COMPONENTS OF CONTRACT PLANS SET
LIGHTING PLANS

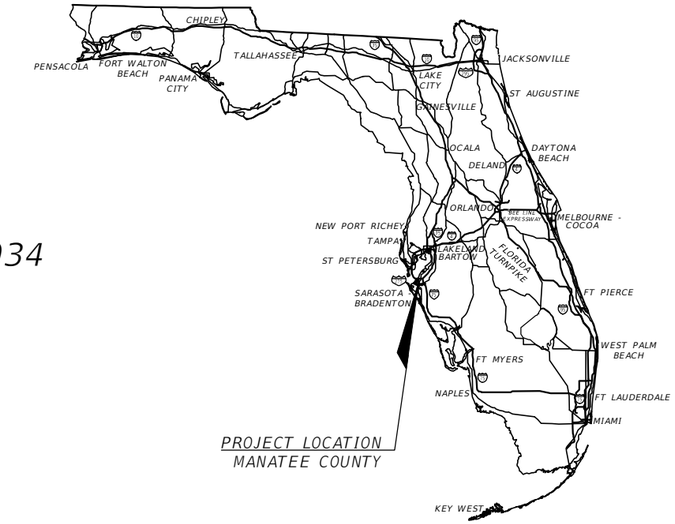
LIGHTING PLANS

COUNTY PROJECT NO. 6096260, 6096560, 5400033, 5400034

MANATEE COUNTY

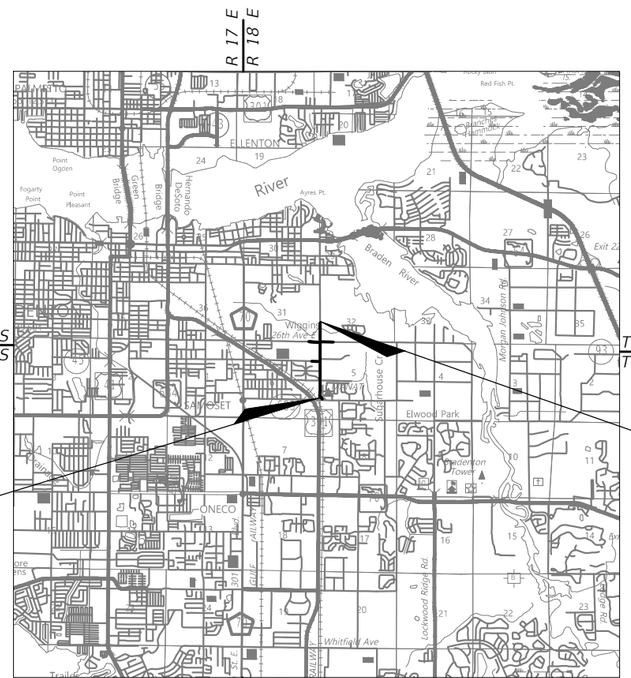
27TH STREET EAST FROM
38TH AVENUE EAST TO 26TH AVENUE EAST
ROADWAY IMPROVEMENTS

MAY 2025



PROJECT LOCATION
MANATEE COUNTY

R 17 E
R 18 E



T 34 S
T 35 S

T 34 S
T 35 S

BEGINNING OF PROJECT
STA. 112+60

ENDING OF PROJECT
STA. 258+60

R 17 E
R 18 E

N

0 1 2
Miles

INDEX OF LIGHTING PLANS

SHEET NO.	SHEET DESCRIPTION
L-1	KEY SHEET
L-2	SIGNATURE SHEET
L-3	TABULATION OF QUANTITIES
L-4	GENERAL NOTES
L-5	POLE DATA AND LEGEND
L-6	PROJECT LAYOUT
L-7 - L-12	LIGHTING PLANS
L-13	LOAD CENTER NOTES
L-14	LOAD CENTER DETAILS
L-15	PANELBOARD SCHEDULE

GOVERNING STANDARD PLANS:
Florida Department of Transportation, FY2021-22 Standard plans for Road and Bridge Construction and applicable Interim Revisions (Irs).
http://www.fdot.gov/design/Standardplans.shtm
Standard Plans for Road Construction and associated (IRs) are available at the following website:

GOVERNING STANDARD SPECIFICATIONS:
Florida Department of Transportation, January 2021 Standard Specifications for Road and Bridge Construction at the following website:

http://www.fdot.gov/programmanagement/Implemented/SpecBooks

MANATEE COUNTY PROJECT MANAGER: DANIEL GARNER, P.E.

PLANS PREPARED BY:

HARDESTY & HANOVER, LLC
5110 EISENHOWER BLVD. SUITE 310
TAMPA, FL 33634
(813) 749-0823

CONTRACT NO. 6096560

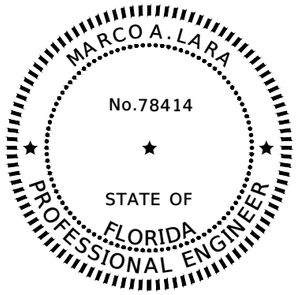
NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO THE REPRODUCTION.

FINAL SUBMITTAL

LIGHTING PLANS ENGINEER OF RECORD: MARCO A. LARA, P.E.
P.E.NO.: 78414

FISCAL YEAR	SHEET NO.
25	L-1

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



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY:

Marco A Lara
2025.05.06 16:51:05 -04'00'

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED. THE SIGNATURE MUST BE VERIFIED ON THE ELECTRONIC DOCUMENTS.

HARDESTY & HANOVER, LLC
5110 EISENHOWER BOULEVARD
SUITE 310
TAMPA, FL 33634
MARCO A. LARA, P.E. #78414

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

SHEET NO.	SHEET DESCRIPTION
L-1	KEY SHEET
L-2	SIGNATURE SHEET
L-3	TABULATION OF QUANTITIES
L-4	GENERAL NOTES
L-5	POLE DATA AND LEGEND
L-6	PROJECT LAYOUT
L-7	LIGHTING PLAN 1
L-8	LIGHTING PLAN 2
L-9	LIGHTING PLAN 3
L-10	LIGHTING PLAN 4
L-11	LIGHTING PLAN 5
L-12	LIGHTING PLAN 6
L-13	LOAD CENTER NOTES
L-14	LOAD CENTER DETAILS
L-15	PANELBOARD SCHEDULE

NO.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MAL
DRAWN BY: PCR
CHECKED BY: SK

HARDESTY & HANOVER, LLC
5110 EISENHOWER BLVD.
SUITE 310
TAMPA, FL 33634
(813)749-0823

DATE: 4/28/2025

PROJECT NO.
6096260 5400033
6096560 5400034

Manatee County FLORIDA

PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

DESIGN ENGINEER: MARCO A. LARA, P.E.

FL. LICENSE NO.: 78414

SIGNATURE SHEET

SHEET NO.: L-2

Patrick Rosso 5/5/2025 9:19:32 AM

Y:\Shared\Projects\03285-Manatee Cty GEC\500-Technical\3285.01 27th Street\CADD

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS														TOTAL THIS SHEET		GRAND TOTAL	
			L-7		L-8		L-9		L-10		L-11		L-12							
			PLAN	FINAL	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									625		675				1300		1300	
630-2-12	Conduit, Furnish & Install, Directional Bore	LF											410				410		410	
635-2-11	Pull & Splice Box, Furnish & Install,	EA									6		16				22		22	
	13"X24" Cover Size																			
639-1-112	Electrical Power Service, Furnish & Install,	AS											1				1		1	
	Overhead Meter Purchased By Contractor From Power Company																			
715-1-11	Lighting Conductors, Furnish & Install,	LF									2634		4970				7604		7604	
	Insulated, No. 10 Or <																			
715-1-12	Lighting Conductors, Furnish & Install,	LF											80				80		80	
	Insulated, No. 8-6																			
*715-61-111	LIGHT POLE COMPLETE, F&I, STANDARD POLE STANDARD FOUNDATION	EA											3				3		3	
	30' MOUNTING HEIGHT, 8' ARM LENGTH																			
*715-61-311	LIGHT POLE COMPLETE, F&I, STANDARD POLE STANDARD FOUNDATION	EA											2				2		2	
	40' MOUNTING HEIGHT, 8' ARM LENGTH																			
715-61-321	LIGHT POLE COMPLETE, F&I, STANDARD POLE STANDARD FOUNDATION	EA									6		4				10		10	
	40' MOUNTING HEIGHT, 10' ARM LENGTH																			
715-65-166	LIGHT POLE COMPLETE, F&I, UTILITY CONFLICT POLE SPECIAL FOUNDATION	EA											1				1		1	
	30' MOUNTING HEIGHT, 16' ARM LENGTH																			
715-7-11	Load Center, Furnish & Install, Secondary Voltage	EA											1				1		1	
715-500-11	Pole Cable Distribution System, Furnish & Install, Conventional	EA									6		16				22		22	
	Lighting to be furnished and installed by Florida Power and Light. Do Not Bid.	EA											2				2		2	

NOTE:
1. Refer to FDOT basis of estimates (BOE) for additional pay item information.
2. Pay items including an 8' arm length used to represent poles with a 6' arm length.
3. Pay item 715-65-166 is used to represent a 25' mounting height.

NO.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MAL
DRAWN BY: PCR
CHECKED BY: SK

HARDESTY & HANOVER, LLC
5110 EISENHOWER BLVD.
SUITE 310
TAMPA, FL 33634
(813)749-0823

DATE: 4/28/2025
PROJECT NO.: 6096260 5400033 6096560 5400034

Manatee County FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

DESIGN ENGINEER: MARCO A. LARA, P.E.
FL. LICENSE NO.: 78414

TABULATION OF QUANTITIES

SHEET NO.: L-3

Patrick Rosso 5/5/2025 1:22:10 PM

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GENERAL NOTES

1. UTILITY OWNERS:

Florida Power and Light Eric Culling LED Lighting Specialist 1253 12th Avenue East Palmetto, FL 34221 Email: Eric.Culling@fpl.com Work: 239-410-4763 (w)	Florida Power and Light Todd Bolkema 1253 12th Avenue East Palmetto, FL 34221 Email: Todd.Bolkema@fpl.com

2. The locations of existing utilities as shown on these plans are approximate and based on the information furnished to the Engineer by the Utility Owner(s) and are shown as notice to The Contractor that underground utilities exist. Before excavating, notify the Utility Company Owner(s) and request them to locate and stake their underground facilities. Utilities are to be adjusted by others as directed by The Engineer.

3. For alternative proposed luminaires, submittal data shall include computer printouts showing point-to-point horizontal foot-candle levels to be obtained on this project. Lighting Design Analysis Report shall be used, if no alternative luminaires are proposed. At final inspection, The Contractor shall verify the horizontal foot-candle levels on the roadway with an approved and properly calibrated light meter.

4. In accordance with N.E.C., identify all circuits and equipment with "lamacoid tags". Install similar tags of stainless steel, identifying circuit for each luminaire at access handhole for each pole.

5. Notify utility power service provider at least 48 hours prior to any installation that is within 10 feet of energized electrical conductors. Utility Power Service Provider, at it's option, shall assist the Manatee County Contractor to cover up energized conductors at installation site or take other safety precautions as necessary. Extreme caution shall be exercised at all times in performance of work around the primary, high voltage components.

6. Pulling instructions: connect pulling devices to copper wire and not to jacket and meet manufacturer's requirements. Use pulling compound per manufacturer's requirements. All bends shall not be less than recommended by N.E.C. or N.E.S.C. for cable used. Pull cable shall be polyester. Steel cable or fish tapes not allowed.

7. The lighting system will be maintained by Manatee County upon final acceptance.

8. Existing lighting equipment power sources shall be verified by the contractor prior to commencing demolition/removal work.

9. All conduits shall be mandrel tested and cleaned. Conduits placed for future use shall have. 3/4" polyester cord pulled in place and capped with notation inside conduit as to location of opposite end. Place duct marker or pull boxes to mark ends of empty conduits.

10. The locations of existing utilities, as shown on these plans, are approximate and based on the information furnished to the engineer by the utility owner(s) and are shown as a notice to the contractor that underground utilities exist. The Contractor shall notify the utility company owner(s) for location and staking of underground facilities before excavating.

11. The Contractor is required that before excavating, notice be given to Sunshine State One Call of Florida, Inc. (SSOCOF) at 1-800-432-4770 a minimum of two (2) full business days before work begins. Not all utility companies are members of SSOCOF.

12. The location of the poles, conductors, conduits, junction boxes, and service poles are diagrammatic only and may be shifted within the right-of-way by the contractor with approval from the Engineer to accommodate local conditions and existing utility locations. The maintenance slab orientation shall be determined by the Contractor and approved by the Engineer per individual pole location.

13. Pulling instructions: connect pulling devices to copper wire and not to jacket and meet manufacturer's requirements. Use pulling compound per manufacturer's requirements. All bends shall not be less than recommended by the National Electrical Code or National Electrical Safety Code for cables used.

14. The Contractor shall stake all pole locations and request utility companies to locate and stake underground utilities prior to excavating. This includes notifying Florida Power and Light on reviewing the staked locations with respect to the overhead power lines.

15. Directional bore operations, if used, shall meet the requirements of FDOT's utility accommodation manual (latest edition).

16. All conduit trenches shall be backfilled completely to provide safe crossing by the end of each working day or whenever the work zone becomes inactive. The Contractor shall not open any area that can not be backfilled in the same work period.

17. The Contractor shall maintain access to all side streets, private and commercial driveways at all times during the construction operation.

18. The lighting system will be maintained by Manatee County Traffic Operations Division upon final acceptance. The Contractor shall notify the Traffic Operations Division a minimum of two (2) business days in advance to schedule the final inspection. When construction is complete, deliver three (3) hard-copy sets of as-built record drawings and one compact disc of record drawings in Adobe Acrobat (.PDF) and AutoCAD (.DWG) format to:

    Manatee County Traffic Operations Division
    Attn: Mr. Aaron Burkett
    2904 12th Street Court East
    Bradenton, Fl 34208

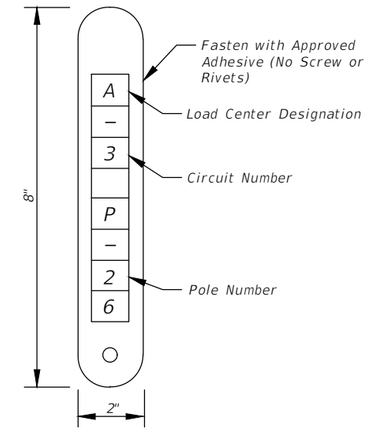
    Record drawings and inspection forms must be delivered to the county at least two (2) business days prior to scheduling the final inspection.

19. The wires at the pole handholes and pull boxes shall be looped in the pole and pull boxes with sufficient length to completely remove connectors and splices one foot outside of the handhold and pull boxes. The slack is for making connections and splices accessible for changing fuses and troubleshooting the system.

20. The Contractor shall contact the Traffic Engineering Division prior to bidding to verify desired luminaire lamp type. If the lamp is different from the lamp used in the design as mentioned on the pole data sheet, the new lamp must match the lumen intensity and photometric curve of the existing LED luminaire. This would allow the pole spacing to remain as shown in the plans.

21. For locations where the light pole is within or adjacent to the proposed sidewalk, the pole foundation elevation shall match the proposed sidewalk grade.

22. A portion of the roadway lighting is to be furnished and installed by Florida Power and Light on distribution and light-only poles as indicated on the plans. The lighting plans show mounting heights, wattages, and proposed pole locations in order to meet FDOT lighting criteria as indicated by photometric modeling. Final luminaire locations to be determined by Florida Power and Light



POLE IDENTIFICATION TAG DETAIL

N.T.S.

NO.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MAL
DRAWN BY: PCR
CHECKED BY: SK

HARDESTY & HANOVER, LLC
5110 EISENHOWER BLVD.
SUITE 310
TAMPA, FL 33634
(813)749-0823

DATE: 4/28/2025

PROJECT NO.: 6096260 5400033
6096560 5400034

PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

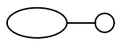
DESIGN ENGINEER: MARCO A. LARA, P.E.

FL. LICENSE NO.: 78414

GENERAL NOTES

SHEET NO.: L-4

Patrick Rosso 5/5/2025 1:28:51 PM Y:\Shared\Projects\03285-Manatee Cty GEC\500-Technical\3285.01 27th Street\CADD

SYMBOL	DESCRIPTION
	New aluminum utility conflict pole with frangible base, shoulder mounted, with LED luminaire, 46W, 480V, 3000°K, 6000 lumens, type III distribution, 16ft arm, 25ft mounting height as indicated on the pole data sheet. Photometric distribution equal to Current Evolve Catalog Number ERL1–06C330 or approved equal. Furnish and install complete light pole assembly, including pole cable distribution system, concrete foundation, junction box, concrete pad, grounding, and any associated hardware required for complete installation. Refer to FDOT Standard Plans Index 715–003.
	New aluminum pole with frangible base, shoulder mounted, with LED luminaire, 68W, 480V, 3000°K, 8500 lumens, type IV distribution, 10ft arm, 40 ft mounting height. Photometric distribution equal to Current Evolve Catalog Number ERL1_09D330 or approved equal. Furnish and install complete light pole assembly, including pole cable distribution system, concrete foundation, junction box, concrete pad, grounding, and any associated hardware required for complete installation. Refer to FDOT Standard Plans Index 715–001 and 715–002.
	New aluminum pole with frangible base, shoulder mounted, with LED luminaire, 76W, 480V, 3000°K, 9300 lumens, type IV distribution, 10ft arm, 40 ft mounting height. Photometric distribution equal to Current Evolve Catalog Number ERL1_10D330 or approved equal. Furnish and install complete light pole assembly, including pole cable distribution system, concrete foundation, junction box, concrete pad, grounding, and any associated hardware required for complete installation. Refer to FDOT Standard Plans Index 715–001 and 715–002.
	New aluminum pole with frangible base, single 6ft arm, shoulder mounted, with LED luminaire, 102W, 480V, 3000°K, 11770 lumens, type II, 6ft arm, 30 and 40 ft mounting height. Photometric distribution equal to Current Evolve Catalog Number ERL1_13B530 approved equal. Furnish and install complete light pole assembly, including pole cable distribution system, concrete foundation, junction box, concrete pad, grounding, and any associated hardware required for complete installation. Refer to FDOT Standard Plans Index 715–001
	New aluminum pole with frangible base, single 6ft arm, shoulder mounted, with LED luminaire, 102W, 480V, 3000°K, 11900 lumens, type IV distribution, 6ft arm, 30 ft mounting height. Photometric distribution equal to Current Evolve Catalog Number ERL1_13D530 or approved equal. Furnish and install complete light pole assembly, including pole cable distribution system, concrete foundation, junction box, concrete pad, grounding, and any associated hardware required for complete installation. Refer to FDOT Standard Plans Index 715–001
	New LED roadway luminaire mounted to Florida Power and Light utility pole. Luminaire is 124W, 480V, 3000°K, 17714 lumens, type IV distribution, 12ft arm, 30ft mounting height as indicated on the pole data sheet. Photometric distribution equal to American Electric Lighting Catalog Number ATB0–P304–R4–3k or approved equal. See Note 1.
	Pull box. For specifications refer to Section 635 of FDOT Standard Specifications for Road and Bridge Construction.
	Service Point Load Center. Refer to FDOT Standard Plans Index 639–001.
	Two (2) 2" HDPE conduits, one active and one spare, installed by directional bore, containing circuits conductors as indicated on Plans. All conductors shall be stranded copper with THWN–2 insulation. Ground conductors shall have Green color insulation. Run ground conductors with other conductors. Refer to FDOT Standard Plans Index 630–001.
	2" Schedule 40 PVC conduit, direct buried in open trench, containing circuit conductors as indicated on Plans. All conductors shall be stranded copper with THWN–2 insulation. Ground conductors shall have Green color insulation. Run ground conductors with other conductors. Refer to FDOT Standard Plans Index 630–001.

POLE DATA

POLE NO.	DIST. OR ARM	LUMINAIRE WATTAGE	MOUNTING HEIGHT	PAY ITEM
P-01	10 ft	76W	40 ft	715-61-321
P-02	10 ft	68W	40 ft	715-61-321
P-03	10 ft	76W	40 ft	715-61-321
P-04	10 ft	68W	40 ft	715-61-321
P-05	10 ft	76W	40 ft	715-61-321
P-06	10 ft	76W	40 ft	715-61-321
P-07	10 ft	68W	40 ft	715-61-321
P-08	10 ft	76W	40 ft	715-61-321
P-09	10 ft	76W	40 ft	715-61-321
P-10	10 ft	68W	40 ft	715-61-321
P-11	6 ft	102W	40 ft	715-61-311
P-12	6 ft	102W	30 ft	715-61-111
P-13	6 ft	102W	40 ft	715-61-311
P-14	6 ft	102W	30 ft	715-61-111
*P-15	12 ft	124W	30 ft	FPL Light Only
P-16	6 ft	102W	30 ft	715-61-111
*P-17	12 ft	124W	30 ft	FPL Distribution Pole
P-18	16 ft	46W	25 ft	715-65-166

Notes:
1. Mounting height is be defined as the vertical distance measured from the illuminated surface (e.g., ground or roadway) to the lowest point of the luminaire. To achieve the specified mounting height, appropriate luminaire arm configurations—including those with vertical rise—shall be selected as necessary, depending on the type and dimensions of mounting poles available on–site.

CONVENTIONAL LIGHTING DESIGN CRITERIA

Average Horizontal Illuminance	0.8 Foot Candles
Uniformity Ratio Avg./Min.	4:1 Or Less
Uniformity Ratio Max./Min.	10:1 Or Less
Wind Speed	150 MPH

SIGNALIZED INTERSECTIONS WITH CROSSWALKS

Average Horizontal Illuminance	3.0 Foot Candles (1.5 fc min.)
Average Vertical Illuminance	1.5 Foot Candles (1.2 fc min.)
Uniformity Ratio Avg./Min.	4:1 Or Less
Uniformity Ratio Max./Min.	10:1 Or Less
Wind Speed	150 MPH

*Luminaires labeled "FPL Distributon Pole" specify a Roadway Luminaire fed from Florida Power and Light's circuit that is mounted on a shared utility distribution pole. Luminaires labeled "FPL Light Only" are fed from FPL's circuits on a pole only utilized for lighting.

NO.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MAL
DRAWN BY: PCR
CHECKED BY: SK

HARDESTY & HANOVER, LLC
5110 EISENHOWER BLVD.
SUITE 310
TAMPA, FL 33634
(813)749-0823

DATE: 4/28/2025
PROJECT NO.: 6096260 5400033, 6096560 5400034

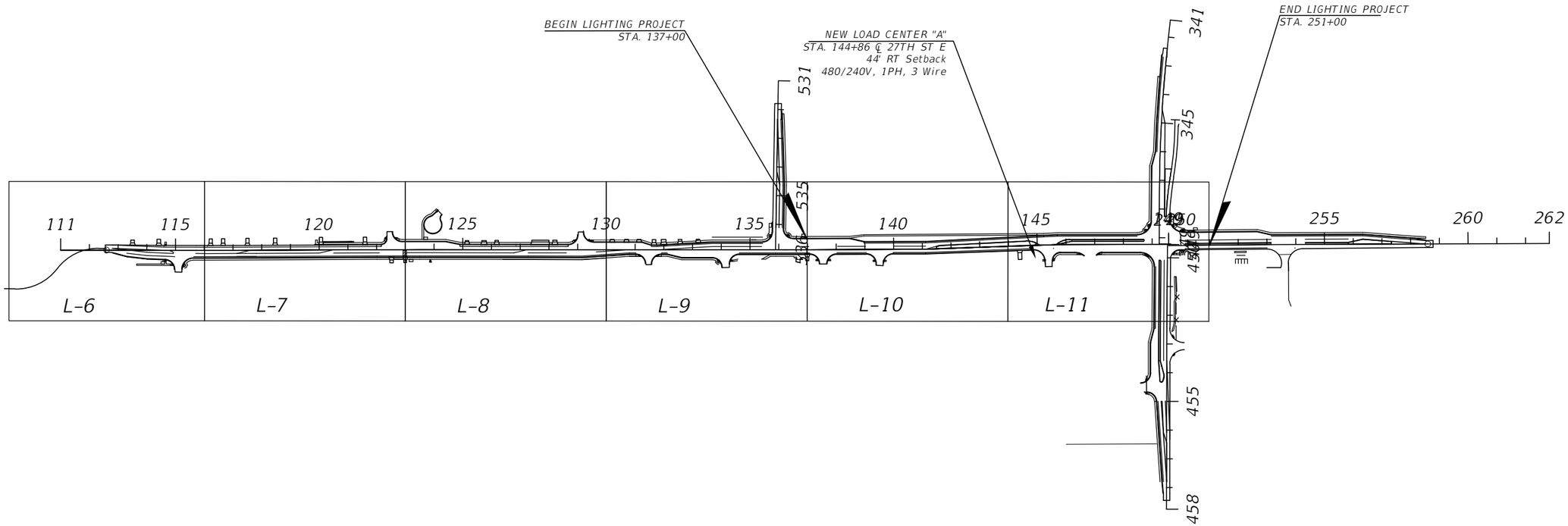
Manatee County FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

DESIGN ENGINEER: MARCO A. LARA, P.E.
FL. LICENSE NO.: 78414

POLE DATA AND LEGEND

SHEET NO.: L-5

1"=400'



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1022 26th Avenue East, Bradenton, FL 34208

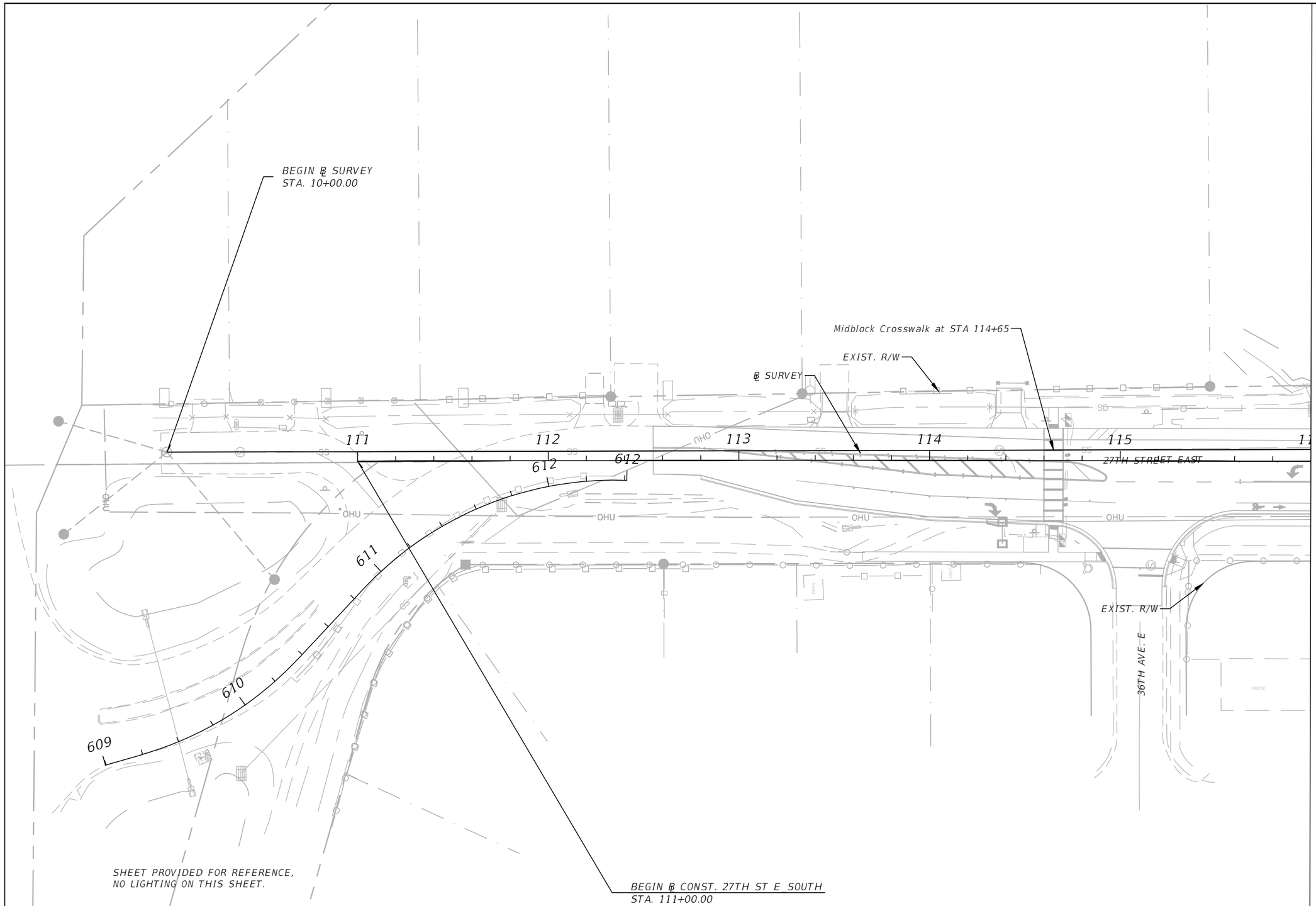
DESIGN ENGINEER
MARCO A. LARA, P.E.

FL. LICENSE NO.
78414

PROJECT LAYOUT

SHEET NO.
L-6

Patrick Rosso 5/5/2025 8:50:44 AM Y:\Shared\Projects\03285-Manatee Cty GEC\500-Technical\3285.01 27th Street\CADD Files\Lighting\PLANLT03.dwg



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PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

DESIGN ENGINEER: MARCO A. LARA, P.E.

FL. LICENSE NO.: 78414

LIGHTING PLAN 1

SHEET NO.: L-7

Patrick Rosso 5/5/2025 11:23:51 AM Y:\Shared\Projects\03285-Manatee Cty GEC\500-Technical\3285.01 27th Street\CADD Files\Lighting\PLANLT01.dwg

MATCHLINE STA. 116+00.00

MATCHLINE STA. 123+00.00

1" = 50'

℄ SURVEY

EXIST. R/W

34TH AVE. EAST

116 117 118 119 120 121 122

27TH STREET EAST

EXIST. R/W

PROP. R/W

34TH AVE. EAST

SHEET PROVIDED FOR REFERENCE,
NO LIGHTING ON THIS SHEET.

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NO.	REVISIONS	DATE	BY

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PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

DESIGN ENGINEER: MARCO A. LARA, P.E.

FL. LICENSE NO. 78414

LIGHTING PLAN 2

SHEET NO. L-8

Patrick Rosso 5/5/2025 11:26:11 AM Y:\Shared\Projects\03285-Manatee Cty GEC\500-Technical\3285.01 27th Street\CADD Files\Lighting\PLANLT01.dwg

MATCHLINE STA. 123+00.00

MATCHLINE STA. 130+00.00

CENTER OF CUL DE SAC
+85.35, 82.26' LT.

33RD AVE. DRIVE EAST

EXIST. R/W

EXIST. R/W

PROP. R/W

EXIST. R/W

℄ SURVEY

EXIST. R/W

32ND AVE. EAST

27TH STREET EAST

EXIST. R/W

℄ CONST. 27TH STREET E._SOUTH

PROP. R/W

123 124 125 126 127 128 129

SS SD OHU

CENTERLINE BEAM

N

1" = 50'

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6096260 5400033
6096560 5400034

Manatee County FLORIDA

PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

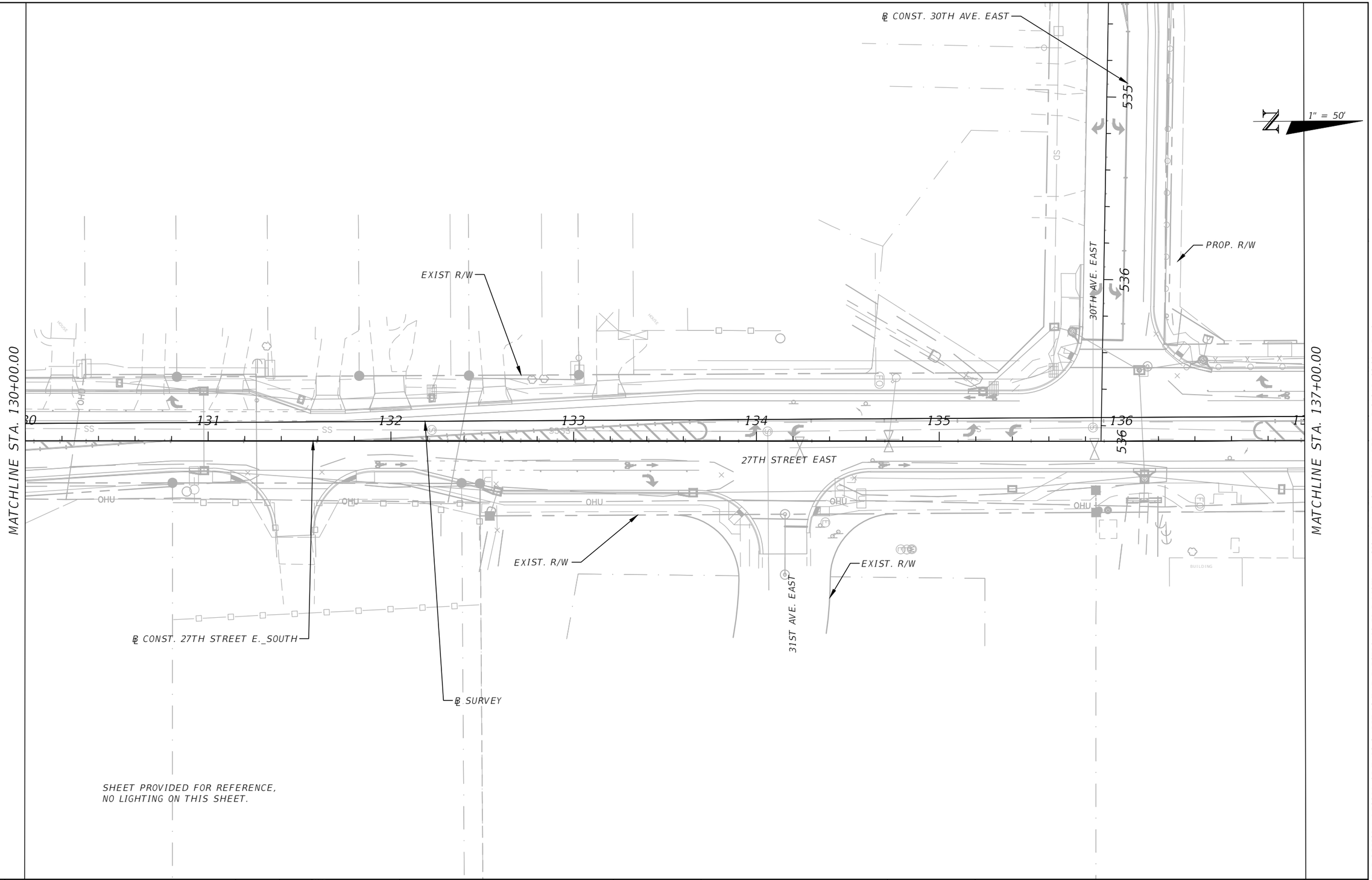
DESIGN ENGINEER
MARCO A. LARA, P.E.

FL. LICENSE NO.
78414

LIGHTING PLAN 3

SHEET NO.
L-9

Patrick Rosso 5/5/2025 11:28:11 AM Y:\Shared\Projects\03285-Manatee Cty GEC\500-Technical\3285.01 27th Street\CADD Files\Lighting\PLANLT01.dwg



N

1" = 50'

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SCALE: AS NOTED
DESIGNED BY: MAL
DRAWN BY: PCR
CHECKED BY: SK

HARDESTY & HANOVER, LLC
5110 EISENHOWER BLVD.
SUITE 310
TAMPA, FL 33634
(813)749-0823

DATE: 4/28/2025

PROJECT NO.
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LIGHTING PLAN 4

SHEET NO.
L-10

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MATCHLINE STA. 137+00.00

MATCHLINE STA. 144+00.00

N

1" = 50'

STA. 137+13 ℄ 27TH ST E
POLE NO. P-01 Circuit # A-1

630-2-11 (1 RUN OF 2" @ 125')
6 #10 AWG, 1 #10 GND
(A-1)

STA. 138+26 ℄ 27TH ST E
POLE NO. P-02 Circuit # A-2

630-2-11 (1 RUN OF 2" @ 125')
6 #10 AWG, 1 #10 GND
(A-1)(A-2)

STA. 139+48 ℄ 27TH ST E
POLE NO. P-03 Circuit # A-1

630-2-11 (1 RUN OF 2" @ 125')
6 #10 AWG, 1 #10 GND
(A-1)(A-2)(A-3)

EXIST R/W

STA. 140+66 ℄ 27TH ST E
POLE NO. P-04 Circuit # A-2

℄ SURVEY

STA. 141+85 ℄ 27TH ST E
POLE NO. P-05 Circuit # A-1

630-2-11 (1 RUN OF 2" @ 125')
6 #10 AWG, 1 #10 GND
(A-1)(A-2)

630-2-11 (1 RUN OF 2" @ 125')
6 #10 AWG, 1 #10 GND
(A-1)(A-2)

STA. 143+05 ℄ 27TH ST E
POLE NO. P-06 Circuit # A-2

137 138 139 140 141 142 143 14

27TH STREET EAST

29TH AVE. EAST

OHU

SS

EXIST. R/W

℄ CONST. 27TH STREET E._SOUTH

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LIGHTING PLAN 5

SHEET NO.
L-11

Patrick Rosso

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N

1" = 50'

STA. 144+26 ℄ 27TH ST E
POLE NO. P-07 Circuit # A-1

630-2-11 (1 RUN OF 2" @ 80')
6 #10 AWG, 1 #10 GND
(A-1)(A-2)

630-2-11 (1 RUN OF 2' @ 50')
2 #10 AWG, 1 #10 GND
(A-1)(A-2)(A-3)

STA. 145+49 ℄ 27TH ST E
POLE NO. P-08 Circuit # A-2

630-2-11 (1 RUN OF 2" @ 125')
4 #10 AWG, 1 #10 GND
(A-1)(A-2)(A-3)

STA. 146+65 ℄ 27TH ST E
POLE NO. P-09 Circuit # A-1

630-2-11 (1 RUN OF 2" @ 125')
2 #10 AWG, 1 #10 GND
(A-1)(A-2)(A-3)

STA. 147+84 ℄ 27TH ST E
POLE NO. P-10 Circuit # A-2

℄ CONST. 26TH AVE. E_1

STA. 348+03 ℄ 26TH ST E
POLE NO. P-12 Circuit # A-3

630-2-11 (1 RUN OF 2" @ 30')
2 #10 AWG, 1 #10 GND
(A-3)

630-2-11 (1 RUN OF 2" @ 18')
2 #10 AWG, 1 #10 GND
(A-3)

STA. 348+50 ℄ 26TH ST E
POLE NO. P-11 Circuit # A-3

630-2-11 (1 RUN OF 2' @ 47')
2 #10 AWG, 1 #10 GND
(A-3)

630-2-12 (2 RUN OF 2" @ 95')
2 #10 AWG, 1 #10 GND
(A-3)

630-2-11 (1 RUN OF 2" @ 30')
2 #10 AWG, 1 #10 GND
(A-3)

STA. 250+19 ℄ 27TH ST E
POLE NO. P-13 Circuit # A-3

630-2-11 (1 RUN OF 2" @ 40')
2 #10 AWG, 1 #10 GND
(A-3)

STA. 250+37 ℄ 27TH ST E
POLE NO. P-14 Circuit # A-3

EXIST. R/W

MATCHLINE STA. 144+00.00

145 146 147 148 149 149 250 25

348 349 450 451

27TH STREET EAST

630-2-11 (1 RUN OF 2' @ 80')
2 #10 AWG, 1 #10 GND
(A-3)

STA. 148+39 ℄ 27TH ST E
POLE NO. P-18 (A-3)

630-2-11 (1 RUN OF 2' @ 40')
2 #10 AWG, 1 #10 GND
(A-3)

STA. 148+63 ℄ 27TH ST E
POLE NO. P-17 FPL Distribution Pole

630-2-12 (2 RUN OF 2" @ 96')
2 #10 AWG, 1 #10 GND
(A-3)

EXIST. R/W

℄ CONST. 27TH STREET E._SOUTH

EXIST. EASEMENT

630-2-11 (1 RUN OF 2' @ 80')
9 #10 AWG, 1 #10 GND
(A-1)(A-2)(A-3)

630-2-11 (1 RUN OF 2' @ 15')
9 #10 AWG, 1 #10 GND
(A-1)(A-2)(A-3)

New Load Center "A"
STA. 144+86 ℄ 27TH ST E
33' RT Setback
480/240V, 1PH, 3 Wire

EXIST. R/W

℄ CONST. 27TH STREET E._NORTH

STA. 250+16 ℄ 27TH ST E
POLE NO. P-15 FPL Light Only

26TH AVENUE EAST

STA. 450+29 ℄ 26TH ST E
POLE NO. P-16 Circuit # A-3

630-2-11 (1 RUN OF 2" @ 21')
2 #10 AWG, 1 #10 GND
(A-3)

EXIST. R/W

℄ CONST. 26TH AVE. E_2

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DESIGN ENGINEER
MARCO A. LARA, P.E.

FL. LICENSE NO.
78414

LIGHTING PLAN 6

SHEET NO.
L-12

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KEYED NOTES:

1. PROVIDE A PULL BOX AT THE BASE OF THE SERVICE PEDESTAL. PULL BOX COVER SHALL BE MARKED "ELECTRIC".
2. SERVICE CONDUCTORS IN 2" RIGID CONDUIT BY FP&L, 240/480V, SINGLE PHASE, THREE WIRE, WITH GROUND.
3. PROVIDE PULL BOX(ES) PER FDOT STANDARD SPECIFICATIONS AND NEC. PULL BOX COVER SHALL READ "MANATEE COUNTY LIGHTING".
4. NEW 12' PRESTRESSED CONCRETE PEDESTAL, TYPE P-II, DIRECT BURIAL, WITH MINIMUM 4'-0" EMBEDDED BELOW FINAL GRADE
5. PROVIDE #6 AWG BARE STRANDED COPPER GROUNDING CONDUCTOR IN 1" SCH. 80 PVC CONDUIT WHERE EXPOSED. BOND GROUNDING CONDUCTOR TO TOP OF GROUND ROD(S) VIA THE EXOTHERMIC WELDING PROCESS.
6. COPPER CLAD GROUND RODS 5/8" DIAMETER BY 40' LONG (MIN) INSTALLED 12" UNDER FINAL GRADE, AT LEAST 20' APART AND BONDED TOGETHER WITH #6 AWG TIN PLATED BARE COPPER CONDUCTOR BY EXOTHERMIC WELDING. GROUND RODS SHALL BE INTERCONNECTED USING #6 AWG BARE COPPER GROUNDING CONDUCTOR. THE GROUNDING INSTALLATION SHALL MEET THE REQUIREMENTS OF FDOT STANDARD INDEX 17504.
7. 2 #6 AWG SERVICE-ENTRANCE PHASE CONDUCTORS WITH THWN-2 INSULATION AND 1 #6 AWG GROUNDED SERVICE CONDUCTOR WITH THWN-2 INSTALLATION FOR LOAD CENTER A IN 2" SCH 80 FOR UNDERGROUND AND RGS FOR ABOVE GROUND CONDUITS. UNDERGROUND CONDUITS SHALL BE BURIED 30" MINIMUM BELOW GRADE.
8. PROVIDE BASE MOUNT NEMA 4X, OPEN BOTTOM, SINGLE CONTINUOUS HINGED DOOR ENCLOSURE WITH BACK PANEL, 3-POINT T-HANDLE LATCHING MECHANISM WITH PLASTIC OR RUBBER ROLLER GUIDES, AND PAD LOCK HASP. ENCLOSURE AND BACK PANEL SHALL BE FABRICATED FROM MINIMUM 12 GAUGE 316 STAINLESS STEEL STOCK, AND ALL HARDWARE SHALL BE STAINLESS STEEL. DIMENSIONS SHALL BE AS REQUIRED TO ACCOMMODATE THE COMPONENT DEVICES AND MATERIALS SPECIFIED TO BE INSTALLED INSIDE THE ENCLOSURE, BUT IN NO CASE SHALL THE ENCLOSURE HAVE DIMENSIONS LESS THAN 60"W X 55"H X 26"D.
9. PROVIDE 600V, THERMAL-MAGNETIC 60 AMP MAIN RATING CIRCUIT BREAKER, 30A TRIP, WITH 35,000 AIC AS MIN, WITH SOLID-NEUTRAL KIT AND NEMA TYPE 1 ENCLOSURE.
10. PROVIDE TIN PLATED COPPER, 600V, (1) #14-#2 (LINE-SIDE), (6) #14-#2 (LOAD-SIDE), PANEL MOUNT POWER DISTRIBUTION BLOCKS (PDB) SUITABLE FOR USE WITH COPPER CONDUCTORS. PROVIDE ONE 2P PDB (A AND B PHASES), ONE 1P PDB (NEUTRAL), AND ONE 1P PDB (GROUND).
11. PROVIDE TIN PLATED COPPER ALLOY, 20A, 600V FUSE HOLDERS SUITABLE FOR USE WITH CLASS CC FUSES. PROVIDE ONE 2P FUSE HOLDER WITH TWO (2) 15A, 600V, CLASS CC FUSES USED ON THE PRIMARY SIDE OF CONTROL TRANSFORMER, ONE 2P FUSE HOLDER WITH ONE 20A, 600V, CLASS CC FUSES FOR CONTROL CIRCUIT AND RECEPTACLE.
12. PROVIDE 600V, 2P, 100 AMP ELECTRICALLY HELD, OPEN (PANEL MOUNT) LIGHTING CONTACTOR WITH 120V COIL.
13. PROVIDE 240/480V, 1PH., 3W., 14,000 AIC MLO PANELBOARD WITH COPPER BUSSING. ALL MAIN AND BRANCH BREAKERS, BUSSING AND FEED THROUGH LUGS SHALL BE FULLY RATED. PANELBOARD SHALL BE IN COMPLIANCE WITH UL 67 AND NEC 110-10. PROVIDE BRANCH CIRCUIT BREAKERS, QUANTITY AND SIZES AS INDICATED IN PANEL SCHEDULES, NEUTRAL BUS, GROUND BUS, AND NEMA TYPE 1 SURFACE MOUNT ENCLOSURE. PROVIDE ONE 2" CHASE NIPPLE IN THE TOP, AND FOUR (4) 2" CHASE NIPPLES IN THE BOTTOM OF ENCLOSURE. REFER TO PANEL SCHEDULES FOR MORE INFORMATION.
14. PROVIDE TYPE 1 SPD (SURGE ARRESTER) IN COMPLIANCE WITH THE CURRENT NEC, UL 1449 LATEST EDITION LISTED.
15. PROVIDE 20A, 120V, NEMA 5-20R, INDUSTRIAL GRADE, GROUND FAULT CIRCUIT INTERRUPTER (GFCI) TYPE DUPLEX RECEPTACLE WITH PVC, DEAD-END, DEEP DEVICE BOX (TYPE FD), AND MATCHING/MATING GASKETED SPRING-HINGE WEATHERPROOF PVC COVER.
16. PROVIDE NEMA 4/13, RAINTIGHT/OILTIGHT, WET LOCATIONS LISTED, NON-ILLUMINATED, MAINTAINED CONTACT, HAND-OFF-AUTO, 3-POSITION SELECTOR SWITCH COMPLETE WITH TYPE AND NUMBER OF CONTACTS REQUIRED TO IMPLEMENT SPECIFIED CONTROL, LEGEND PLATE, AND PANEL MOUNT SINGLE OPERATOR NEMA TYPE 1 ENCLOSURE. PROVIDE 1" CHASE NIPPLE IN BOTTOM OF ENCLOSURE.
17. PROVIDE 2000W, 120V, SPST PHOTOCELL, TORK 2100 SERIES OR APPROVED EQUAL. MOUNT PHOTOCELL WITH BOTTOM ALIGNED WITH THE TOP OF THE LOAD CENTER ENCLOSURE, AIM PHOTOCELL TOWARD THE NORTH, AND ADJUST PHOTOCELL SENSOR SLIDE SHIELD FOR OPTIMAL PERFORMANCE AS DIRECTED BY THE ENGINEER.
18. PROVIDE 480-120V, SINGLE PHASE, 3W, 60HZ, 3.0KVA CONTROL POWER TRANSFORMER WITH FUSE KIT BRACKETS.
19. METER BASE BY CONTRACTOR PER FP&L'S REQUIREMENTS. METER BY FP&L. GROUND METER BASE PER FP&L'S REQUIREMENTS.

KEYED NOTES:

20. PROVIDE 1-#12 PH., 1-#12 NEUT., AND 1-#12 GND FOR ALL 120V CONTROL CIRCUITS.
21. 2 #6AWG PHASE CONDUCTORS WITH THWN-2 INSULATION, 1 #6 AWG GROUNDED CONDUCTOR WITH THWN-2 INSULATION AND 1 #6 AWG EQUIPMENT GROUND CONDUCTOR FOR LOAD CENTER A IN 2" SCH 80 FOR UNDERGROUND AND RGS FOR ABOVE GROUND CONDUITS. UNDERGROUND CONDUITS SHALL BE BURIED 30" MINIMUM BELOW GRADE. THE EQUIPMENT GROUND CONDUCTOR SHALL BE CONNECTED TO GROUNDING BUS INSIDE THE CABINET.
22. PROVIDE MINIMUM FOUR (4) 2" SCH. 40 PVC CONDUITS, TWO (2) 2" SCH. 40 PVC CONDUITS SPARE, TWO (2) 2" SCH. 40 PVC FOR LIGHTING CIRCUIT WIRING UNLESS OTHERWISE NOTED ON THE PLAN. REFER TO PLAN SHEETS FOR ADDITIONAL INFORMATION.
23. PROVIDE TYPE 2 SURGE PROTECTION DEVICE (SPD) ON THE SECONDARY SIDE OF MAIN CIRCUIT BREAKER LOCATED OUTSIDE THE LOAD CENTER ENCLOSURE. SPD SHALL BE MANUFACTURED BY ADVANCED PROTECTION DEVICE (APT), MODEL TE/XCS OR APPROVED EQUAL. SPD SHALL BE EQUIPPED WITH STATUS INDICATOR LIGHTS THAT ILLUMINATE GREEN DURING NORMAL OPERATION. SPD SHALL BE UL 1449 LATEST EDITION LISTED WITH A SHORT CIRCUIT CURRENT RATING AND 20 KA NOMINAL DISCHARGE CURRENT WITH NEMA 4X. CONTRACTOR SHALL CONTACT APT'S REPRESENTATIVE, (800) 237-4567 FOR FIELD CONFIGURATION INSTRUCTIONS.
24. CONCRETE SHALL HAVE A MINIMUM STRENGTH AT 28 DAYS OF 3,000 PSI. THE OUTSIDE EDGES OF THE SLAB SHALL BE CAST AGAINST FORMWORK.
25. COPPER EQUIPMENT GROUND TERMINAL BUS BONDED TO ENCLOSURE.
26. ACTIVE LIGHTING CIRCUIT WIRING. REFER TO PLAN SHEETS FOR MORE DETAILS.
27. NOT USED.
28. PROVIDE 600V RATING ENCLOSED CIRCUIT BREAKER, 60 AMP RATING, 30A TRIP, 35000 AIC, SOLID NEUTRAL, NEMA 4X STAINLESS STEEL, RATED FOR SERVICE ENTRANCE, OPERATING VOLTAGE 240/480V. USE #6 AWG FOR MAIN BONDING JUMPER BETWEEN EQUIPMENT GROUND BUS AND GROUNDED CONDUCTOR (NEUTRAL) BUS. EQUIPMENT GROUND BUS BONDED TO ENCLOSURE.
29. COPPER GROUNDED NEUTRAL TERMINAL BUS.
30. COPPER EQUIPMENT GROUND TERMINAL BUS.

GENERAL NOTES

1. PERFORM ALL ELECTRICAL WORK IN ACCORDANCE WITH LOCAL POWER COMPANY REQUIREMENTS, FDOT STANDARDS AND SPECIFICATIONS, NEC, NESC, AND OSHA.
2. SEE LIGHTING PLAN SHEETS FOR APPROXIMATE LOCATION OF THE POINT OF CONNECTION. COORDINATE WITH THE LOCAL POWER COMPANY FOR THE SERVICE SOURCE AND POINT OF CONNECTIONS, EXACT LOCATIONS AND THE NECESSARY REQUIREMENTS FOR A COMPLETE AND OPERATIONAL ELECTRICAL POWER SERVICE.
3. ALL CIRCUIT BREAKERS SHALL HAVE SYMMETRICAL MINIMUM SHORT CIRCUIT CAPACITY OF 14,000 AMPS.
4. LIGHTING ENCLOSURE SHALL BE FACTORY ASSEMBLED AND TESTED PRIOR TO SHIPMENT TO THE PROJECT SITE FOR INSTALLATION. ALL COMPONENT DEVICES SHALL BE UL LISTED AND LABELED. THE FULLY ASSEMBLED LOAD CENTER ENCLOSURE SHALL BE CERTIFIED BY UL. LOAD CENTER ASSEMBLY SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF FDOT DESIGN STANDARD INDEX.
5. FURNISH AND INSTALL THE 3-POLE LIGHTING CONTACTOR FOR 2-POLE APPLICATION IF NECESSARY. SEE KEYED NOTE NO. 12 FOR MORE INFORMATION.
6. THE ELECTRICAL COMPONENTS LAYOUT SHOWN IN RISER DIAGRAM AND WIRING SCHEMATIC DETAIL ARE DIAGRAMMATIC, THE CONTRACTOR SHALL TAKE RESPONSIBILITY TO INSTALL THE WHOLE SYSTEM IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE NEC AND LOCAL POWER COMPANY REQUIREMENTS.
7. ENSURE NO LIVE PARTS ARE EXPOSED.

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1022 26th Avenue East, Bradenton, FL 34208

DESIGN ENGINEER: MARCO A. LARA, P.E.
FL. LICENSE NO.: 78414

LOAD CENTER NOTES

SHEET NO.: L-13

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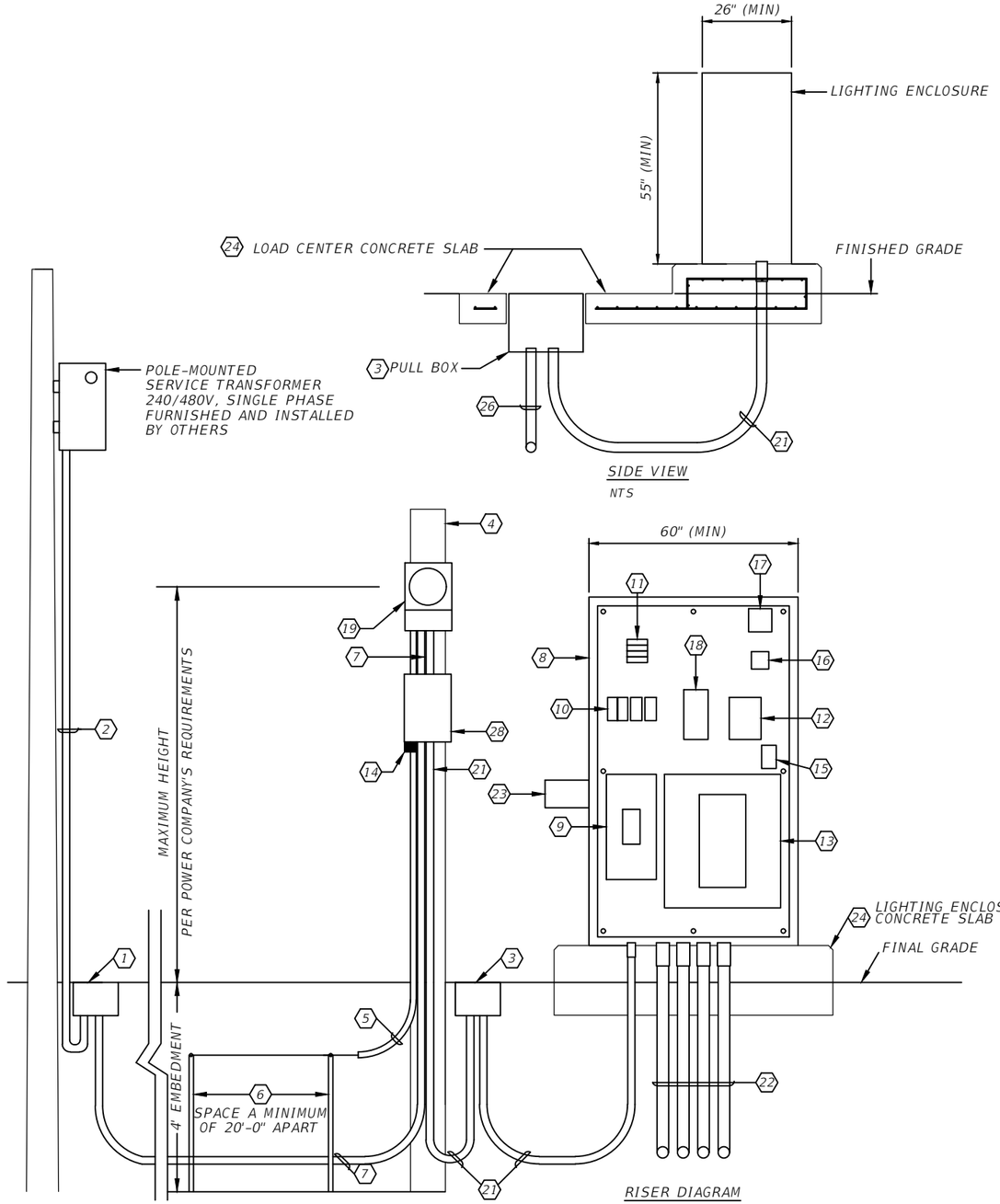
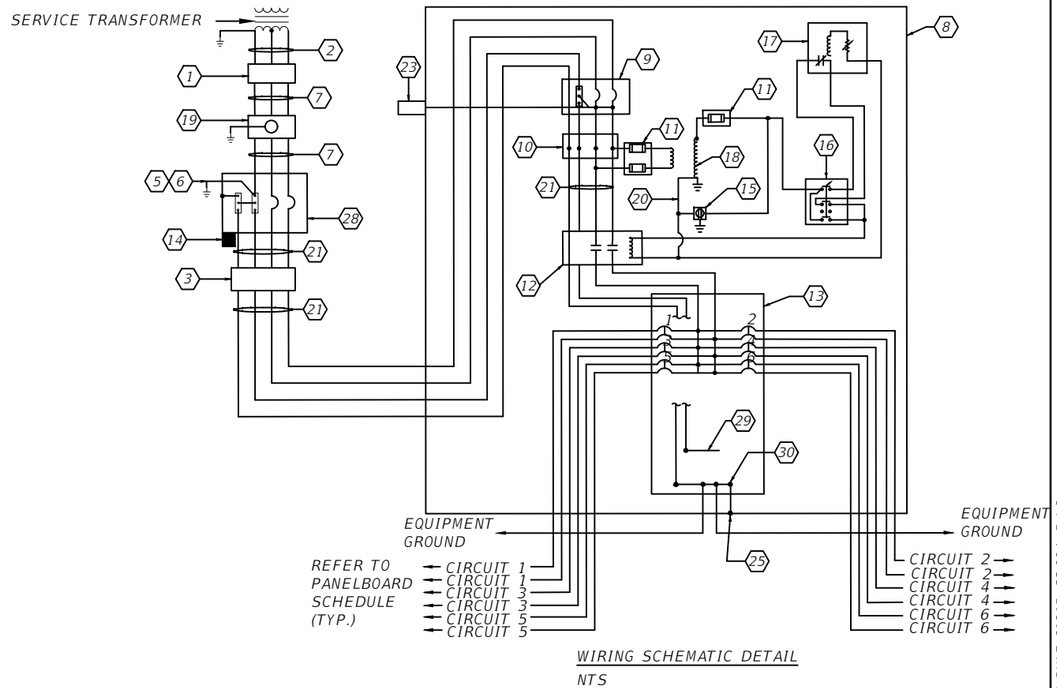


SIDE VIEW

NTS

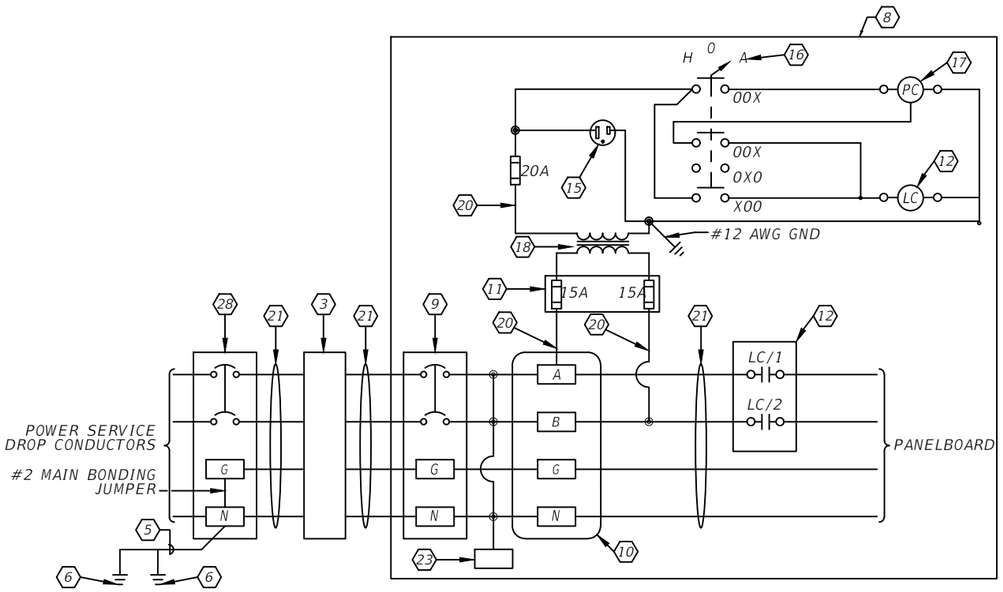
RISER DIAGRAM

NTS



WIRING SCHEMATIC DETAIL

NTS



CONTROL SCHEMATIC WIRING DIAGRAM

NTS

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Patrick Rosso

DESIGN ENGINEER: MARCO A. LARA, P.E.

FL. LICENSE NO. 78414

LOAD CENTER DETAILS

SHEET NO. L-14

5/5/2025 9:14:15 AM

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240/480V, 1 PHASE, 3W
WITH GROUND BUS

LOAD CENTER 'A'

PANELBOARD SCHEDULE

60A, M.L.O.
NEMA 1 ENCLOSURE

CKT. NO.	VA	AMPS	POLE	LOAD	CKT. NO.	VA	AMPS	POLE	LOAD
1	233	15	2	ROADWAY LIGHTING	2	349	15	2	ROADWAY LIGHTING
3	233				4	349			
5	233	15	2	ROADWAY LIGHTING	6			15/2	SPARE
7	233				8				
9		15	2	SPARE	10			20/2	SPD

CONNECTED LOAD: 1.6 KVA
3.35 AMPS

STA. 124+07

NOTES:

1. PANELBOARDS WITH NEMA 1, UL 67 RATINGS SHALL BE INSTALLED INSIDE PAD-MOUNTED NEMA 4X STAINLESS STEEL CABINET AT POWER SERVICE ENTRANCE LOCATIONS. REFER TO LOAD CENTER DETAILS FOR MORE INFORMATION.

2. THE LEAD LENGTH OF SPDS DURING INSTALLATION SHALL BE AS SHORT AND STRAIGHT AS POSSSIBLE. REFER TO KEYED NOTES FOR FURTHER INFORMATION.

3. PROTECTIVE DEVICE TIME-CURRENT COORDINATION ANALYSIS - THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING PERTINENT ELECTRICAL SYSTEM CONDUCTOR, CIRCUIT BREAKER, AND OTHER COMPONENT AND SYSTEM INFORMATION IN A TIMELY MANNER TO ALLOW THE TIME-CURRENT ANALYSIS TO BE COMPLETED PRIOR TO FINAL INSTALLATION. THE TIME-CURRENT CIRCUIT BREAKER COORDINATION ANALYSIS SHALL BE PERFORMED WITH THE AID OF COMPUTER SOFTWARE INTENDED FOR THE PURPOSE, AND WILL INCLUDE THE DETERMINATION OF SETTINGS, RATINGS, TYPES, AND THE SHORT CIRCUIT CURRENT AVAILABILITY.

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PANELBOARD SCHEDULE

SHEET NO.: L-15

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