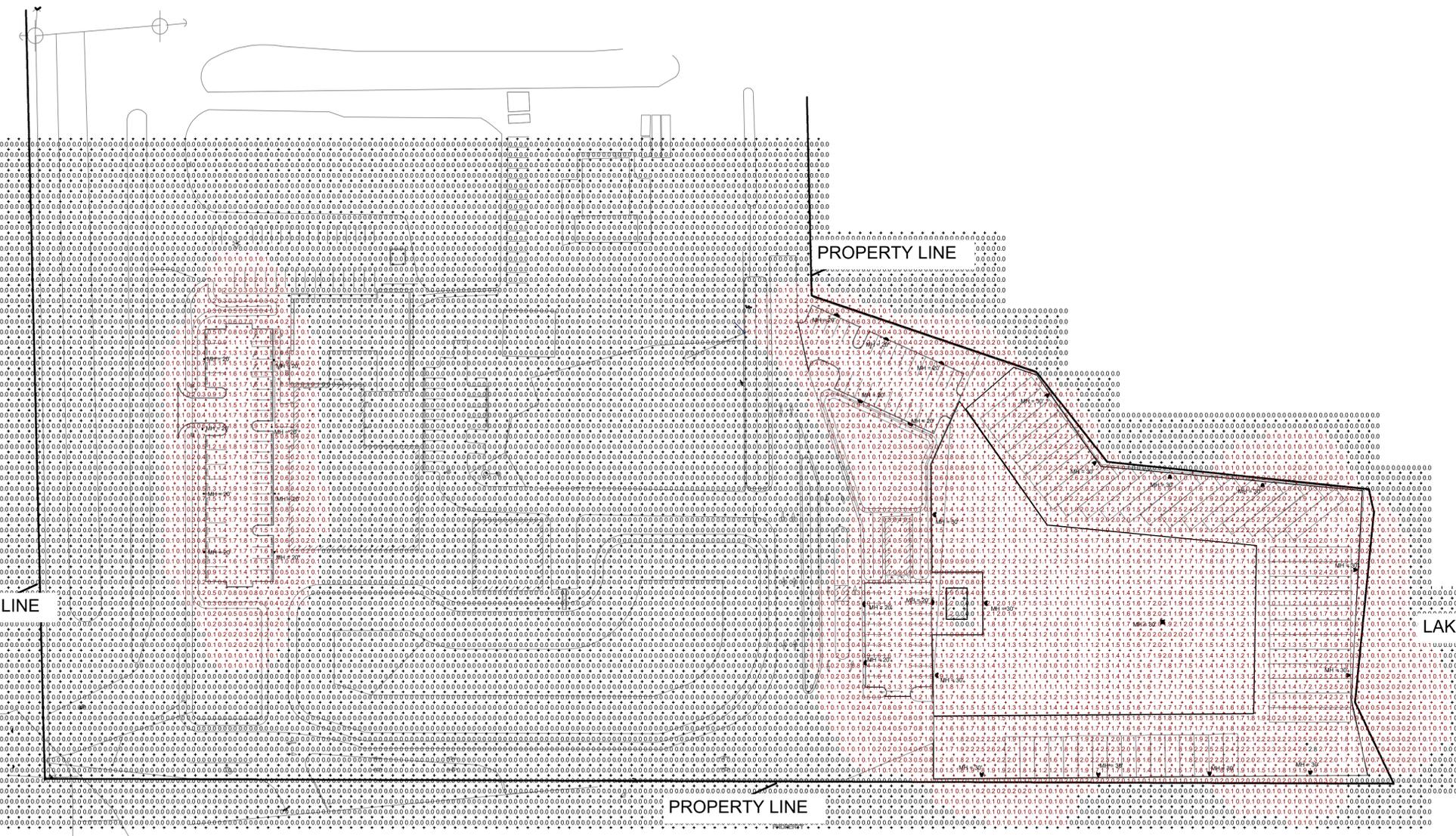
D. BUILDING CONSTRUCTION DRAWINGS SHOULD BE USED IN CONJUNCTION WITH THESE PLANS.

E. THE NEW FIXTURES SHOWN HAVE BEEN SPECIFIED AS LED TYPE FIXTURES WITH SHARP CUTOFF LIGHTING DISTRIBUTIONS. ALL FIXTURES SHALL HAVE FULL HORIZONTAL CUT-OFF OPTICS.

F. IN SUMMARY, THE CALCULATED VALUES SHOWN ARE BELIEVED TO BE IN COMPLIANCE WITH CITY OF VENICE LIGHTING ORDINANCE

STATISTICS table with columns: DESCRIPTION, AVERAGE, MAXIMUM, MINIMUM, MAX/MIN, AVG/MIN. Rows include CALC ZONE #1 through #5 with corresponding values.

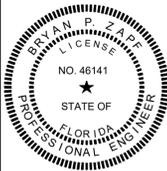
CITY OF VENICE OUTDOOR LIGHTING REQUIREMENTS table with columns: MAXIMUM ILLUMINATION LEVELS AT THE PROPERTY LINES (NONRESIDENTIAL DISTRICT), MAXIMUM POLE/LIGHT FIXTURE HEIGHT. Values: 1.0 FC, 30 FEET.



1 ENLARGED SITE PHOTOMETRICS - ENTIRE PARCEL AND SPILLAGE NO SCALE

NEIGHBOR PROPERTY WATER TREATMENT PLAN

BRYAN P. ZAPF, P.E. FL LICENSE # 46141



ME3 CONSULTING ENGINEERS, LLC 5300 Parkway Lane Suite 100 Jacksonville, FL 32256 bzapf@me3-engr.com www.me3-engr.com C.O.A. 27562

PROJECT: AJAX PAVING VENICE AREA LIGHTING DESIGN TITLE: 1 AJAX DRIVE, NORTH VENICE, FL 34275

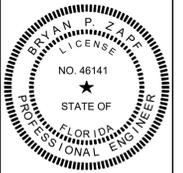
ISSUED FOR: PERMIT SET 09/30/2025

Revision table with columns: REV, DESCRIPTION, DATE. Rows: 3 REV 4 TRC 1-13-26, 2 REV 3 TRC 12-17-25, 1 REV 2 TRC 11-6-25

GRAPHIC SCALE: As indicated. PROJECT MANAGER: GPC. A/E OF RECORD: BPZ. PROJECT NO: 25-1446. SHEET TITLE: SITE PHOTOMETRICS ENTIRE PARCEL AND SPILLAGE. SHEET No.: E2.2

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CONSULTING ENGINEERS, LLC  
5300 Parkway Lane  
Suite 104  
Burlington, FL 32610  
Phone: 352-246-1818 Fax: 352-246-1819  
bryanzapf@me3-engr.com  
www.me3-engr.com  
C.O.A. 27562

PROJECT: **AJAX PAVING VENICE AREA LIGHTING DESIGN**  
TITLE: 1 AJAX DRIVE, NORTH VENICE, FL 34275

ISSUED FOR: **PERMIT SET**  
DATE: **09/30/2025**

3	REV 4 TRC	1-13-26
2	REV 3 TRC	12-17-25
1	REV 2 TRC	11-6-25
REV	DESCRIPTION	DATE
GRAPHIC SCALE:		
SCALE: As indicated		
PROJECT MANAGER:		
DRAWN BY: GPC		
A/E OF RECORD: BPZ		
PROJECT NO: 25-1446		
SHEET TITLE: LIGHTING DETAILS		
SHEET No.: <b>E4.1</b>		

## D-Series Size 0 LED Area Luminaire



**Specifications**  
EPA: 0.44 ft<sup>2</sup> (0.04 m<sup>2</sup>)  
Length: 26.18" (66.5 cm)  
Width: 14.06" (35.7 cm)  
Height H1: 2.26" (5.7 cm)  
Height H2: 7.46" (18.9 cm)  
Weight: 23 lbs (10.4 kg)

**Introduction**  
The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire. The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

**Ordering Information** EXAMPLE: DSX0 LED P6 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DBBXD

Series	LEDs	Color temperature <sup>1</sup>	Color Rendering Index	Distribution	Mounting	Shipped included
DSX0 LED	<b>Forward optics</b> (this section 70CRI only)					
	P1	P5	30K 3000K	70CRI	AFR Automotive front row	MVOLT (120V-277V) <sup>1,2</sup>
	P2	P6	40K 4000K	70CRI	T1S Type I short	WVOLT (277V-480V) <sup>1,2</sup>
	P3	P7	50K 5000K	70CRI	T2M Type II medium	SPK Square pole mounting (48 drilling, 1.5" min. 5/2 pole)
	P4	P9	50K 5000K	70CRI	T3M Type III medium	RPA Round pole mounting (48 drilling, 3" min. 9/16 pole)
	<b>Rotated optics</b>					
	P10 <sup>1</sup>	P12 <sup>1</sup>	27K 2700K	80CRI	T3LG Type III low glare <sup>1</sup>	SPKS Square pole mounting (45 drilling, 3" min. 5/2 pole) <sup>1</sup>
	P11 <sup>1</sup>	P13 <sup>1</sup>	30K 3000K	80CRI	T4M Type IV medium	RPA5 Round pole mounting (45 drilling, 3" min. 9/16 pole) <sup>1</sup>
			35K 3500K	80CRI	T4LG Type IV low glare <sup>1</sup>	SPM5 Square narrow pole mounting (48 drilling, 3" min. 5/2 pole)
			40K 4000K	80CRI	T5M Type V medium	WBA Wall bracket <sup>10</sup>
			50K 5000K	80CRI	T5TM Forward throw medium	MA Mast arm adapter (mounts on 2.38" OD horizontal tenon)

**Control options**

Control options	Other options	Finish options	Generation options
<b>Shipped installed</b>			
NLTAIR2 PIRHN	PER7 Seven-pin receptacle only (control ordered separately) <sup>1,10</sup>	DBRZ Dark Bronze	G1 Generation 1
PIR	FAO Field adjustable output <sup>1,10</sup>	DBLD Black	
PER	BL30 Bi-level switched dimming, 30% <sup>1,10</sup>	DNXD Natural Aluminum	
PER5	BLSO Bi-level switched dimming, 50% <sup>1,10</sup>	DWHD White	
	DWC 0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately) <sup>11</sup>	DWDD Textured dark bronze	
	HA 50°C ambient operation <sup>12</sup>	DBLX Textured dark bronze	
	BAA Buy America(s) Act and/or Build America Buy America Qualified	DBLW Textured black	
	DF Double fuse (208, 240, 480V) <sup>14</sup>	DNATD Textured natural aluminum	
	DF Double fuse (120, 277, 347V) <sup>14</sup>	DWNGD Textured white	
	EGSR External Glass Shield (weather, field install required, matches housing finish)		
	ESB0 Bird Spikes (field install required)		

**Shipped separately**

Control options	Other options	Finish options	Generation options
PER7	SPD20KV 20KV surge protection	DBRZ Dark Bronze	G1 Generation 1
FAO	HS House-side shield (black finish standard) <sup>13</sup>	DBLD Black	
BL30	L90 Left rotated optics <sup>1</sup>	DNXD Natural Aluminum	
BLSO	R90 Right rotated optics <sup>1</sup>	DWHD White	
DWC	CCO Coastal Construction <sup>15</sup>	DWDD Textured dark bronze	
HA	CCE Coastal Construction <sup>15</sup>	DBLX Textured dark bronze	
BAA	HA 50°C ambient operation <sup>12</sup>	DBLW Textured black	
DF	BAA Buy America(s) Act and/or Build America Buy America Qualified	DNATD Textured natural aluminum	
DF	SF Single fuse (120, 277, 347V) <sup>14</sup>	DWNGD Textured white	
EGSR	DF Double fuse (208, 240, 480V) <sup>14</sup>		
ESB0	EGSR External Glass Shield (weather, field install required, matches housing finish)		
	ESB0 Bird Spikes (field install required)		

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## D-Series Size 1 LED Area Luminaire



**Specifications**  
EPA: 0.69 ft<sup>2</sup> (0.06 m<sup>2</sup>)  
Length: 32.71" (83.1 cm)  
Width: 14.26" (36.2 cm)  
Height H1: 7.88" (20.0 cm)  
Height H2: 2.73" (6.9 cm)  
Weight: 34 lbs (15.4 kg)

**Introduction**  
The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire. The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

**Ordering Information** EXAMPLE: DSX1 LED P7 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DBBXD

Series	LEDs	Color temperature <sup>1</sup>	Color Rendering Index	Distribution	Mounting	Shipped included
DSX1 LED	<b>Forward optics</b> (this section 70CRI only)					
	P1	P6	30K 3000K	70CRI	AFR Automotive front row	MVOLT (120V-277V) <sup>1,2</sup>
	P2	P7	40K 4000K	70CRI	T1S Type I short	WVOLT (277V-480V) <sup>1,2</sup>
	P3	P8	50K 5000K	70CRI	T2M Type II medium	SPK Square pole mounting (48 drilling, 1.5" min. 5/2 pole)
	P4	P9	50K 5000K	70CRI	T3M Type III medium	RPA Round pole mounting (48 drilling, 3" min. 9/16 pole)
	<b>Rotated optics</b>					
	P10 <sup>1</sup>	P12 <sup>1</sup>	27K 2700K	80CRI	T3LG Type III low glare <sup>1</sup>	SPKS Square pole mounting (45 drilling, 3" min. 5/2 pole) <sup>1</sup>
	P11 <sup>1</sup>	P13 <sup>1</sup>	30K 3000K	80CRI	T4M Type IV medium	RPA5 Round pole mounting (45 drilling, 3" min. 9/16 pole) <sup>1</sup>
			35K 3500K	80CRI	T4LG Type IV low glare <sup>1</sup>	SPM5 Square narrow pole mounting (48 drilling, 3" min. 5/2 pole)
			40K 4000K	80CRI	T5M Type V medium	WBA Wall bracket <sup>10</sup>
			50K 5000K	80CRI	T5TM Forward throw medium	MA Mast arm adapter (mounts on 2.38" OD horizontal tenon)

**Control options**

Control options	Other options	Finish options	Generation options
<b>Shipped installed</b>			
NLTAIR2 PIRHN	PER7 Seven-pin receptacle only (control ordered separately) <sup>1,10</sup>	DBRZ Dark Bronze	G1 Generation 1
PIR	FAO Field adjustable output <sup>1,10</sup>	DBLD Black	
PER	BL30 Bi-level switched dimming, 30% <sup>1,10</sup>	DNXD Natural Aluminum	
PER5	BLSO Bi-level switched dimming, 50% <sup>1,10</sup>	DWHD White	
	DWC 0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately) <sup>11</sup>	DWDD Textured dark bronze	
	HA 50°C ambient operation <sup>12</sup>	DBLX Textured dark bronze	
	BAA Buy America(s) Act and/or Build America Buy America Qualified	DBLW Textured black	
	DF Double fuse (208, 240, 480V) <sup>14</sup>	DNATD Textured natural aluminum	
	DF Double fuse (120, 277, 347V) <sup>14</sup>	DWNGD Textured white	
	EGSR External Glass Shield (weather, field install required, matches housing finish)		
	ESB0 Bird Spikes (field install required)		

**Shipped separately**

Control options	Other options	Finish options	Generation options
PER7	SPD20KV 20KV surge protection	DBRZ Dark Bronze	G1 Generation 1
FAO	HS House-side shield (black finish standard) <sup>13</sup>	DBLD Black	
BL30	L90 Left rotated optics <sup>1</sup>	DNXD Natural Aluminum	
BLSO	R90 Right rotated optics <sup>1</sup>	DWHD White	
DWC	CCO Coastal Construction <sup>15</sup>	DWDD Textured dark bronze	
HA	CCE Coastal Construction <sup>15</sup>	DBLX Textured dark bronze	
BAA	HA 50°C ambient operation <sup>12</sup>	DBLW Textured black	
DF	BAA Buy America(s) Act and/or Build America Buy America Qualified	DNATD Textured natural aluminum	
DF	SF Single fuse (120, 277, 347V) <sup>14</sup>	DWNGD Textured white	
EGSR	DF Double fuse (208, 240, 480V) <sup>14</sup>		
ESB0	EGSR External Glass Shield (weather, field install required, matches housing finish)		
	ESB0 Bird Spikes (field install required)		

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## D-Series Size 2 Legacy LED Area Luminaire



**Specifications**  
EPA: 1.1 ft<sup>2</sup> (0.10 m<sup>2</sup>)  
Length: 40" (101.6 cm)  
Width: 15" (38.1 cm)  
Height 1: 7.1/4" (18.4 cm)  
Height 2: 3.5" (8.9 cm)  
Weight: 36lbs

**Introduction**  
The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire. The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

**Ordering Information** EXAMPLE: DSX2 LED P7 40K T3M MVOLT SPA NLTAIR2 PIRHN DBBXD G1

Series	LEDs	Color temperature	Distribution	Voltage	Mounting	Shipped included
DSX2 LED	<b>Forward optics</b>					
	P1	P5	30K 3000K	T1S Type I Short (Microzone)	MVOLT <sup>1</sup>	SPK Square pole mounting (48 drilling)
	P2	P6	40K 4000K	T2S Type II Short	WVOLT (277V-480V) <sup>1,2</sup>	RPA Round pole mounting (48 drilling)
	P3	P7	50K 5000K	T3S Type III Short	T2M Type II Medium	RPA5 Round pole mounting (45 drilling)
	P4	P8	50K 5000K	T4S Type IV Short	T3M Type III Medium	SPKS Square pole mounting (45 drilling, 3" min. 5/2 pole) <sup>1</sup>
	<b>Rotated optics</b>					
	P10 <sup>1</sup>	P12 <sup>1</sup>	27K 2700K	T3LG Type III Low Glare	T4M Type IV Medium	RPA5 Round pole mounting (45 drilling, 3" min. 9/16 pole) <sup>1</sup>
	P11 <sup>1</sup>	P13 <sup>1</sup>	30K 3000K	T4LG Type IV Low Glare	T5M Type V Medium	WBA Wall bracket <sup>10</sup>
	P14 <sup>1</sup>	P15 <sup>1</sup>	35K 3500K	T5LG Type V Low Glare	T5TM Forward Throw Medium	MA Mast arm adapter (mounts on 2.38" OD horizontal tenon)
	P16 <sup>1</sup>	P17 <sup>1</sup>	40K 4000K	T6LG Type VI Low Glare		
	P18 <sup>1</sup>	P19 <sup>1</sup>	50K 5000K	T7LG Type VII Low Glare		

**Control options**

Control options	Other options	Finish options	Generation options
<b>Shipped installed</b>			
NLTAIR2	PER7 Seven-pin receptacle only (control ordered separately) <sup>1,10</sup>	DBRZ Dark Bronze	G1 Generation 1
PIRHN	FAO Field adjustable output <sup>1,10</sup>	DBLD Black	
PIR	BL30 Bi-level switched dimming, 30% <sup>1,10</sup>	DNXD Natural Aluminum	
PER5	BLSO Bi-level switched dimming, 50% <sup>1,10</sup>	DWHD White	
	DWC 0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately) <sup>11</sup>	DWDD Textured dark bronze	
	HA 50°C ambient operation <sup>12</sup>	DBLX Textured dark bronze	
	BAA Buy America(s) Act and/or Build America Buy America Qualified	DBLW Textured black	
	DF Double fuse (208, 240, 480V) <sup>14</sup>	DNATD Textured natural aluminum	
	DF Double fuse (120, 277, 347V) <sup>14</sup>	DWNGD Textured white	
	EGSR External Glass Shield (weather, field install required, matches housing finish)		
	ESB0 Bird Spikes (field install required)		

**Shipped separately**

Control options	Other options	Finish options	Generation options
PER7	SPD20KV 20KV surge protection	DBRZ Dark Bronze	G1 Generation 1
FAO	HS House-side shield (black finish standard) <sup>13</sup>	DBLD Black	
BL30	L90 Left rotated optics <sup>1</sup>	DNXD Natural Aluminum	
BLSO	R90 Right rotated optics <sup>1</sup>	DWHD White	
DWC	CCO Coastal Construction <sup>15</sup>	DWDD Textured dark bronze	
HA	CCE Coastal Construction <sup>15</sup>	DBLX Textured dark bronze	
BAA	HA 50°C ambient operation <sup>12</sup>	DBLW Textured black	
DF	BAA Buy America(s) Act and/or Build America Buy America Qualified	DNATD Textured natural aluminum	
DF	SF Single fuse (120, 277, 347V) <sup>14</sup>	DWNGD Textured white	
EGSR	DF Double fuse (208, 240, 480V) <sup>14</sup>		
ESB0	EGSR External Glass Shield (weather, field install required, matches housing finish)		
	ESB0 Bird Spikes (field install required)		

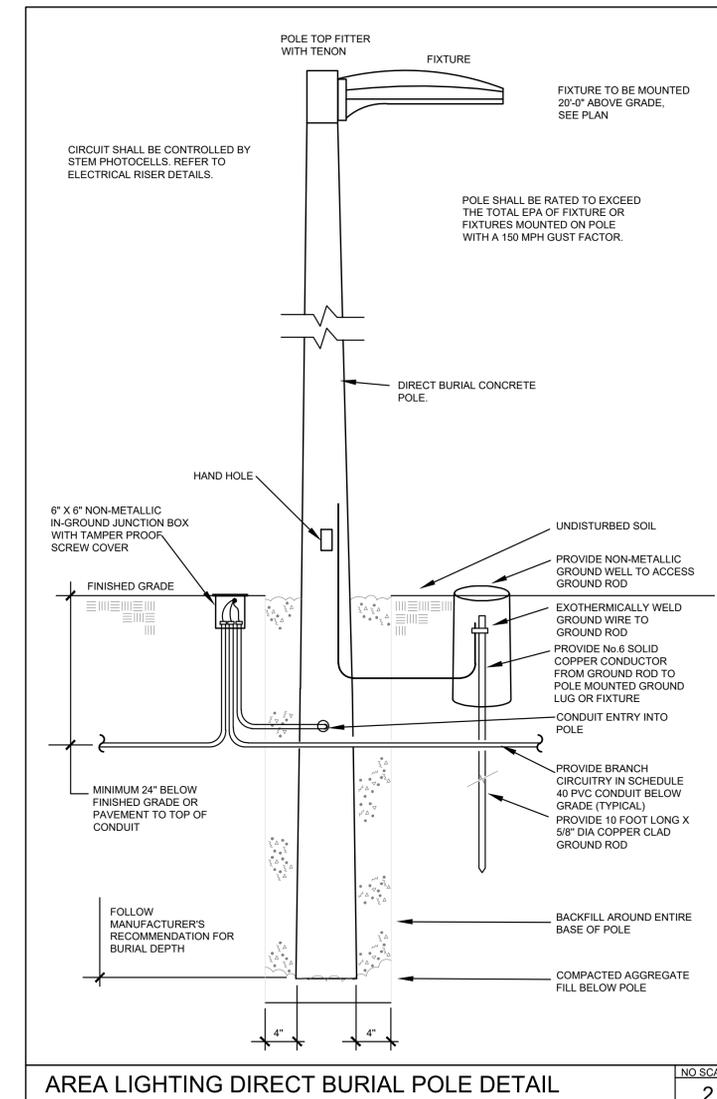
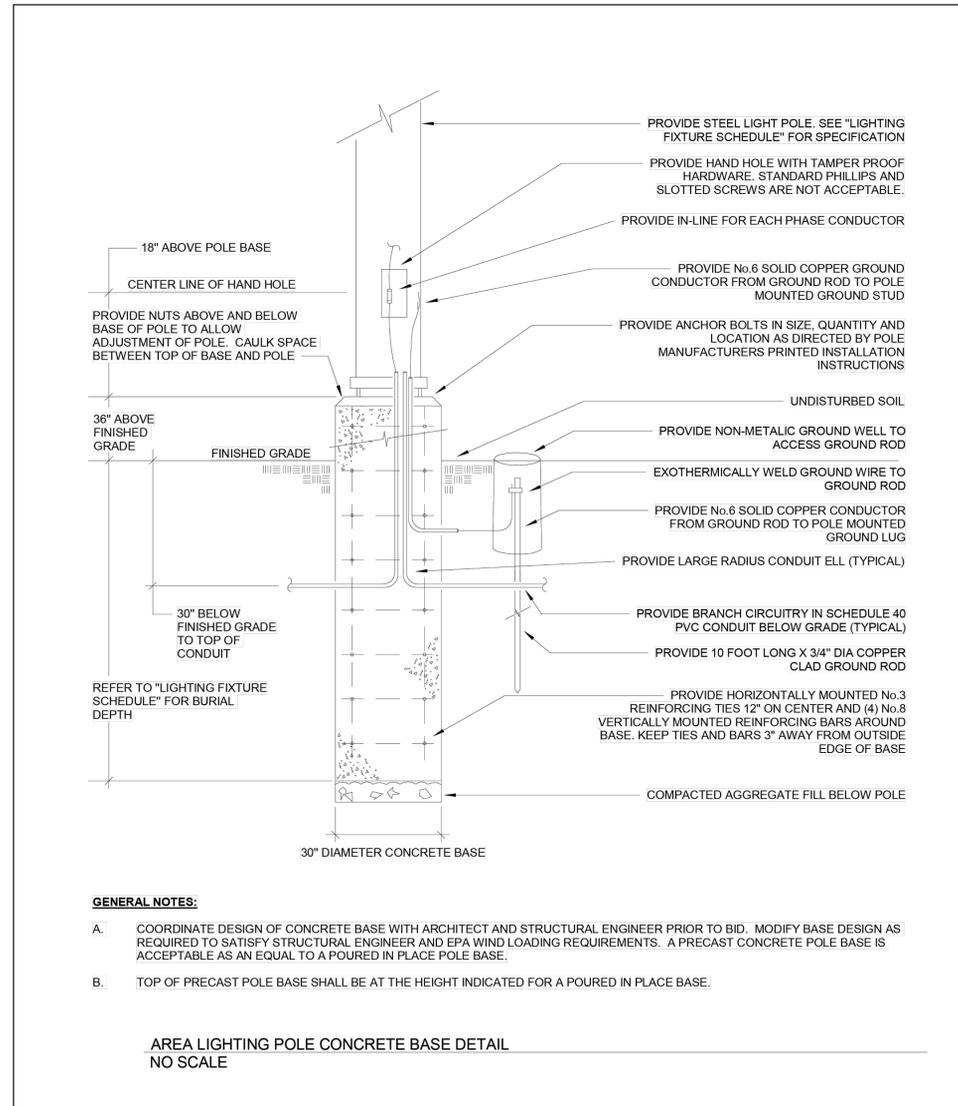
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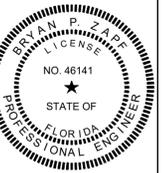
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**PROPOSED LIGHT FIXTURES FOR NEW PARKING AREAS**



THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY BRYAN P. ZAPF, P.E. ON THE DATE ADJACENT TO THE SEAL USING A SHA AUTHENTICATION CODE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SHA AUTHENTICATION CODE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

BRYAN P. ZAPF, P.E.  
FL LICENSE # 46141



**ME3**  
CONSULTING ENGINEERS, LLC  
5300 Parkway Lane  
Suite 100  
Boca Raton, FL 33496  
Tel: 561-991-1221  
Fax: 561-991-1221  
b.zapf@me3-engr.com  
www.me3-engr.com  
C.O.A. 27562

PROJECT TITLE: **AJAX PAVING VENICE AREA LIGHTING DESIGN**  
1 AJAX DRIVE, NORTH VENICE, FL 34275

ISSUED FOR: **PERMIT SET**  
09/30/2025

REV	DESCRIPTION	DATE
3	REV 4 TRC	1-13-26
2	REV 3 TRC	12-17-25
1	REV 2 TRC	11-6-25

GRAPHIC SCALE:  
SCALE: As indicated  
PROJECT MANAGER:  
DRAWN BY: GPC  
A/E OF RECORD: BPZ  
PROJECT NO: 25-1446  
SHEET TITLE:

LIGHTING DETAILS

SHEET No.: **E4.2**

**ELECTRICAL SPECIFICATIONS (DIVISION 26)**

**SCOPE OF WORK AND GENERAL CONDITIONS:**

THE SCOPE OF WORK SPECIFIED HEREIN CONSISTS OF PROVIDING (DEFINED AS FURNISH AND INSTALL) ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES REQUIRED TO COMPLETE THE ELECTRICAL AND RELATED WORK INDICATED ON THE DRAWINGS, AS SPECIFIED HEREIN AND SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT. ELECTRICAL WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

- PANELBOARDS
- CIRCUIT BREAKERS
- DISCONNECT SWITCHES
- GROUNDING
- RACEWAY FOR POWER DISTRIBUTION WIRING
- CONDUCTORS FOR POWER DISTRIBUTION
- WIRING DEVICES
- LIGHTING FIXTURES
- RACEWAY FOR COMMUNICATIONS WIRING (VOICE, DATA, CABLE TELEVISION)
- LIGHTNING PROTECTION
- CONNECTION OF MOTORS, CONTROL DEVICES AND ELECTRICAL EQUIPMENT FURNISHED BY OTHERS
- TESTING
- RECORD DRAWINGS

ITEMS SPECIFIED HEREIN, SHOWN ON THE DRAWINGS, AND/OR REASONABLY INTERPRETED FROM THE DRAWINGS THAT ARE NECESSARY TO COMPLETE THE ELECTRICAL WORK SHALL BE PROVIDED BY THIS DIVISION, WHETHER ITEM IS SPECIFICALLY SHOWN OR NOT.

**GENERAL:**

CONTRACTOR SHALL BECOME THOROUGHLY ACQUAINTED WITH THE PROJECT SITE (e.g. EXISTING CONDITIONS) AND THE ENTIRE CONSTRUCTION DOCUMENTS PACKAGE (e.g. ARCHITECTURAL, STRUCTURAL, CIVIL, MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL DRAWINGS AND SPECIFICATIONS) BEFORE BID SUBMISSION. WORK OF THE ELECTRICAL CONTRACTOR MUST BE COORDINATED WITH THE WORK OF ALL TRADES.

CONTRACTOR SHALL REVIEW THE ENTIRE CONSTRUCTION DOCUMENTS PACKAGE AND SHALL SEARCH FOR EQUIPMENT, LIGHTING FIXTURES, ETC THAT REQUIRE ELECTRICAL SERVICE THAT ARE NOT SHOWN ON THE ELECTRICAL DRAWINGS. CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO BID IF EQUIPMENT, LIGHTING FIXTURES, ETC REQUIRING ELECTRICAL SERVICE APPEAR ON THE DRAWINGS OF OTHER TRADES THAT DO NOT APPEAR ON THE ELECTRICAL DRAWINGS.

**INTENT:**

THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO DESCRIBE THAT COMPLETE ELECTRICAL AND SPECIAL SYSTEMS ARE REQUIRED. HOWEVER, THE WORK SHALL BE COMPLETE EVEN THOUGH ITEMS MAY NOT BE SPECIFICALLY CALLED FOR OR SHOWN. INSTALLATIONS SHALL MEET ALL GOVERNING CODES, SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT/ENGINEER AND ALL AGENCIES HAVING JURISDICTION.

**WORK NOT COVERED IN THIS SECTION:**

RECESSES, CHASES, AND OTHER PROVISIONS TO BE MADE IN THE STRUCTURE AS REQUIRED TO ACCOMMODATE ELECTRICAL ITEMS, SUCH AS CONDUIT, PANELS, SWITCHES, ETC. SHALL BE PROVIDED BY THE TRADES CONCERNED. THE ELECTRICIAN SHALL, HOWEVER, NOTIFY ALL SUCH TRADES OF HIS EXACT REQUIREMENTS AHEAD OF TIME AND SHALL PAY THE COSTS OF ANY CUTTING OR PATCHING CAUSED BY FAILURE TO DO SO. ALL SUCH REMEDIAL WORK SHALL BE DONE ONLY BY MECHANICS OF THE TRADES INVOLVED.

**CODES AND REGULATIONS**

- ALL MATERIALS FURNISHED AND ALL WORK INSTALLED SHALL COMPLY WITH THE FOLLOWING:
- NATIONAL ELECTRIC CODE 2020
  - 2023 FLORIDA BUILDING CODE
  - NATIONAL BUREAU OF FIRE UNDERWRITERS
  - REGULATIONS OF THE SERVING UTILITY COMPANIES

ALL MATERIAL AND EQUIPMENT PROVIDED FOR THE ELECTRICAL WORK SHALL BEAR THE APPROVAL LABEL, OR SHALL BE LISTED, BY UNDERWRITERS' LABORATORIES, INC.

**MEASUREMENTS:**

SHOULD THE CONTRACTOR DISCOVER ANY DISCREPANCY BETWEEN ACTUAL MEASUREMENTS AND THOSE INDICATED ON THE DRAWINGS, WHICH PREVENTS FOLLOWING GOOD PRACTICE OR THE INTENT OF THE DRAWINGS AND SPECIFICATIONS, HE SHALL NOTIFY THE ARCHITECT/ENGINEER THROUGH THE GENERAL CONTRACTOR, AND SHALL NOT PROCEED WITH HIS WORK UNTIL HE HAS RECEIVED INSTRUCTIONS FROM THE ARCHITECT/ENGINEER. ALL REQUESTS FOR INFORMATION (RFI) SHALL INCLUDE A PROPOSED SOLUTION.

PRIOR TO ROUGH-IN OF EQUIPMENT THE OWNER, ARCHITECT AND ENGINEER RESERVE THE RIGHT TO RELOCATE ANY PANELBOARD, DISCONNECT, STARTER, LIGHTING FIXTURE, WIRING DEVICE, COMMUNICATIONS OUTLET, ETC THREE (3) FEET IN ANY DIRECTION WITHOUT ANY ADDITIONAL CHARGE, FEE, OR CHANGE ORDER.

**DRAWINGS:**

DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION OF THE ELECTRICAL AND SPECIAL SYSTEMS WORK INCLUDED IN THE CONTRACT. THE ENTIRE CONSTRUCTION DOCUMENTS PACKAGE (DRAWINGS AND SPECIFICATIONS) SHALL BE EXAMINED FOR EXACT LOCATION OF FIXTURES, DEVICES AND EQUIPMENT. WHERE ITEMS ARE NOT LOCATED BY THE DRAWINGS OR SPECIFICATIONS OF OTHER CONSULTANTS THEN THE ITEMS SHALL BE LOCATED PER THE ENGINEERING DRAWINGS. HOWEVER, THE DRAWINGS ARE NOT TO BE SCALED.

CONTRACTOR SHALL FOLLOW THE ELECTRICAL DRAWINGS IN LAYING OUT WORK AND SHALL COORDINATE WITH THE DRAWINGS OF OTHER TRADES TO VERIFY SPACES IN WHICH WORK WILL BE INSTALLED. MAINTAIN MAXIMUM HEADROOM AND SPACE AT ALL LOCATIONS. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, THE ARCHITECT/ENGINEER SHALL BE NOTIFIED BEFORE PROCEEDING WITH INSTALLATION. ALL REQUESTS FOR INFORMATION (RFI) SHALL INCLUDE A PROPOSED SOLUTION.

IF DIRECTED BY THE ARCHITECT/ENGINEER, THE CONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE REASONABLE MODIFICATIONS IN THE LOCATIONS OF ELECTRICAL WORK AS NEEDED TO PREVENT CONFLICTS WITH WORK OF OTHER TRADES AND FOR PROPER INSTALLATION OF THE WORK.

COOPERATION WITH OTHER TRADES: REFER TO THE "NATIONAL ELECTRICAL CODE REQUIRED WORKING SPACE NOTES" INCLUDED WITH THESE CONSTRUCTION DOCUMENTS FOR ADDITIONAL COORDINATION REQUIREMENTS

CONTRACTOR SHALL GIVE FULL COOPERATION TO OTHER TRADES AND SHALL FURNISH IN WRITING TO THE ARCHITECT/ENGINEER ANY INFORMATION NECESSARY TO PERMIT THE WORK OF OTHER TRADES TO BE INSTALLED SATISFACTORILY AND WITH THE LEAST POSSIBLE INTERFERENCE OR DELAY.

WHERE ELECTRICAL WORK WILL BE INSTALLED IN CLOSE PROXIMITY TO, OR MAY INTERFERE WITH, WORK OF OTHER TRADES THE CONTRACTORS SHALL ASSIST EACH OTHER IN WORKING OUT A SATISFACTORY SPACE FOR EACH CONTRACTORS WORK. IF DIRECTED BY THE ARCHITECT/ENGINEER, THE CONTRACTOR SHALL PREPARE COMPOSITE WORKING DRAWINGS AND SECTIONS AT SUITABLE SCALE. NOT LESS THAN 1/4" = 1'-0", CLEARLY SHOWING HOW WORK IS TO BE INSTALLED IN RELATION TO WORK OF OTHER TRADES. IF THE CONTRACTOR INSTALLS HIS WORK BEFORE COORDINATING WITH OTHER TRADES, OR CAUSES ANY INTERFERENCE WITH WORK OF OTHER TRADES, THE CONTRACTOR SHALL MAKE THE NECESSARY CHANGES IN THE ELECTRICAL WORK TO CORRECT THE CONDITIONS WITHOUT EXTRA CHARGE.

CONTRACTOR SHALL FURNISH TO OTHER TRADES, AS REQUIRED, ALL NECESSARY TEMPLATES, PATTERNS, AND ASSEMBLY DETAILS FOR THE PROPER INSTALLATION OF WORK AND FOR THE PURPOSE OF COORDINATING ADJACENT WORK.

SCAFFOLDING, RIGGING, HOISTING: CONTRACTOR SHALL PROVIDE ALL SCAFFOLDING, RIGGING AND HOISTING NECESSARY FOR ERECTION AND DELIVERY INTO THE PREMISES OF ALL ELECTRICAL EQUIPMENT. REMOVE SAME FROM PREMISES WHEN NO LONGER REQUIRED.

**EXCAVATING AND BACKFILLING:**

CONTRACTOR SHALL PROVIDE ALL TRENCH AND PIT EXCAVATION AND BACKFILLING REQUIRED FOR WORK UNDER THIS SECTION OF THE SPECIFICATIONS, BOTH INSIDE AND OUTSIDE OF THE BUILDING, INCLUDING REPAIRING OF FINISHED SURFACES, ALL REQUIRED SHORING, BRACING, PUMPING, AND ALL PROTECTION FOR SAFETY OF PERSONS AND PROPERTY. LOCAL OR STATE SAFETY CODES SHALL BE FOLLOWED. IN ADDITION, THE CONTRACTOR SHALL CHECK THE ELEVATIONS OF THE UTILITIES ENTERING AND LEAVING THE BUILDING. IF SUCH ELEVATIONS REQUIRE EXCAVATIONS LOWER THAN THE FOOTING LEVELS, THE ARCHITECT/ENGINEER SHALL BE NOTIFIED OF SUCH CONDITIONS BEFORE EXCAVATIONS COMMENCE. CONTRACTOR SHALL MAKE EXCAVATIONS AT THE MINIMUM REQUIRED DEPTHS IN ORDER NOT TO UNDERCUT THE FOOTINGS. CONFORM TO THE REQUIREMENTS OF THE STATE OF FLORIDA "TRENCH SAFETY ACT". FILLING, BACKFILLING AND COMPACTION SHALL BE AS SPECIFIED IN OTHER AREAS OF THE CONTRACT DOCUMENTS AND SPECIFICATIONS.

**MATERIAL AND WORKMANSHIP:**

ALL MATERIALS AND APPARATUS REQUIRED FOR ELECTRICAL WORK, EXCEPT AS SPECIFICALLY NOTED OTHERWISE, SHALL BE NEW, OF FIRST CLASS QUALITY, AND SHALL BE FURNISHED, DELIVERED, ERECTED, CONNECTED AND FINISHED IN EVERY DETAIL AND SHALL BE SO SELECTED AND ARRANGED AS TO FIT PROPERLY INTO THE BUILDING SPACES. WHERE NO SPECIFIC KIND OR QUALITY OF MATERIAL IS GIVEN, A FIRST CLASS STANDARD ARTICLE, AS APPROVED BY THE ENGINEER, SHALL BE PROVIDED.

ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER. THIS INCLUDES THE PERFORMANCE OF ALL TESTS RECOMMENDED BY THE MANUFACTURER.

**SLEEVES AND PLATES:**

CONTRACTOR SHALL PROVIDE AND LOCATE ALL SLEEVES REQUIRED FOR ELECTRICAL WORK BEFORE THE FLOORS, WALLS AND CEILINGS ARE CONSTRUCTED, OR SHALL BE RESPONSIBLE FOR THE COST OF CUTTING AND PATCHING WHERE SLEEVES WERE NOT INSTALLED, OR WHERE INCORRECTLY LOCATED. CONTRACTOR SHALL PROVIDE ALL DRILLING REQUIRED FOR THE INSTALLATION OF HIS HANGERS. SLEEVES SHALL BE PROVIDED FOR ALL CONDUIT PASSING THROUGH CONCRETE FLOOR SLABS ABOVE GRADE AND CONCRETE, MASONRY, TILE AND GYPSUM WALL CONSTRUCTION.

WHERE CONDUIT SLEEVES ARE PLACED IN EXTERIOR WALLS BELOW GRADE, THE SPACE BETWEEN THE CONDUIT AND THE SLEEVES SHALL BE SEALED WATERTIGHT.

WHERE CONDUIT MOTION DUE TO EXPANSION AND CONTRACTION WILL OCCUR, PROVIDE SLEEVES OF SUFFICIENT DIAMETER TO PERMIT FREE MOVEMENT OF THE CONDUIT. CHECK FLOOR AND WALL CONSTRUCTION FINISHES TO DETERMINE PROPER LENGTH OF SLEEVES FOR VARIOUS LOCATIONS. PROVIDE ACTUAL LENGTHS TO SUIT THE FOLLOWING:

1. TERMINATE SLEEVES FLUSH WITH WALLS, PARTITIONS AND CEILING.
2. IN AREAS WHERE CONDUIT IS CONCEALED, AS IN CHASES, TERMINATE SLEEVES 1" ABOVE FLOOR.
3. IN AREAS WHERE CONDUIT IS EXPOSED, EXTEND SLEEVES 2" ABOVE FINISHED FLOOR.
4. SLEEVES SHALL BE CONSTRUCTED OF SCHEDULE 40 STEEL PIPE.

FASTEN SLEEVES SECURELY IN FLOORS AND WALLS SO THEY WILL NOT BECOME DISPLACED WHEN CONCRETE IS POURED OR WHEN OTHER CONSTRUCTION IS BUILT AROUND THEM. TAKE PRECAUTIONS TO PREVENT CONCRETE, PLASTER OR OTHER MATERIALS FROM BEING FORCED INTO THE SPACE BETWEEN PIPE AND SLEEVE DURING CONSTRUCTION.

**CUTTING AND PATCHING:**

CONTRACTOR SHALL PROVIDE ALL CUTTING AND PATCHING NECESSARY TO INSTALL ELECTRICAL WORK. PATCHING SHALL MATCH ADJACENT SURFACES AND SHALL MEET THE APPROVAL OF THE ARCHITECT AND OWNER.

NO STRUCTURAL MEMBERS SHALL BE CUT OR MODIFIED IN ANY WAY WITHOUT THE WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER. ANY MODIFICATION SHALL BE DONE IN A MANNER APPROVED BY THE STRUCTURAL ENGINEER.

**PENETRATIONS:**

ALL PENETRATIONS THROUGH FIRE RATED FLOORS, WALLS AND CEILINGS (IF ANY) SHALL BE PROVIDED WITH A U.L. APPROVED FIRESTOP RATED PENETRATION SYSTEM IN ACCORDANCE WITH NFPA 101, LIFE SAFETY CODE. REFER TO THE "FIRESTOP PENETRATION DETAILS".

PROVIDE WATERTIGHT ASSEMBLIES, MATERIALS, SEALANTS, ETC AROUND RACEWAY WHERE RACEWAY PASSES THROUGH INTERIOR/ EXTERIOR OF BUILDING AT BOTH ABOVE AND BELOW GROUND RACEWAY PENETRATION LOCATIONS.

**SERVICE ENTRANCE:**

SERVICE ENTRANCE SHALL BE OVERHEAD OR UNDERGROUND FROM THE POWER COMPANY TRANSFORMER OR OTHER SERVICE POINT TO THE SERVICE ENTRANCE METER/EQUIPMENT SHOWN ON THE ELECTRICAL RISER DIAGRAM AND/OR SITE PLAN. VOLTAGE/PHASE OF INCOMING POWER SHALL BE AS INDICATED ON THE ELECTRICAL RISER DIAGRAM AND SHOULD BE CONTRACTOR VERIFIED WITH THE UTILITY COMPANY PRIOR TO BID.

**SUBSTITUTION OF SPECIFIED EQUIPMENT:**

MATERIALS OR PRODUCTS SPECIFIED BY TRADE NAME, MANUFACTURER'S NAME OR CATALOG NUMBER SHALL BE PROVIDED AS SPECIFIED.

SUBSTITUTIONS ARE NOT PERMITTED WITHOUT WRITTEN APPROVAL TEN (10) WORKING DAYS PRIOR TO BID DATE FROM THE ENGINEER VIA THE ARCHITECT. APPROVALS OF EQUIVALENT MATERIALS OR PRODUCTS WILL BE MADE AVAILABLE TO ALL KNOWN BIDDERS AND ISSUED AS AN ADDENDUM (PRIOR TO BID) TO THE CONTRACT DOCUMENTS IF SUBSTITUTED MATERIALS OR PRODUCTS ARE APPROVED BY ARCHITECT/ENGINEER.

ANY CONTRACTOR PROPOSING AN EQUIVALENT MATERIAL OR PRODUCT MUST SUBMIT, WITH THE REQUEST, COMPLETE CATALOG INFORMATION TO PERMIT EVALUATION OF THE PRODUCT. IN THE CASE OF LIGHTING FIXTURES, AN INDEPENDENT TESTING LABORATORY TEST REPORT (NOT THE MANUFACTURER'S) STATING FIXTURE EFFICIENCY AND PERFORMANCE, SHALL ACCOMPANY THE REQUEST.

CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE CORRECTIONS TO ALL SITUATIONS CREATED BY THE SUBSTITUTION OF MATERIALS OR PRODUCTS. THE ACCEPTANCE OF SUBSTITUTED MATERIALS OR PRODUCTS, EITHER PRIOR TO BID OR THEREAFTER, DOES NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY TO PROVIDE CORRECTIONS, AT HIS/HER EXPENSE, FOR ALL DISCREPANCIES AND CONFLICTS CREATED BY THE SUBSTITUTION OF MATERIALS OR PRODUCTS.

**POWER DISTRIBUTION SYSTEM:**

FLOOR PLANS, RISER DIAGRAM AND SPECIFICATIONS REQUIRE A NEW OR EXISTING MODIFIED CODE COMPLIANT POWER DISTRIBUTION SYSTEM.

**PANELBOARDS:**

PROVIDE POWER DISTRIBUTION EQUIPMENT AS INDICATED ON THE ELECTRICAL RISER DIAGRAM AND PANEL SCHEDULES. PANELBOARDS SHALL BE OF DEAD FRONT CONSTRUCTION AND SHALL BE MANUFACTURED BY SQUARE "D", CUTLER-HAMMER OR SIEMENS.

PANELBOARDS SHALL NOT BE LESS THAN 20" WIDE AND SHALL BE FABRICATED FROM CODE GAUGE STEEL WITH A POST FABRICATION APPLIED GRAY ENAMEL FINISH.

PANELBOARD AND INTERNAL COMPONENTS SHALL BE CONSTRUCTED AND U.L. LISTED TO WITHSTAND THE SYMMETRICAL SHORT CIRCUIT AMPERES INDICATED ON THE ELECTRICAL RISER DIAGRAM OR PANEL SCHEDULES.

WIRE GUTTER SPACE SHALL COMPLY WITH U.L. AND NEC STANDARDS FOR PANELBOARDS.

PANELBOARDS SHALL BE SURFACE OR RECESS MOUNTED AS SHOWN ON PANEL SCHEDULES AND/OR FLOOR PLANS. PANEL SHALL BE EQUIPPED WITH RECESS MOUNTED HINGES AND KEY OPERATED LOCK. ALL LOCKS SHALL BE KEYED A LIKE. TURN OVER ALL KEYS TO OWNER.

PROVIDE TYPED CIRCUIT IDENTIFICATION CARD INSIDE EACH PANEL. BASE DESCRIPTION ON LOAD SERVED.

PROVIDE LAMINATED, ENGRAVED PLASTIC NAMEPLATE WITH WHITE LETTERS STATING PANELBOARD NAME MOUNTED ON FRONT OF EACH PANEL. MOUNT NAMEPLATE WITH METAL RIVETS. MINIMUM NAMEPLATE SIZE SHALL BE 3" WIDE BY 1-1/2" HIGH WITH 1/2" HIGH ENGRAVED LETTERS. PROVIDE BLACK NAMEPLATE COLOR FOR NORMAL AND RED NAMEPLATE COLOR FOR EMERGENCY PANELBOARDS OR PROVIDE COLOR AS REQUIRED TO MEET OWNERS STANDARD NAMEPLATE COLORS.

**CIRCUIT BREAKERS:**

CIRCUIT BREAKERS SHALL BE QUICK-MAKE, QUICK-BREAK, THERMAL MAGNETIC MOLDED CASE OF FRAME SIZE. NUMBER OF POLES AND TRIP RATINGS AS SHOWN ON THE ELECTRICAL RISER DIAGRAM AND/OR PANEL SCHEDULES. MULTI-POLE BREAKERS SHALL HAVE A SINGLE HANDLE TO TRIP ALL POLES AT ONCE. CIRCUIT BREAKERS SHALL BE FROM THE SAME MANUFACTURER AS THE POWER DISTRIBUTION EQUIPMENT. PROVIDE CIRCUIT BREAKERS WITH GROUND FAULT AND ARC FAULT PROTECTION WHERE REQUIRED.

**DISCONNECT SWITCHES:**

DISCONNECT SWITCHES SHALL BE U.L. LISTED AND FROM SAME MANUFACTURER AS POWER DISTRIBUTION EQUIPMENT. SWITCH BLADES SHALL BE FULLY VISIBLE IN THE "OFF" POSITION WITH THE DOOR OPEN. ALL CURRENT CARRYING PARTS SHALL BE PLATED TO RESIST CORROSION.

SWITCHES SHALL BE QUICK-MAKE, QUICK-BREAK SUCH THAT, DURING NORMAL OPERATION, THE CONTACTS SHALL NOT BE CAPABLE OF BEING RESTRAINED BY THE OPERATING HANDLE AFTER THE CLOSING OR OPENING ACTION OF THE CONTACTS HAS STARTED. THE HANDLE AND MECHANISM SHALL BE AN INTEGRAL PART OF THE BOX, NOT THE COVER, WITH POSITIVE PADLOCKING PROVISIONS IN THE "OFF" POSITION.

PROVIDE HEAVY-DUTY, NEMA-1 ENCLOSURE UNLESS NEMA-3R (RAIN PROOF) IS REQUIRED BY THE SWITCH LOCATION. ENCLOSURES SHALL BE PROVIDED WITH A POST FABRICATION APPLIED GRAY ENAMEL FINISH.

FUSIBLE SWITCHES SHALL BE CAPABLE OF FIELD CONVERSION FROM STANDARD CLASS-H FUSE SPACING TO CLASS-J FUSE SPACING WITHOUT AFFECTING THE U.L. LISTING. THE SWITCH MUST ALSO ACCEPT CLASS-R FUSES AND HAVE A FIELD INSTALLABLE U.L. LISTED REJECTION FEATURE TO REJECT ALL FUSES EXCEPT CLASS-R. THE U.L. LISTED SHORT CIRCUIT RATING, WHEN EQUIPPED WITH CLASS-J OR CLASS-R FUSES, SHALL BE 200,000 AMPERES RMS SYMMETRICAL.

ALL EQUIPMENT THAT PROVIDES THE ELECTRICAL SERVICE SHALL BE SERVICE ENTRANCE RATED.

**RACEWAY FOR POWER DISTRIBUTION WIRING:**

WIRING FOR POWER DISTRIBUTION SHALL BE INSTALLED IN RIGID GALVANIZED STEEL (RGS), INTERMEDIATE METAL CONDUIT (IMC), ELECTRICAL METALLIC TUBING (EMT), FLEXIBLE METAL CONDUIT OR SCHEDULE 40/80 PVC CONDUIT. PROVIDE THE CONDUIT TYPE INDICATED IN THIS SPECIFICATION WHERE CONDUIT TYPE IS NOT NOTED ON THE DRAWINGS.

RIGID GALVANIZED STEEL (RGS) CONDUIT WITH THREADED FITTINGS SHALL BE PROVIDED ABOVE GROUND AT EXPOSED INTERIOR AND EXTERIOR LOCATIONS WHERE CONDUIT MAY BE SUBJECT TO PHYSICAL DAMAGE FROM VEHICLES, MAINTENANCE EQUIPMENT, ETC. PROVIDE LARGE RADIUS SWEEP ELBOWS FOR RGS CONDUIT.

IMC CONDUIT WITH THREADED FITTINGS SHALL BE PROVIDED IN ABOVE GROUND, EXPOSED INTERIOR AND EXTERIOR LOCATIONS WHERE CONDUIT WILL NOT BE SUBJECT TO PHYSICAL DAMAGE, BUT WILL BE EXPOSED TO RAIN WATER, HAZARDOUS CONDITIONS, ETC. THREADED FITTINGS FOR IMC IS NOT ACCEPTABLE.

EMT CONDUIT WITH SET SCREW FITTINGS SHALL BE PROVIDED IN ABOVE GROUND INTERIOR LOCATIONS WHERE CONDUIT WILL NOT BE SUBJECT TO PHYSICAL DAMAGE AND WILL REMAIN COMPLETELY DRY DURING ALL WEATHER CONDITIONS.

EMT CONDUIT WITH COMPRESSION FITTINGS CAN BE PROVIDED IN PROTECTED, DAMP EXTERIOR LOCATIONS WHERE CONDUIT WILL NOT BE SUBJECT TO DIRECT/INDIRECT RAIN/WATER/LIQUIDS (E.G. UNDER CANOPIES). SET SCREW FITTINGS ARE NOT ACCEPTABLE FOR ANY EXTERIOR LOCATION. PROVIDE IMC CONDUIT WITH THREADED FITTINGS WHERE CONDUIT WILL BE EXPOSED TO DIRECT/INDIRECT RAIN/WATER/LIQUIDS.

MC CABLE MAY NOT BE USED.

SCHEDULE 40 PVC CONDUIT SHALL BE USED FOR ALL UNDERGROUND FEEDERS AND WIRING EXCEPT FOR SERVICE ENTRANCE FEEDERS AND UNDER ROADWAYS. PROVIDE LARGE RADIUS RIGID GALVANIZED STEEL ELBOWS FOR SCHEDULE 40 PVC CONDUIT WHERE OVERALL CONDUIT RUN IS GREATER THAN 100 FEET. COAT RGS ELBOWS WITH BLACK MASTIC.

PVC CONDUIT SHALL NOT BE USED MORE THAN SIX INCHES ABOVE FINISHED GRADE IN EITHER INTERIOR OR EXTERIOR LOCATIONS. PVC CONDUIT SHALL TRANSITION TO METAL CONDUIT NO MORE THAN SIX INCHES ABOVE GRADE.

ALL PVC CONNECTIONS SHALL BE WATERTIGHT.

FLEXIBLE METAL CONDUIT SHALL BE USED TO CONNECT LIGHTING FIXTURES AND EQUIPMENT SUBJECT TO VIBRATION, INCLUDING A/C EQUIPMENT, MOTORS, TRANSFORMERS, ETC. PROVIDE LIQUID TIGHT FLEXIBLE METAL CONDUIT AND FITTINGS FOR EXTERIOR APPLICATIONS.

CONCEAL ALL CONDUIT IN WALLS, PARTITIONS, OR CEILINGS IN FINISHED AREAS. CONDUIT SHALL NOT BE EXPOSED IN FINISHED AREAS EXCEPT WHEN ABSOLUTELY NECESSARY. CONDUIT SHALL BE STRAIGHT AND PARALLEL TO BUILDING LINES.

PROVIDE ALL CONDUIT, BOTH NEW AND EXISTING, WITH PROTECTION AGAINST DAMAGE AND ENTRANCE OF WATER, DIRT, FOREIGN MATERIAL, ETC WITH WATERTIGHT CAPS. PROVIDE WATERTIGHT ASSEMBLIES, SEALANTS, ETC WHERE CONDUIT PASSES THROUGH INTERIOR/ EXTERIOR OF BUILDING AT BOTH ABOVE AND BELOW GROUND LOCATIONS.

FIRE RATED ASSEMBLIES SHALL BE PROVIDED WHERE CONDUIT PASSES THROUGH FIRE RATED CONSTRUCTION. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF FIRE RATED CONSTRUCTION. REFER TO THE FIRE STOP PENETRATION DETAILS ON THE ELECTRICAL DRAWINGS.

CONDUIT SIZES SHOWN ON THE DRAWINGS AND SCHEDULES ARE THE MINIMUM SIZES REQUIRED. LARGER SIZE CONDUIT TO FACILITATE WIRE PULLS, ETC. IS PERMITTED.

**INSULATING BUSHINGS:**

INSULATING BUSHINGS WITH DOUBLE LOCK-NUTS SHALL BE PROVIDED WHEREVER A CONDUCTOR NO. 4 AWG OR LARGER ENTERS AN ENCLOSURE, PANEL, DISCONNECT OR ELECTRICAL EQUIPMENT PER N.E.C. 300.4(F).

**GROUNDING:**

PROVIDE A SINGLE, COMPLETE GROUNDING NETWORK FOR THE ENTIRE ELECTRICAL AND SPECIAL SYSTEMS WHICH COMPLIES WITH NEC REQUIREMENTS.

SERVICE NEUTRAL AND EQUIPMENT GROUND SHALL BE CONNECTED AT ONE POINT INSIDE THE MAIN DISTRIBUTION PANEL WITH ONE CONTINUOUS CONDUCTOR FROM THIS LOCATION TO THREE 10 FOOT LONG DRIVEN GROUND RODS LOCATED IN A TRIANGULAR PATTERN, TO BUILDING STEEL AND TO METAL WATER PIPE.

PROVIDE BONDING CONNECTION WITH GROUND BUSHING TO CONDUIT FROM DISTRIBUTION PANEL TO THE BREAKERS AND PANELS SERVED.

CONNECTIONS TO GROUND RODS SHALL BE MADE WITH EXOTHERMIC WELDS. PROVIDE TEST WELL OVER EACH GROUND ROD.

**CONDUCTORS:**

PROVIDE 75 DEGREE CELSIUS (167 DEGREE FAHRENHEIT) TYPE THHW, THW, THWN, OR XHHW INSULATED COPPER CONDUCTORS RATED AT 600V FOR POWER DISTRIBUTION WIRING. CONDUIT WIRE FILL SHOWN ON THE DRAWINGS AND FEEDER SCHEDULES ARE BASED ON TYPE THW WIRE UNLESS NOTED OTHERWISE.

CONDUCTORS UP TO AND INCLUDING NO. 10 AWG SHALL BE SOLID AND CONDUCTORS NO. 8 AWG AND LARGER SHALL BE STRANDED. MINIMUM CONDUCTOR SIZE SHALL BE NO. 12 AWG. CONDUCTORS SHALL BE CONTINUOUS BETWEEN EQUIPMENT AND DEVICES. SPLICES ARE TO BE MADE ONLY IN ACCESSIBLE JUNCTION OR OUTLET BOXES AND SHOULD BE KEPT TO A MINIMUM. SPLICES ON NO. 12 AND NO. 10 WIRE SHALL BE MADE WITH PRESSURE CONNECTORS CAPABLE OF CARRYING FULL WIRE CAPACITY. SPLICES ON NO. 8 WIRE AND LARGER SHALL BE MADE WITH SOLDERLESS LUGS WRAPPED WITH BOTH RUBBER AND PLASTIC ELECTRICAL TAPE. CONNECTIONS TO FIXED EQUIPMENT TERMINALS ARE TO BE MADE WITH SOLDERLESS LUGS.

ALL CONDUIT USED FOR POWER DISTRIBUTION SHALL CONTAIN A GROUNDING CONDUCTOR. CONDUIT RACEWAY SHALL NOT BE USED IN PLACE OF A GROUNDING CONDUCTOR.

**WIRING DEVICES:**

THE EXTENT OF WIRING DEVICE WORK IS INDICATED ON THE DRAWINGS. WIRING DEVICES ARE DEFINED AS SINGLE DISCRETE UNITS OF ELECTRICAL DISTRIBUTION SYSTEMS THAT ARE INTENDED TO CARRY BUT NOT UTILIZE ELECTRIC ENERGY. TYPES OF WIRING DEVICES IN THIS SECTION INCLUDE:

- RECEPTACLES
- GROUND FAULT CIRCUIT INTERRUPTERS
- ARC FAULT CIRCUIT INTERRUPTERS, AND
- LIGHT SWITCHES.

PROVIDE WHITE COLORED WIRING DEVICES AND MATCHING THERMOPLASTIC COVERPLATES UNLESS NOTED OTHERWISE. FINAL COLOR SELECTION SHALL BE COORDINATED WITH OWNER/ARCHITECT PRIOR TO BID.

DEVICES CONNECTED TO A CIRCUIT FED FROM THE GENERATOR SHALL BE RED EXCEPT OCCUPANCY SENSORS WHICH SHALL HAVE ONLY A RED COVERPLATE.

PROVIDE NEW "DYMO" STICK ON TYPE LABEL ON DEVICE COVERPLATE. LABEL SHALL STATE PANEL NAME AND CIRCUIT NUMBER(S). LABEL COLOR SHALL MATCH DEVICE COVERPLATE.

**QUALITY ASSURANCE:**

NEC COMPLIANCE: COMPLY WITH NEC AS APPLICABLE TO INSTALLATION AND WIRING OF ELECTRICAL WIRING DEVICES.

UL COMPLIANCE: COMPLY WITH APPLICABLE REQUIREMENTS OF U.L. 20, 486A, 498 AND 943 PERTAINING TO INSTALLATION OF WIRING DEVICES. PROVIDE WIRING DEVICES WHICH ARE U.L. LISTED AND LABELED.

IEEE COMPLIANCE: COMPLY WITH APPLICABLE REQUIREMENTS OF IEEE STANDARD 241, "RECOMMENDED PRACTICE FOR ELECTRIC POWER SYSTEMS IN COMMERCIAL BUILDINGS", PERTAINING TO ELECTRICAL WIRING SYSTEMS.

NEMA COMPLIANCE: COMPLY WITH APPLICABLE PORTIONS OF NEMA STANDARDS PUBLICATION NUMBER WD-1, "GENERAL PURPOSE WIRING DEVICES", WD-2, "SEMICONDUCTOR DIMMERS FOR INCANDESCENT LAMPS", AND WD-3, "SPECIFIC PURPOSE WIRING DEVICES".

**RECEPTACLES:**

SIMPLEX: PROVIDE SPECIFICATION GRADE 20 AMPERE, 125 VOLT, HEAVY DUTY, 2 POLE, 3 WIRE, RECEPTACLE WITH GREEN HEXAGONAL EQUIPMENT GROUND SCREW AND METAL PLASTER EARS DESIGNED FOR SIDE AND BACK WIRING WITH SPRING LOADED, SCREW ACTIVATED PRESSURE PLATE IN NEMA 5-20R CONFIGURATION UNLESS NOTED OTHERWISE. COORDINATE ALL "SPECIAL" RECEPTACLES WITH THE EQUIPMENT SERVED PRIOR TO ROUGH-IN. PROVIDE RECEPTACLE RATING AND CONFIGURATION TO MATCH EQUIPMENT SERVED.

DUPLEX: PROVIDE SPECIFICATION GRADE 20 AMPERE, 125 VOLT, HEAVY DUTY, 2 POLE, 3 WIRE, RECEPTACLE WITH GREEN HEXAGONAL EQUIPMENT GROUND SCREW AND METAL PLASTER EARS DESIGNED FOR SIDE AND BACK WIRING WITH SPRING LOADED, SCREW ACTIVATED PRESSURE PLATE IN NEMA 5-20R CONFIGURATION.

**GROUND-FAULT CIRCUIT INTERRUPTERS:**

PROVIDE SPECIFICATION GRADE "FEED THRU" TYPE GROUND FAULT CIRCUIT INTERRUPTERS, WITH HEAVY DUTY DUPLEX RECEPTACLES, CAPABLE OF PROTECTING CONNECTED DOWNSTREAM RECEPTACLES ON SINGLE CIRCUIT, AND OF BEING INSTALLED IN A 2-3/4" DEEP OUTLET BOX WITHOUT ADAPTER. GROUNDING TYPE U.L. RATED CLASS-A, GROUP 1, RATED 20 AMPERES, 120 VOLTS, 60 HZ, WITH SOLID STATE GROUND FAULT SENSING AND SIGNALING, WITH 5 MILLIAMPERES GROUND FAULT TRIP LEVEL. EQUIP WITH NEMA 5-20R CONFIGURATION.

**LIGHT SWITCHES:**

SINGLE AND TWO POLE: PROVIDE HARD USE, SPECIFICATION GRADE, RECESS MOUNTED SINGLE AND TWO POLE QUIET TOGGLE SWITCHES, 20 AMPERE, 120/277 VOLTS AC. PROVIDE WITH MOUNTING YOKE INSULATED FROM MECHANISM, PLASTER EARS, SWITCH HANDLE, AND SIDE-WIRED SCREW TERMINALS.

THREE AND FOUR WAY: PROVIDE HARD USE, SPECIFICATION GRADE, RECESS MOUNTED 3 AND 4 WAY AC QUIET SWITCHES, 20 AMPERES, 120/277 VOLTS PROVIDE WITH MOUNTING YOKE INSULATED FROM MECHANISM, PLASTER EARS, SWITCH HANDLE, SIDE-WIRED SCREW TERMINALS, WITH BREAK OFF TAB FEATURES, WHICH ALLOWS WIRING WITH SEPARATE OR COMMON FEED.

**LIGHTING FIXTURES:**

CONTRACTOR SHALL PROVIDE, WIRE AND LAMP ALL LIGHTING FIXTURES SHOWN ON PLANS AND LIGHTING FIXTURE SCHEDULE. AT SUBSTANTIAL COMPLETION, CONTRACTOR SHALL CLEAN DUST, DEBRIS, FINGERPRINTS, ETC FROM ALL FIXTURE LENSES, LOUVERS, AND REFLECTORS AND SHALL REPLACE ALL LAMPS, BALLASTS, ETC THAT ARE NOT WORKING.

**LIGHTING CONTROLS:**

CONTRACTOR SHALL PROVIDE, WIRE AND INSTALL. ALL LIGHTING CONTROL DEVICES (NOT INTEGRAL WITH LIGHTING FIXTURES) AS INDICATED ON THE PLANS. PHOTOCELLS SHALL BE BUTTON TYPE RECESSED IN STRUCTURE AND LOCATED WHERE DIRECT OR INTENSE LIGHT WILL NOT AFFECT OPERATION. ADJUST PHOTOCELL WINDOW FOR PROPER OPERATION. TIMECLOCK SHALL BE DIGITAL, 7-DAY, 24 HOUR OPERATION WITH BATTERY BACKUP TO RETAIN PROGRAMMING. PROVIDE WEATHER TIGHT ENCLOSURE IF AT EXTERIOR LOCATION.

**FINAL ACCEPTANCE:**

AFTER TESTING, A FINAL INSPECTION SHALL BE MADE BY THE OWNER/ARCHITECT/ENGINEER AND OTHER AUTHORIZED PERSONS WITH THE CONTRACTOR. THE INSPECTION SHALL INCLUDE, BUT NOT BE LIMITED TO, CHECK ALL PANELS ARE COMPLETE WITH NAMEPLATES AND CIRCUIT DIRECTORIES, ALL LIGHTING FIXTURES ARE OPERATING, PROPERLY CLEANED AND LAMPED, AND THAT ALL WORK HAS BEEN PERFORMED IN PROFESSIONAL MANNER.

FINAL ACCEPTANCE OF THE PROJECT SHALL NOT PREJUDICE THE OWNER'S RIGHT TO REQUIRE REPLACEMENT AND/OR REPAIR OF ANY DEFECTIVE WORK OR MATERIALS.

**WARRANTY:**

ALL PARTS, MATERIALS, EQUIPMENT AND LABOR FURNISHED UNDER THIS SECTION OF THE SPECIFICATIONS SHALL BEAR A ONE (1) YEAR, NO COST TO THE OWNER, WARRANTY FROM THE DATE OF FINAL ACCEPTANCE. CONTRACTOR SHALL PROVIDE ALL OF THE ABOVE WARRANTY REQUIREMENTS IN A WRITTEN STATEMENT ALONG WITH EQUIPMENT MANUFACTURER'S WARRANTIES.

**RECORD DRAWINGS:**

CONTRACTOR SHALL KEEP ACCURATE RECORDS OF ACTUAL CONDITIONS INCLUDING DEVICE LOCATIONS AND CONDUIT RUNS WHERE DIFFERENT FROM THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL PROVIDE AS PER THE 2020 FLORIDA BUILDING CODE ENERGY CONSERVATION CONSTRUCTION DOCUMENTS OF THE ACTUAL INSTALLATION SHALL BE PROVIDED TO THE BUILDING OWNER, INCLUDING:

1. A SINGLE LINE DIAGRAM OF THE BUILDING ELECTRICAL DISTRIBUTION SYSTEM AND
2. FLOOR PLANS INDICATING LOCATION AND AREA SERVED FOR ALL DISTRIBUTION.

THE SCALE ON THESE AS BUILT DRAWINGS SHALL BE NO SMALLER THAN THE SCALE USED ON THE ORIGINAL PLANS.

OPERATION & MAINTENANCE MANUALS: THE CONTRACTOR SHALL PROVIDE AS PER THE 2020 FLORIDA BUILDING CODE ENERGY CONSERVATION MANUALS WHICH STATES: CONSTRUCTION DOCUMENTS SHALL REQUIRE THAT AN OPERATING MANUAL AND MAINTENANCE MANUAL BE PROVIDED TO THE BUILDING OWNER.

1. SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.
2. OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.
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