

COMPONENTS OF CONTRACT PLANS SET
LIGHTING PLANS



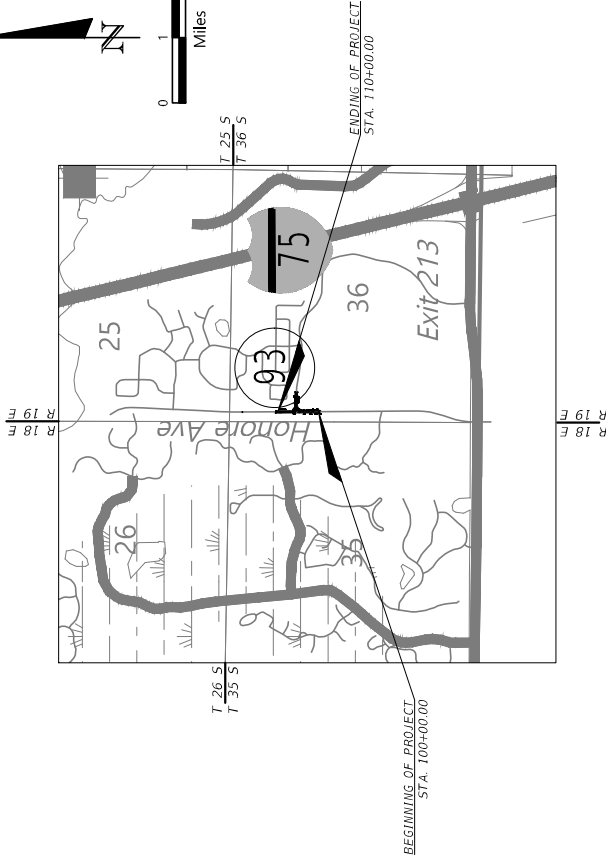
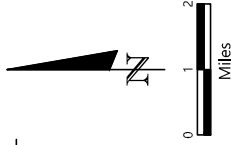
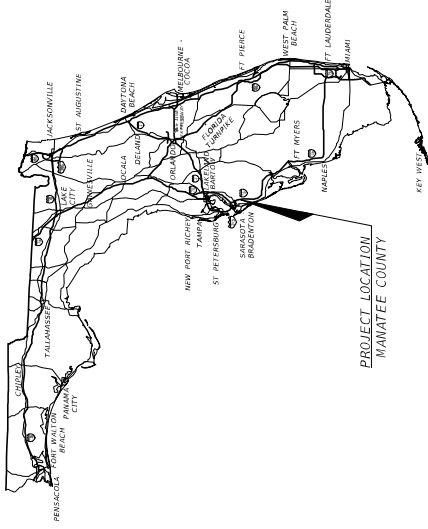
CONTRACT PLANS
COUNTY PROJECT NO. 6080560
MANATEE COUNTY

HONORE AVE. AT COOPER CREEK BLVD.

NOVEMBER 2020

INDEX OF LIGHTING PLANS

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PLANS PREPARED BY:
HARDESTY & HANOVER, LLC
5110 EISENHOWER BLVD, SUITE 310
TAMPA, FL 33634
(813) 749-0823

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

100% SUBMITTAL
LIGHTING PLANS
ENGINEER OF RECORD:

MARCO A. LARA, P.E.
P.E. NO.: 78814

FISCAL YEAR	SHEET NO.
20	L-1

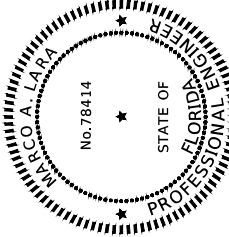
MANATEE COUNTY PROJECT MANAGER: ERIC SHROYER, P.E.

GOVERNING STANDARD PLANS:
Florida Department of Transportation, FY2021-22 Standard plans for
Road and Bridge Construction and applicable Interim Revisions (IRs).
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>

THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY:



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

HARDESTY & HANOVER, LLC
11101 SEVENHOWER BOULEVARD
SUITE 310
TAMPA, FL 33634
MARCO ANTONIO LARA, P.E.

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

SHEET NO.

- L-1
- L-2
- L-3
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SHEET DESCRIPTION

- KEY SHEET
- SIGNATURE SHEET
- TABULATION OF QUANTITIES
- GENERAL NOTES
- LEGEND
- PROPERTA
- PROJECT LAYOUT
- LIGHTING PLANS
- LOAD CENTER DETAILS

NO.	REVISIONS	DATE	BY	SCALE	AS NOTED	HARDESTY & HANOVER, LLC 11101 SEVENHOWER BLVD. SUITE 310 TAMPA, FL 33634 (813) 749-0823	DATE 11/20/20 PROJECT NO. 6080560	 MARCO A. LARA, P.E. FL LICENSE NO. 78414	DESIGN ENGINEER MARCO A. LARA, P.E. FL LICENSE NO. 78414	SIGNATURE SHEET	SHEET NO. L-2

NO.	REVISONS	DATE	BY	AS NOTED	HARDESTY & HANOVER, LLC 5110 EISENHOWER BLVD. SUITE 310 TAMPA, FL 33634 (813)749-0823	DATE	DESIGN ENGINEER		DATE	PROJECT NO.	FL LICENSE NO.	78414	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION	PUBLICATION
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PAY ITEM NOTES:

1. Pay Item 635-2-11 - Pull & Splice Box, Furnish & Install, 17"x30" Cover Size - Provide 17"x30" pull box with a minimum depth of 12" at locations as shown in the Plans.
2. Pay Item 639-3-11 - Electrical Service Disconnect, F&I, Pole Mount - Breaker shall be clearly labeled. The Electrical Service Disconnect shall be 15 amps, 120V for most arm luminaires. Connect line side of breaker to the Signalization electric service wire.
3. Pay Item 715-4-60 - Light Pole Complete, Relocate. Payment includes relocation of existing poles and conductors, removal of existing foundation, concrete pad, and any all installation of new foundation and removal of existing foundation, concrete pad, and any all associated hardware.
4. Pay Item 715-4-70 - Light Pole Complete Remove Pole and Foundation. Removal of miscellaneous items including but not limited to, arms, ground rods, surge arrestors, and all associated hardware, are incidental to pay item 715-4-70, Light Pole Complete, Remove Pole and Foundation.
5. Pay Item 715-512-125 - Light Pole Complete Special Design, F&I, Double Arm Shoulder Mount, Aluminum, 25'. Payment includes furnishing and installing new existing aluminum pole, dual arms, two luminaires mounted at 25' foundation, and any associated hardware required for complete installation.
6. Existing conduit and junction box removal shall be incidental to clearing and grubbing.
7. Refer to FDOT basis of estimates (BOE) for additional pay item information.

GENERAL NOTES

1.

UTILITY OWNERS:

Florida Power and Light - Distribution
Greg Coker Relocations Coordinator
1253 12th Avenue East
Palmisto, FL 34221
Email: Greg.Coker@fl.com
Work: 941-723-4430 (w)
Cell: 941-704-9087 (c)
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.

Any 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 "laminoid 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 bucc 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 not reflect actual field conditions. The Contractor shall verify the location and depth of all underground utilities, 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
19.

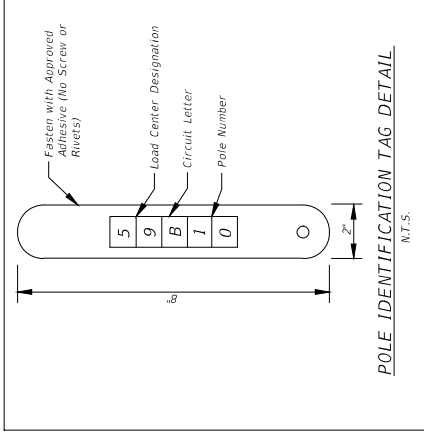
Record drawings and inspection forms must be delivered to the county at least two (2) business days prior to scheduling the final inspection.

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 handhole 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.

The Contractor shall perform due diligence when working on the existing lighting circuit to prevent unnecessary damage. Any damage by the Contractor, as determined by the Engineer, to the existing Honore Ave lighting system, including but not limited to conductors, fuses, conduit and light poles, shall be fixed by the Contractor at his own expense using new FDOT approved materials.
22.



NO.	REVISIONS	DATE	BY	CHECKED BY	AS NOTED BY	DATE	PROJECT NO.	DESIGN ENGINEER	GENERAL NOTES		SHEET NO.
					JHC	11/20/20	6080560	MARCO A. LARA, P.E. FL LICENSE NO. 78414			L-4



SYMBOL	DESCRIPTION	NO.	REVISIONS	DATE	BY	CHK	AS NOTED	HARDESTY & HANOVER, LLC 5115 SEBENHOWER BLVD. SUITE 301 TAMPA, FL 33634 (813) 749-0823	DATE	11/20/20	PROJECT NO. 6080560	DATE 11/20/20	DESIGN ENGINEER MARCO A. LARA, P.E. FL LICENSE NO. 78414	LEGEND	SHEET NO.
															L-5
	New aluminum pole with frangible base, dual 6ft arms, median mounted, with two LED luminaires arranged back to back. Each luminaire is 71W, 480V, 4000K, 8000 lumens, type III distribution, 25ft mounting height. Photometric distribution equal to GE Evolve Catalog Number ERL1-5-0C340 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.														
	Existing aluminum pole, dual arms, and two luminaires to remain.														
	Existing aluminum pole, arms, base, luminaires, concrete foundation and any associated hardware to be removed and disposed.														
	New aluminum pole with frangible base, single 10ft arm, shoulder mounted, with LED luminaire, 97W, 480V, 4000K, 9800 lumens, type II distribution, 30 ft mounting height. Photometric distribution equal to GE Evolve Catalog Number ERL1-5-10C340 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 LED luminaire and 10 ft bracket arm, mounted to new mast arm, 97W, 120V, 4000K, 9800 lumens, type III distribution, 40 ft mounting height, with integral photo electric sensor. Photometric distribution equal to GE Evolve Catalog Number ERL1-0-10C340-E or approved equal. Furnish and install complete assembly, including pole cable distribution system, junction box, grounding, and any associated hardware required for complete installation. Refer to FDOT Standard Plans Index 649-030 and 649-031.														
	New aluminum pole with frangible base, single 10ft arm, shoulder mounted, with LED luminaire, 97W, 480V, 4000K, 9800 lumens, type II distribution with enhanced back light, 30 ft mounting height. Photometric distribution equal to GE Evolve Catalog Number ERL1-5-10E340 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 LED luminaire and 10 ft bracket arm, mounted to new mast arm, 97W, 120V, 4000K, 9800 lumens, type II distribution with enhanced back light, 40 ft mounting height, with integral photo electric sensor. Photometric distribution equal to GE Evolve Catalog Number ERL1-0-10E340-E or approved equal. Furnish and install complete 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 649-030 and 649-031.														
	Existing decorative pole and luminaire to be relocated as shown in The Plans. Existing concrete foundation, junction box, concrete pad, and any associated hardware to be removed and disposed. Relocate pole and luminaire to new location and grounding at new light pole location. Refer to FDOT Standard Plans Index 715-001 and 715-002.														
	Existing light pole to remain.														
	Pull box and concrete pad. Refer to FDOT Standard Plans Index 715-001.														
	Existing junction box to remain.														
	Existing Load Center to remain.														
	Existing Point of Service.														
	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.														
	Existing underground 2" Schedule 40 PVC conduit to remain.														

CONVENTIONAL LIGHTING DESIGN

CRITERIA

Average Horizontal Illuminance
4:1 Or Less
Uniformity Ratio Max./Min.
150 MPH

SIGNALIZED INTERSECTIONS WITH CROSSWALKS

Average Horizontal Illuminance
3:0 Foot Candles (1.5 fc min.)
1.5 Foot Candles (1.2 fc min.)
4:1 Or Less
Uniformity Ratio Avg./Min.
10:1 Or Less
Wind Speed
150 MPH

UTILITY/AGENCY OWNERS

Utility Agency Owner	Contact Names	Phone Number
1 AT&T	Steve Hamer	813-888-8300, Ext: 201
2 AT&T	Michael Gamboa	813-888-8300, Ext: 201
3 Charter Communications	James L. Cruzan	727-329-2846
4 Black & Veatch Tampa IF	Ken Soule	913-458-4667
5 Comcast	Leonard Maxwell	754-221-1254
6 Florida Power and Light	Greg Coker	941-723-4430
7 Frontier Communications	Toni Canton	813-875-1014
8 Manatee County Utility Operation	Kathy McMahon	941-792-8811, Ext: 5002
9 Crown Castle	Danny Haskett	786-610-7073
10 TECO - Peoples Gas	Joan Downing	813-275-3783
11 Sarasota County Traffic	Dean Young	941-264-8288
12 Sarasota County Utilities	Karla Sohaili	941-861-0525
13 MGI Communication		469-886-4091



PERMANENT
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Joseph Carter on

4/17/2021 4:58:04 PM

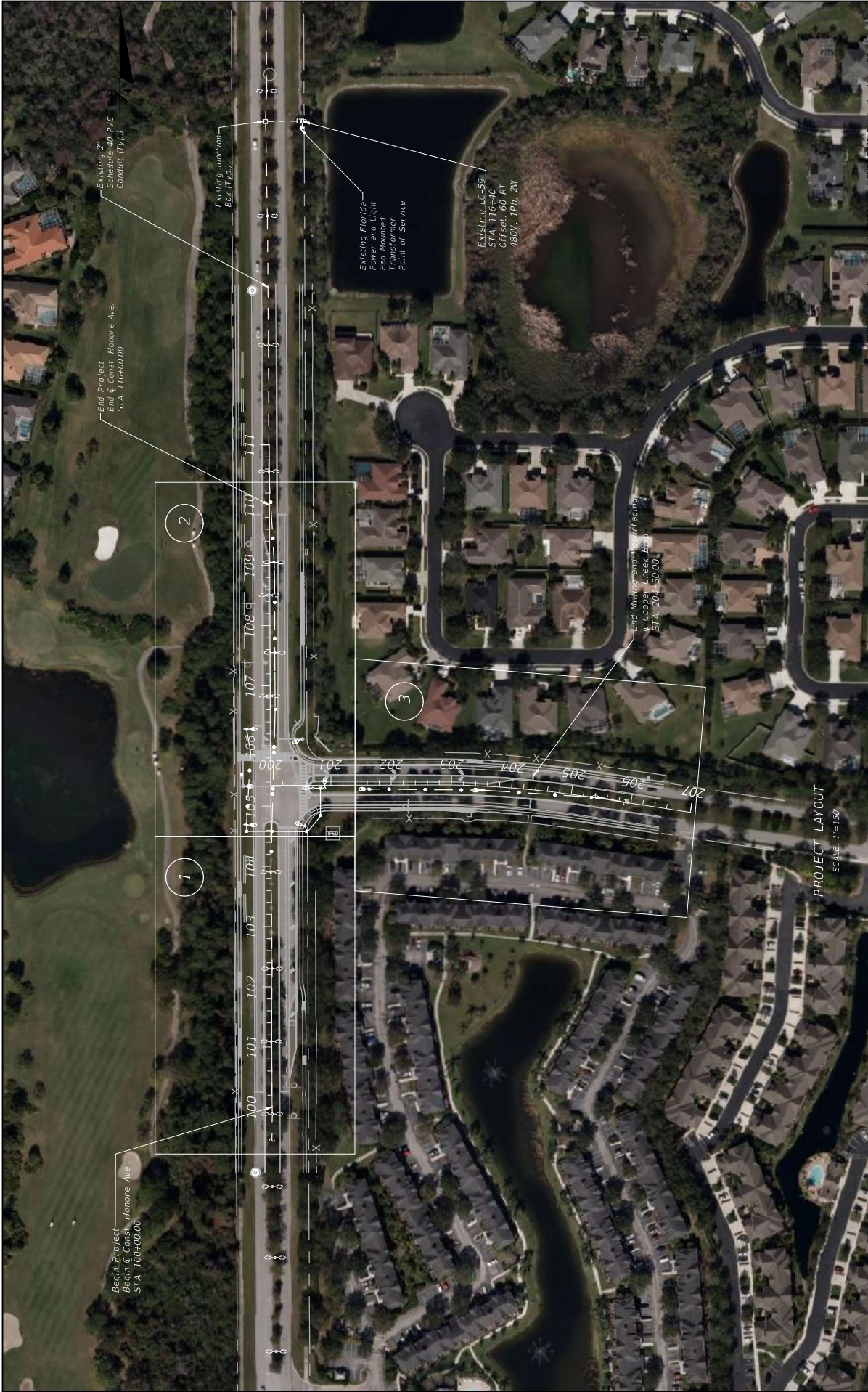
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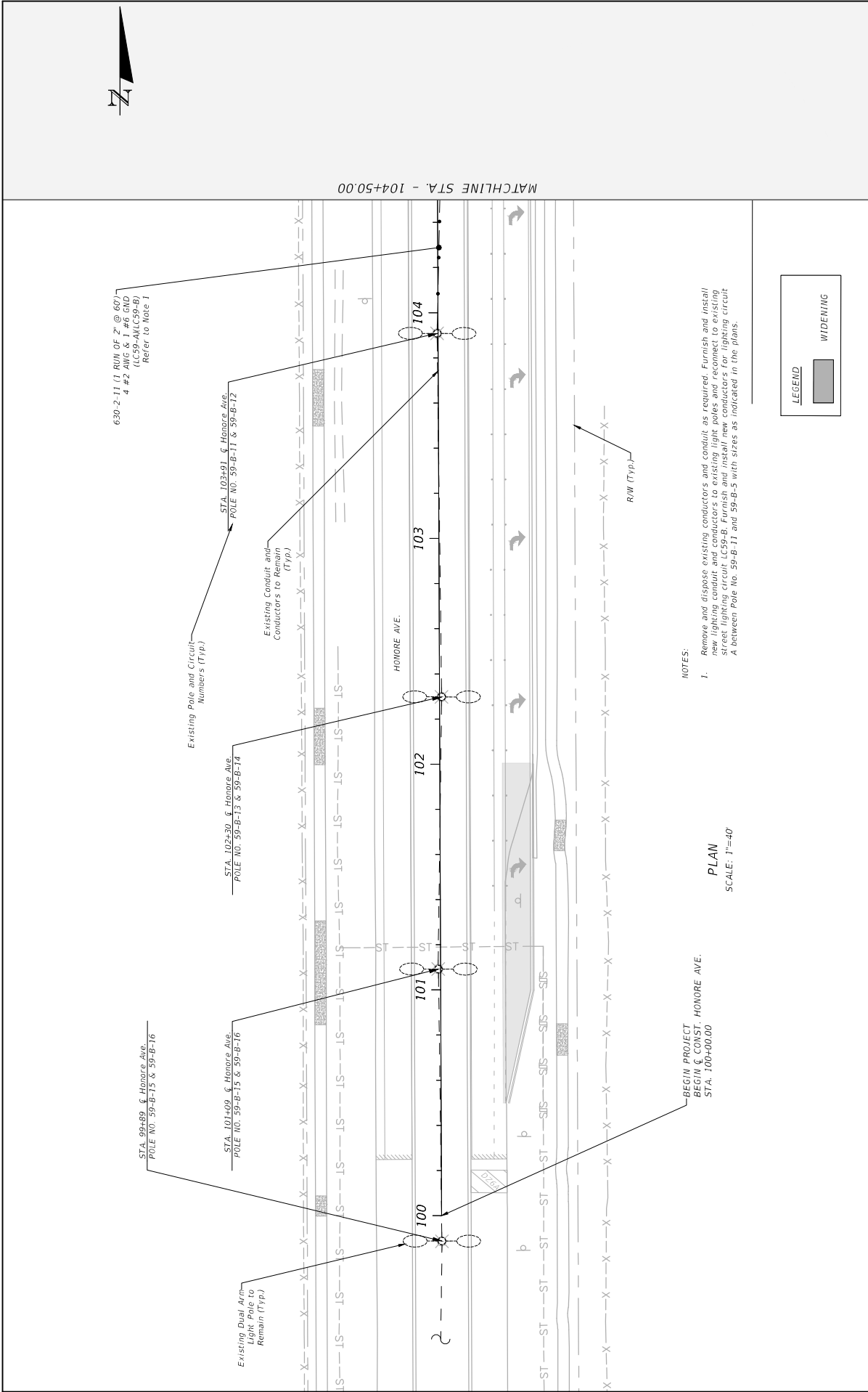
**PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES**
3072 26th Avenue East, Bradenton, FL 34208

POLE DATA

SHEET
NO. 9-7

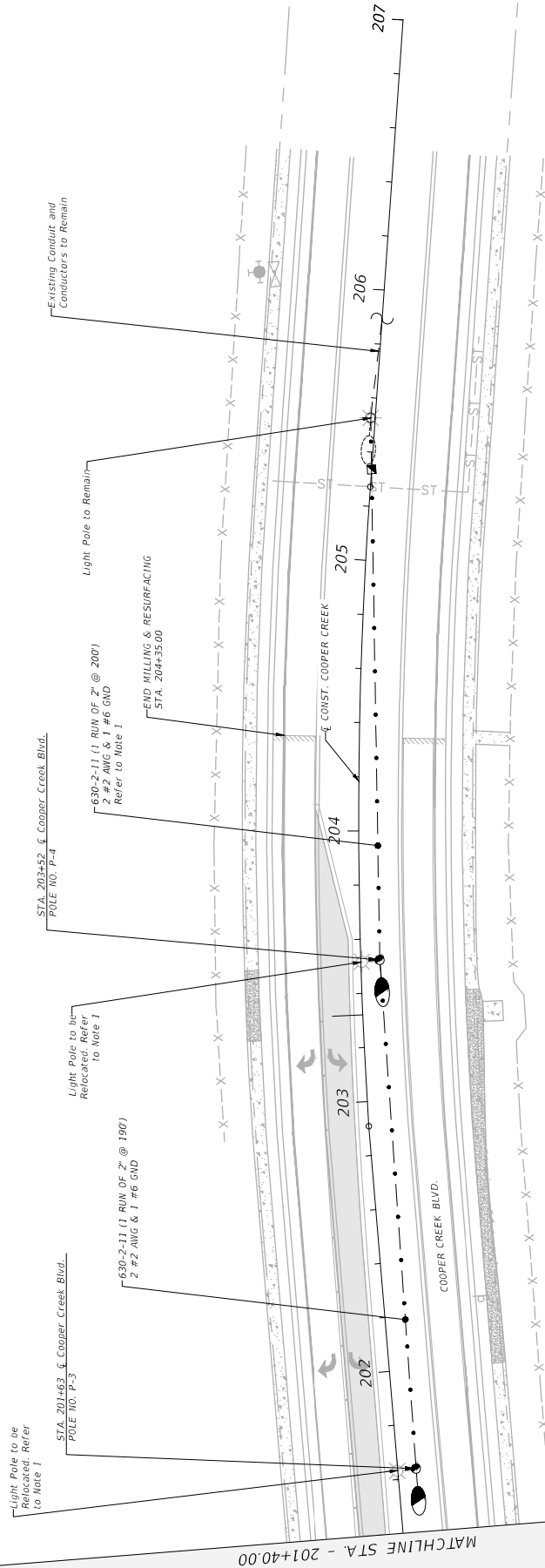


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