LAFAYETTE UTILITIES SYSTEM

DEVELOPMENT GUIDELINES FOR ELECTRIC (COMMERCIAL)

Revised

July 2026

LAFAYETTE UTILITIES SYSTEM
1314 WALKER ROAD
LAFAYETTE, LA 70502

(337)291-5858

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SECTION II

ELECTRICAL PROCEDURES

2-1 General Provisions

A. Type of Developments

Developments in this section are divided into the categories of Single-lot Commercial, Multi-lot Commercial, Single-lot and Multi-lot Residential Developements.

1. Single-lot Commercial developments are commercial lots for development as shopping centers, industrial buildings, schools, and churches.

2. Multi-lot Commercial developments are individual parcels of land which have been subdivided into two (2) or more individual commercial lots.

3. Multi-lot Residential developments are parcels of land that have been subdivided into individual lots.

4. Single-lot Residential developments are multi-family complexes located on a singularly owned parcel of land.

B. Improvements

Improvements are electrical facilities installed by the Owner/Developer of Developments at their total cost which are necessary to provide electrical service to the Developments. The Improvements are for perpetual maintenance and ownership by LUS upon the acceptance of the facilities by LUS.

C. Agreement to install improvements

The Owner/Developer of all Residential Developments requiring Improvements shall enter into a written agreement with the Lafayette City-Parish Consolidated Government. The Owner/Developer for Multi-lot Commercial Developments requiring Improvements shall install said Improvements as a condition of final plat approval.

D. Guarantee

In order for the Owner/Developer of Developments requiring Improvements to receive approvals (i.e. building permit, certificate of occupancy, plat approval)

prior to the installation and release of the Improvements for service, a performance bond or letter of credit shall be granted to LUS.

E. Warranty and Guaranty

The Owner/Developer of Developments requiring Improvements shall Warrant the Improvements for a period of one (1) year from the established start of the warranty period. The warranty period shall begin no earlier than Final Inspection and completion of the punch list items.

F. Easements

The Owner's/Developer's Engineer shall prepare the necessary easements to encompass the actual location of the installed Improvement on the final plat of the property or a LUS approved format. The typical easement width is ten (10) feet. The Engineer shall record the approved easement in the Lafayette City-Parish Consolidated Government Courthouse and provide a true copy to LUS.

G. Construction Control

The Owner/Developer of all Residential Developments shall provide a qualified resident inspector. LUS provides inspections for all Commercial Developments.

2-2 Commercial Electrical Procedures

A. The developer shall be required to install an underground raceway system in order for LUS to provide an electrical distribution system. LUS shall install the conductors, terminations, cabinets and transformers.

1. Prior to the design, the developer's engineer/ architect shall contact LUS staff to indicate the intentions of the developer relative to building construction.

2. LUS will provide the electrical system design according to LUS criteria and specifications.

3. The Developer shall submit to the LCG permit department a set of construction plans that shall include:
   - Electric site survey showing all existing electric facilities
   - Proposed electric routing (civil consultant shall ensure route has straight line paths and is free of obstructions)
   - Proposed transformer location.
   - Electric load summary, panel schedules and riser diagram.
   - Plat of site including pertinent information as shown on the final

subdivision plat such as street names and right-of-ways, property corners, all bearings, curve data, property dimensions, all existing easements, all new easements, all adjacent property owners and streets, lot numbers, municipal addresses, vicinity map, owner/developer, subdivision name, typical utility easement drawing, north arrow and all notes shown on the final subdivision plat.

4. LUS engineering staff will mark-up in red ink the layout of the proposed system and return same to Developer or his authorized representative. Also submitted to the Developer will be a bid package for construction which consists of the electric layout and a set of LUS specifications and typical details. This information shall be used by the Developer to have the electrical system installed by a licensed and qualified electrical contractor.

5. The Developer or his authorized representative shall schedule a pre-construction meeting with LUS staff prior to commencing construction.

APPENDIX - A

ELECTRICAL ACKNOWLEDGMENT FORMS

OWNERS ACKNOWLEDGMENT FORM (COMMERCIAL)
ELECTRICAL LOAD SUMMARY (COMMERCIAL)

OWNER'S ACKNOWLEDGMENT FORM FOR ELECTRICAL SERVICE

To: Owner/Developer

Subject: Owner's/Developer's Acknowledgment of Project Requirements for Planning, Zoning, and Codes Plan Reviews (Electric).

Utility: Lafayette Utilities System (LUS) - Commercial Services Section
1314 Walker Road
Lafayette, LA 70506
Attn: Marcus Criner (mcriner@lus.org)

Mission: The intent of this form is to ensure LUS that the Owner/Developer of the properties submitting plans for underground primary line extensions onto private property is properly informed of all project requirements in order to avoid unnecessary delays.

Owner's Acknowledgment:

Project Name: _____

Project Address: _____

Owner's Name: _____

Owner's Phone Number: _____

Owner's Email Address: _____

Owner's Signature: _____

Date: _____

I hereby acknowledge the requirements listed below and the specific plan review comments furnished through Planning, Zoning, and Codes (attached) for the above project. The requirements are as follows:

1. _____is the Owner's Engineer/Architect for this project.

   Engineer/Architect's Phone Number: _____

   Engineer/Architect's Email Address: _____

2. Project specifications and typical details shall be submitted to LUS for review. The Owner's Engineer/Architect shall be solely responsible for ensuring current LUS specifications and typical details are adhered to. LUS shall provide copies of said specifications and details to the Owner's Engineer/Architect or his authorized representative.

3. The Owner's Engineer/Architect or his authorized representative shall present a proposed route of the underground primary electric line to LUS. The route shall consist of straight-line paths, the length of each straight-line path and the distance each straight-line path is relative to property lines (refer to attached drawing).

   The Owner's Engineer/Architect shall select said proposed route in a manner such that there are no conflicts with any obstructions deriving from any other part of the project. Owner/Developer shall be responsible for informing the LUS Engineering Division of any known conflict(s) at the time of this service request and the resolution to rectify said conflict(s). Examples of said conflicts shall include, but not be limited to, overhangs, awnings, gutters, general space requirements for safe operations, and ingress and egress. Owner shall be responsible for notifying the LUS Engineering Division of any unforeseen conflict(s) as soon as the Owner/Developer is made aware of the same.

4. _____ is the Owner's Professional Land Surveyor for this project.

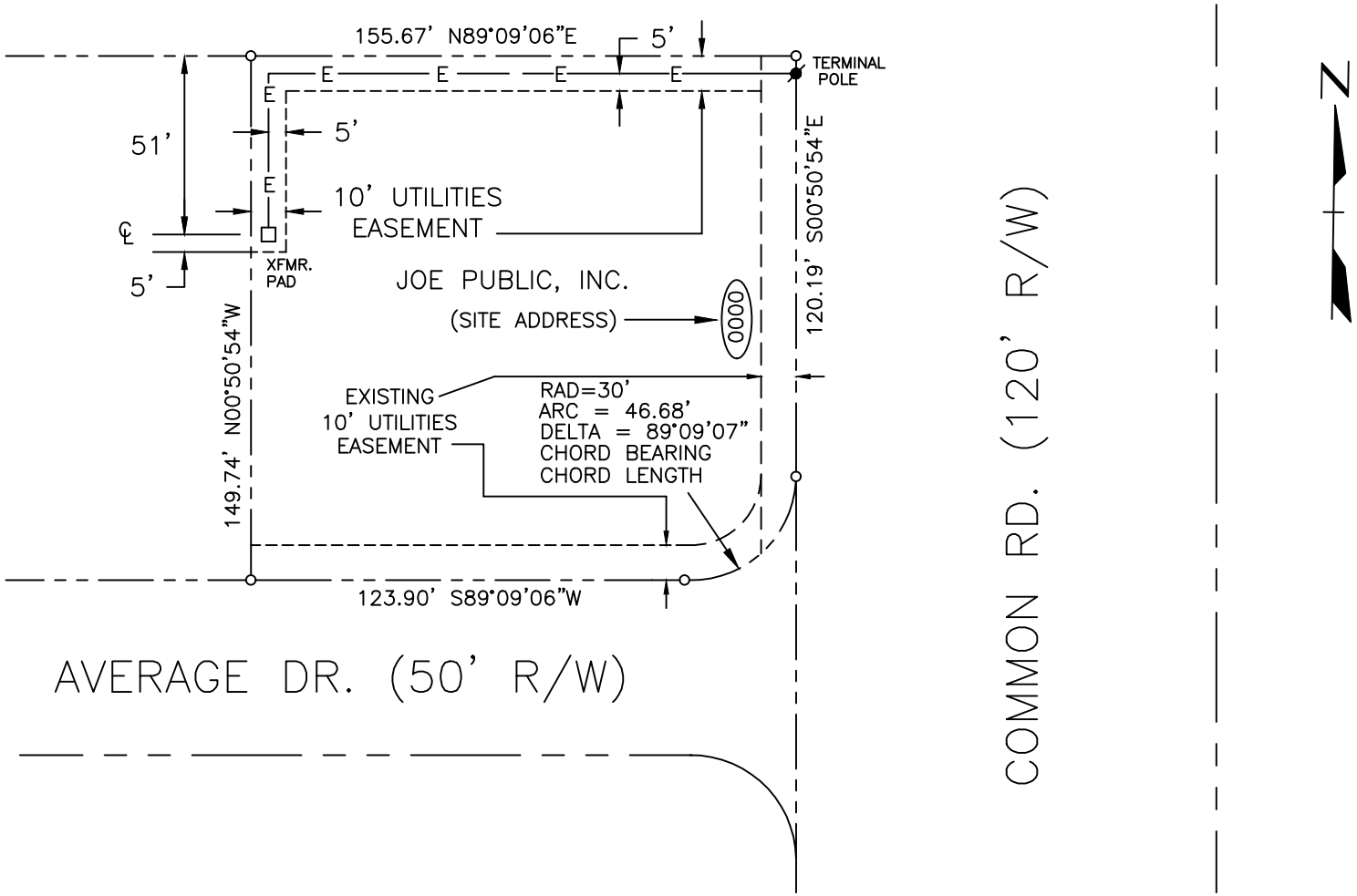
   Land Surveyor's Phone Number: _____

   Land Surveyor's Email Address: _____

   The Owner's Surveyor is responsible for preparing a surveyed plat of the property indicating the property boundaries, the building and its location on the lot, the electric source, the transformer, the underground primary line, and a ten (10) foot utilities easement that envelops the underground primary line, five (5) feet on either side of the line. The plat shall show all dimensions and distances described in Item 3 above. The plat shall be recorded at the Lafayette Parish Courthouse along with a signed and notarized dedication of servitude agreement provided by LUS. A copy of the recoded plat and dedication of servitude is to be submitted to LUS.

5. The Certificate of Occupancy shall not be issued until all project requirements are completed.

xc: File



JOHN DOE, P.L.S. #12345 LAND SURVEYOR

NOTE:
INFORMATION OBTAIN FROM
A PLAT OF SURVEY PREPARED BY LAND SURVEYOR
MONTH DAY, YEAR (DATE OF ORIGINAL SURVEY PLAT)

UTILITIES EASEMENT TO
BE GRANTED TO
LAFAYETTE UTILITIES SYSTEM
BY
JOE PUBLIC, INC.
000 COMMON DR
SECTION 00, T0E–R0E

Drawing No. M1999–014

SCALE: 1"=50'

DATE: 7/20/99

Electrical Load Summary

	Hours of Operation Per Day:	kVA Electric Loads:	Check One Below:
Lights	____ Hrs	____ kVA	____ 1ph, ____ 3ph
Receptacles	____ Hrs	____ kVA	____ 1ph, ____ 3ph
Air Conditioning (no. of units = _____)	____ Hrs	____ kVA	____ 1ph, ____ 3ph
Heat Pump (no. of units = _____).....	____ Hrs	____ kVA	____ 1ph, ____ 3ph
Heat Strips (no. of units = _____)	____ Hrs	____ kVA	____ 1ph, ____ 3ph
Water Heater	____ Hrs	____ kVA	____ 1ph, ____ 3ph
Fans	____ Hrs	____ kVA	____ 1ph, ____ 3ph
Motor(s) (largest hp rating _____)	____ Hrs	____ kVA	____ 1ph, ____ 3ph
Welder(s)	____ Hrs	____ kVA	____ 1ph, ____ 3ph
Vehicle Charging Station(s) _____	____ Hrs	____ kVA	____ 1ph, ____ 3ph
Miscellaneous Load(s)	____ Hrs	____ kVA	____ 1ph, ____ 3ph
	Total Connected Load:	____ kVA	____ 1ph, ____ 3ph

Voltage: _____

I, _____, state that the information provided above is correct

for the following project: _____

at the following address: _____

and agree to resubmit a new electrical load summary should any changes occur.

Signature of individual providing information: _____

Email address: _____

Work Phone: _____ **Cell Phone:** _____

Name of firm/buisness: _____

Date submitted: _____

Proposed date of completed electrical service: _____

APPENDIX - B

GENERAL SPECIFICATIONS
FOR
UNDERGROUND ELECTRICAL CONSTRUCTION

GENERAL SPECIFICATIONS FOR UNDERGROUND ELECTRIC

REVISION: 1.0

APPROVED DATE: 12/11/2020

LAFAYETTE UTILITIES SYSTEM

1314 WALKER ROAD, LAFAYETTE, LA 70506

(337) 291-5858

Approvals:

Engineering/Power Supply Manager		Date:	12/07/2020
Electric Operations Manager		Date:	12/4/2020

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1. USE OF GENERAL SPECIFICATIONS

The following is a set of General Specifications for the construction of an underground electric distribution system. Projects may be generated by LUS or may be the responsibility of the Developer. Depending on the scope of the project, all sections may not pertain to all jobs. The Contractor will be responsible only for the sections that pertain to his specific job. If the Contractor is not sure if a section pertains to his job he shall consult the Developer for Residential Projects or LUS Engineering Commercial and Non Commercial projects for verification

2. PROJECT DETAILS

Project Details (Appendix A) shall be completed by LUS and provided to bidders prior to bidding the project. Project Details contain the Project Name, Scope of Work, Schedule, Payments and Penalties

3. REQUIREMENTS

A. GENERAL

1. It is the intention of these General Specifications that all electrical systems be furnished complete and produce a satisfactory installation in a working order
2. All electrical equipment shall be installed per manufacturers specification unless otherwise authorized by LUS
3. The Contractor shall protect the entire electrical system from injury on the project until final acceptance
4. Failure of the contractor to protect the entire electrical system from injury on the project until final acceptance shall be sufficient cause for LUS to reject any equipment
5. The Contractor shall furnish all labor necessary to install the complete electrical portion of the contract
6. For the exception of the materials provided by LUS per the "Detailed Specifications Section (5) (A), the contractor shall provide all material necessary to complete the electrical system per this contract
7. The contractor shall report, to the following, any deficiencies of the design, otherwise shall be responsible in full to meet the conditions set forth, that being, the system is to be in a satisfactory working order:

   a) NON COMMERCIAL

   LUS

   b) COMMERCIAL/RESIDENTIAL

   LUS and Developer

B. STANDARDS

1. **WORK AND SAFETY**

Work shall be done in strict compliance with and therefore bound by the following Federal, State and Local Ordinances, Standards and Procedures governing this class of work:

(1) National Electrical Code (NEC)

(2) National Electrical Safety Code (NESC)

(3) National Fire Protection Association (NFPA)

(4) Occupational Safety and Health Association (OSHA)

(5) LCG Code of Ordinances Chapter 78

(6) Louisiana Administrative Code Title 70 Part 2 Utilities

(7) LUS Procedures for Underground Contractors (LUS)

(8) LUS policy on clothing and PPE for ARC Flash (LUS)

(9) Construction Standards (LUS)

2. MATERIALS

All materials furnished under this contract shall be designed, constructed, rated and shall pass tests as recommended therein in accordance with the following latest applicable standards:

(1) National Electrical Manufacturers Association (NEMA)

(2) American Nationals Standards Institute (ANSI)

(3) American Society for Testing and Materials (ASTM)

(4) Material Specifications (LUS)

C. UNDERGROUND CONTRACTORS LIST

1. NON COMMERCIAL

The Contractor shall be pre-qualified prior to bidding

2. COMMERCIAL/RESIDENTIAL

a) The Contractor‘s name shall appear on the approved underground contractors list provided to the Developer by LUS

b) Should the Developer desire to hire a contractor whose name does not appear on LUS's approved contractors list, he shall immediately notify the Electric Operations Department (LUS) and request certification of said contractor prior to said contractor making any high-voltage terminations at any locations

c) Upon written approval from the Electric Operations Department (LUS), the said contractor shall be allowed to proceed with the required terminations on the project

D. SAFETY

1. WORK ON ENERGIZED CONDUCTORS AND EQUIPMENT

a) The Contractor shall treat all electrical systems as energized and protect the system and workers accordingly.

b) The Contractor shall also comply with the latest work and safety regulations and practices set forth by the standards in Section (3) (B) (1)

2. LUS reserves the right to reject any employee working under this contract that conducts himself in an unsafe manner or does not properly perform his work
3. All employees of the Contractor will be subject to drug testing at the Contractor's expense prior to beginning work for LUS
4. No employee of the Contractor who fails the test will be allowed to work on LUS' property
5. The Contractor shall be responsible to ensure that all employees are trained in and be familiar with the safety related work practices, safety procedures, and other safety requirements as per Section (B) (1)
6. Contractor must attend a safety briefing at LUS prior to the starting the project
7. Contractor will have a documented safety program for his personnel
8. Contractors are required to investigate all incidents involving energized facilities, following the contractor's process for "near miss" incidents and to submit documentation to LUS' designated representative. In addition and at any time, LUS reserves the following rights:
   - **a)** The requirement of the Contractor to provide documentation of proper recourse (safety & training conducted with at-fault personnel at the Contractor's expense, etc.) to designated company representative
   - **b)** If at-fault personnel are repeat offenders, LUS reserves the right to require the removal of the individual(s) from LUS property
   - **c)** Remove workload from the Contractor
   - **d)** Bar the Contractor from working on the LUS system

E. MATERIALS

1. APPROVALS

- **a)** The Contractor shall base his proposal on materials herein specified
- **b)** Reference to specific manufacturers or trade names is not intended to limit or indicate preference to specific manufacturers, but to indicate a standard of quality
- **c)** The Contractor shall be responsible for installing the proper materials as described by the drawings and specifications
- **d)** All materials furnished for this project shall be new, undamaged, and bear the label of the Underwriters' Laboratories, Inc.
- **e)** Written approval from LUS is required on all substitutions prior to installation

2. DELIVERY AND STORAGE

- **a)** The contractor shall leave materials in manufacturer's original package and store on skids so that materials are off the ground, and so that product labels are exposed for easy inspection
- **b)** Remove all wrappings from street light standards

F. PERMITS

The Contractor shall be responsible for obtaining all Federal, State and Local required permits and inspections required for the project as well as assume all cost in obtaining permits and inspections for the project

G. RIGHT OF WAYS

1. PUBLIC RIGHT OF WAY

LCG Code of Ordinances Chapter 78 shall be adhered to in this Contract. Copies of the aforementioned will be made available to the Contractor upon request

2. STATE RIGHT OF WAY

Louisiana Administrative Code Title 70 Part 2 Utilities shall be adhered to in this contract and can be obtained via the Louisiana DOTD website

H. COORDINATION OF WORK

1. DAILY NOTIFICATIONS

a) The Contractor shall notify LUS Dispatch @ 291-5700 each day of his work location and job number before proceeding to work, each time the Contractor moves into a different area, and when the Contractor leaves the location for the day

b) In the event that the Contractor causes a fault on the electrical system, the Contractor shall immediately notify LUS Dispatch @ 291-5700

c) The Contractor shall not intentionally disconnect electric service to any customer, nor shall he operate any devices owned by LUS

2. WORK SCHEDULE

The Contractor shall only work during regular working hours of LUS Field Operations Section or as requested by LUS Field Operations or LUS Engineering

I. FAMILIARITY WITH CONDITIONS

1. SITE

a) Prior to the submission of the bid proposal, the Contractor shall make and shall be deemed to have made a careful examination of the project site, the plans, and specifications.

b) The Contractor shall visit the site and become informed of the following:

(1) Location and nature of the proposed construction

(2) Kind and character of soil and terrain to be encountered

(3) Kind of facilities required before and during the construction of the project

(4) General local conditions and all other matters that may affect the cost and the time of completion of the project

c) Failure to become familiar with site conditions shall not relieve him of meeting the responsibility to install the work correctly

d) The Contractor further agrees that the contract prices are based on his own knowledge and judgment of the conditions and hazards involved, and not upon any representation of the drawings

e) LUS, nor the Developer, assume any responsibility for any understandings or representations made by any of its representatives prior or during execution of the contract; unless such understandings or representations are expressly stated in the contract and the contract expressly provides that the responsibility, therefore, is assumed by LUS or the Developer

2. OTHER UTILITIES

Any records of sub-surface conditions, water records, gas records, telephone records, cable TV records, other utility records, or other observations which may have been made on the drawings, have been made for informational purposes only and implies no guarantee as to the accuracy of the records nor any interpretation of them

J. TESTING

All testing shall be per the Detailed Specifications Section 19

K. QUANTITIES

1. NON COMMERCIAL

NA

2. COMMERCIAL/RESIDENTIAL

Quantities of materials will be measured by an inspector furnished by the developer to ensure that the items called for on the plans were actually installed

4. SUBMITTALS

The Contractor shall submit the required submittals as per the Detailed Specifications Section 2

5. CONSTRUCTION FORCE

A. PERSONNEL

1. The Contractor shall provide and maintain in full operation at all times during the performance of the contract a qualified and sufficient crew of helpers, linemen and a foreman to execute the work

2. The Contractor shall provide an approved foreman from the list of such who shall be employed full time by the Contractor and who shall be on the job during all working periods

3. The foreman shall also be on the job in the event the Contractor should hire a sub-contractor

4. The Contractor shall be responsible for maintenance and repair of all equipment installed by him or his sub-contractor which fails due to substandard workmanship

5. QUALIFICATIONS

a) Upon request by LUS Operations, the Contractor shall furnish a list of names and associated letters of qualifications for all personnel employed by the contractor or all employees of its sub-contractors to be used on the project

b) Personnel not qualified to perform work on energized high voltage electrical lines shall be replaced with qualified personnel

c) A qualified employee shall have training and be competent in the skills necessary to work on energized high voltage electrical lines

d) The qualifications shall be based upon the employee's years of experience, work safety record and knowledge of:

(1) The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment

(2) The skills and techniques necessary to determine the nominal voltage of exposed live parts

(3) The minimum approach distances specified in this section corresponding to the voltages to which the qualified employee will be exposed

(4) The proper use of the special pre-cautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools for working on or near exposed energized parts of electric equipment

B. EXPERIENCE

1. The Contractor shall have a minimum of (5) years of experience in the construction of underground electric distribution systems

2. The contractor, at a minimum, shall have experience working on energized underground electric distribution lines of at least 13.8kV and substation work

3. TERMINATIONS

a) Prior to the Contractor being awarded the Contract, he shall demonstrate his ability to perform high-voltage terminations per current techniques of LUS, and qualify for such

b) The test shall be performed in the presence of an approved representative of LUS Electric Operations Division, and arrangements to be made with same

6. DRAWINGS

Drawings are intended to describe and illustrate the desired layout of the project. The dimensions shall be modified only if a conflict in construction arises and LUS Engineering agrees such modifications are necessary.

A. DRAWINGS PROVIDED BY

1. NON COMMERCIAL

LUS Engineering to provide drawings

2. COMMERCIAL/RESIDENTIAL

Developer to provide drawings

B. CHANGE ORDERS

1. At no time shall the Contractor deviate from the intent of the drawings or these specifications unless an approved change order (APPENDIX B) is completed and approved by LUS Engineering

2. If the Contractor deems changes are needed different from the drawings, the Contractor shall notify LUS Engineering to review the changes and create a change order (APPENDIX B) if changes are approved

7. GUARANTEE

A. MATERIAL

1. The contractor shall provide the following guarantee, for all new materials provided by the contractor, for the exception of lamps and fuses which are exempt after acceptance:

a) NON COMMERCIAL

NA

b) COMMERCIAL/RESIDENTIAL

(1) One full year after formal acceptance of the project

(2) Contractor shall absorb all costs of contractor provided materials needed for repair of the system

B. WORKMANSHIP

1. The contractor shall provide the following guarantee for workmanship defects caused by the contractor:

a) One full year after formal acceptance of the project

b) Contractor shall absorb all costs of labor needed for repair of the system

8. MAINTENANCE

The Contractor shall perform maintenance work which shall include, if applicable, straightening of poles, resetting anchors which do not hold properly, filling of settled trenches or excavations, repairing the damage caused by such settlement, or any other maintenance or repairs relating to the project deemed necessary by LUS Operations. In the event that the repairs are not made within a reasonable time from the date of notice, LUS Operations may have the work performed by other parties. The cost arising from such repairs shall be paid by the Contractor. Maintenance Notices (APPENDIX C) will be sent via the following:

A. NON COMMERCIAL

Written notice (APPENDIX C) shall be given to the Contractor by LUS Operations when maintenance is required

B. COMMERCIAL/RESIDENTIAL

Written notice (APPENDIX C) shall be given to the Developer by LUS Operations when maintenance is required

APPENDIX A

A. PROJECT NAME

B. SCOPE OF WORK

Give brief summary of job. List any details that are non-typical of this type of project	

C. BID PROPOSALS

1. Bidder understands that the total proposed quote is for the total cost of the project

D. SCHEDULE

1. The Contractor shall have a total of _____ (Calendar/Working) days to from the start date to complete the project

2. It is expressly understood and agreed by and between the Contractor and LUS that the time stipulated for completion of the job takes into consideration the potential that adverse weather conditions and industrial conditions may cause delays in prosecution of the work, and the Contractor stipulates and agrees that weather conditions and industrial conditions shall not constitute grounds for extension of the time for the competition of the work contemplated under the contract unless authorized by LUS

E. PAYMENT

1. Non Commercial

a. The Contractor may invoice LUS for work performed upon completion of the project

b. The work performed shall meet the approval of LUS prior to any payments made to submitted invoice

c. LUS will pay to the Contractor a total of _____% of the contract price

d. The remaining _____% shall be paid to the Contractor after a one year time period

2. Commercial/Residential

a. The Contractor may invoice the Developer for work performed on a monthly basis

b. The work performed shall meet the approval of LUS

c. The owner shall process payment after verification of the invoice

F. PENALTIES

1. For each calendar day or working day, as the case may be, that any work remains incomplete after expiration of the contract time and/or any extensions thereof, _____% of the total construction price will be deducted from payments due the Contractor not as a penalty but as liquidated damages as a result of the delay in completion of work
2. In the event that LUS should choose to permit the Contractor to continue the work after expiration of the contract time, or as such contract time may be extended, such will not operate as a waiver by LUS of its rights to recover liquidated damages
3. In the event that the LUS terminates the Contractor, the LUS shall retain the right to assess, collect, and recover liquidated damages from the Contractor and/or the Surety until the work under the contract is satisfactory complete
4. Then amount of liquidated damages will be deducted from the remaining balance of funds due the Contractor under the contract
5. In the event that liquidated damages which accrue prior to completion of the work under the contract should exceed the remaining balance of funds due the Contractor under the contract, the Contractor shall forfeit any rights to claim additional payments under the contract and both the Contractor and his Surety shall be liable for accrued liquidated damages in excess of contract balance

APPENDIX B

CHANGE ORDER

CONTRACTOR:		CITYWORKS ID:					
		JOB NUMBER:					
		ENGINEER:					
PROJECT TITLE:		ADDRESS:					
Change Order Type:	Place an "X" for type of Change Order requested		Drawing		Time		Cost

Reason For Change Order:

Material				Labor/Equipment			
Qty	Stock No.	Cost	Ext.	Qty	Description	Rate/hr	Ext.

Material Subtotal:	
Labor/Equipment Subtotal:	
Grand Total:	

Project Engineer:		**Contractor:**	
Date:		**Date:**	

APPENDIX C

MAINTENANCE NOTICE		
CONTRACTOR:	CITYWORKS ID:	
	JOB NUMBER:	
	ENGINEER:	
PROJECT TITLE:	ADDRESS:	
Maintenance Description:		

Maintenance Completed By:		**Date:**	

Verified By:		**Date:**	

APPENDIX - C

DETAILED SPECIFICATIONS

FOR

UNDERGROUND ELECTRICAL CONSTRUCTION

DETAILED SPECIFICATIONS

FOR UNDERGROUND ELECTRIC

REVISION: 1.0

APPROVED DATE: 8/31/2016

LUS

LAFAYETTE UTILITIES SYSTEM

LAFAYETTE UTILITIES SYSTEM

1314 WALKER ROAD, LAFAYETTE, LA 70506

(337)-291-5858

Approvals:

Engineering/Power Supply Manager		Date:	08/31/2016
Electric Operations Manager		Date:	8/31/16

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1. USE OF DETAILED SPECIFICATIONS

The following is a set of detailed specifications for the construction of an underground electric distribution system. Depending on the scope of the project, all sections may not pertain to all jobs. The Contractor will be responsible only for the sections that pertain to his specific job. If the Contractor is not sure if an article pertains to his job he shall consult the Developer for Residential Projects or LUS Engineering Commercial and Non Commercial projects for verification.

2. SUBMITTALS

A. MATERIAL SPECIFICATION SHEET

1. NON COMMERCIAL

a) Submittals are not required

2. COMMERCIAL

a) Submittals are not required

3. RESIDENTIAL

a) Material Specification Sheet located in Section (24) must be filled out in its entirety and turned into LUS operations prior to commencement of work

3. FINAL ACCEPTANCE INSPECTION

A. NON COMMERCIAL

1. No Final Acceptance Inspection required

B. COMMERCIAL

1. No Final Acceptance Inspection required

C. RESIDENTIAL

1. Contractor shall contact LUS Operations via email at **subinspection@lus.org** when installation of the electrical distribution system is complete
2. Within 72 hours of notification by the contractor, LUS will inspect the electrical distribution system and the street lighting system for proper operation and, if needed, create a list of issues that need to be addressed before acceptance of the system
3. LUS shall notify the contractor of any outstanding issues via email

4. MATERIALS FURNISHED BY CONTRACTOR

A. NON COMMERCIAL

1. All materials listed per the drawings to be provided by LUS

B. COMMERCIAL

1. All materials listed per the drawing to be provided by the contractor for the exception of materials listed in Section (5) (A) (2)

C. RESIDENTIAL

1. All materials listed per the drawing to be provided by the contractor for the exception of materials listed in Section (5) (A) (3)
2. The contractor shall complete a specification sheet, located in Section (24), in its entirety and submit to LUS prior to installation

5. MATERIALS FURNISHED BY LUS

A. MATERIALS ISSUED

1. **NON COMMERCIAL**
   a) All materials to be provided by LUS
2. **COMMERCIAL**
   a) Metering Equipment
   b) Ground Sleeves for Cabinet Pads
3. **RESIDENTIAL**
   a) Transformers
   b) Cabinets
   c) Ground Sleeves for Cabinet/Transformer Pads

B. PICKUP

1. Material list shall be submitted to inventory 72 hours in advance of starting project to give inventory adequate time to pull material
2. Materials supplied by LUS can be picked up at the Warehouse located at 1210 Walker Rd
3. It shall be the contractors responsibility to transport material from the warehouse to the job site
4. Contractor shall be liable for materials and equipment lost for any reason after these materials have been released by LUS

C. RETURN

1. Any excess material and equipment issued by LUS remaining from the job must be returned to inventory upon completion of work

6. STAKINGS

The Contractor shall be responsible for locating all existing utilities. The Contractor shall not disturb property corner pins, and if so, shall employ a Registered Land Surveyor to replace said pins. The Contractor shall be responsible for all damages to landscaping that he causes.

A. NON COMMERCIAL

1. LUS shall stake the centerline of the trenches, right-of-ways, easements, niches and the locations of all structures per LUS Underground Standards

B. COMMERCIAL

1. The developer shall be responsible for providing all documentation for staking trench lines, property lines and niches

C. RESIDENTIAL

1. The Developer shall stake the trench centerline, structures at the trench centerline and side property lines, back of niche and side property line, side property line, when there is no niche, and radius points, where applicable as per LUS Underground Specifications

7. OTHER UTILITIES

It shall be the responsibility of the contractor to coordinate work with all other utilities and contractors involved with this project

8. CONDUIT

A. POLYVINYLCHLORIDE PLASTIC (PVC)

1. **SCHEDULE 40**
   a) Shall be in accordance with NEMA Standard TC2-2013, EPC-40 and as specified in LUS Standard UCONV-__
2. **SCHEDULE 80**
   a) Shall be in accordance with NEMA Standard TC2-2013, EPC-80 and as specified in LUS Standard UCONV-80-__

B. ELBOWS (PVC)

1. Elbows shall adhere to radius requirements as specified in LUS Standard UC-90-__

C. POLYETHYLENE PLASTIC (PE)

1. Shall be in accordance with the most current ASTM Standards D3035 and NEMA Standard TC7 and as specified in LUS Standard UCONE-__

D. PULL STRING

1. Contractor shall install pull string in all empty conduit
2. Shall have a 1200 pound minimum pulling capacity
3. Shall be a minimum of 3/16" inches
4. Shall be rust, proof, mildew proof, and be pre lubricated

E. CONDUIT PREPARATION

1. The Contractor shall ensure that the cable can be drawn through the conduit with ease and with no obstructions that could damage the cable prior to the pulling of the high-voltage cable into the conduit
2. Preparation shall include swabbing the inside of the conduit with mandrels to clean and lubricate it
3. Lubricant shall be a high-grade silicone type that can be introduced into the conduit in conjunction with the mandrels.
4. Any equipment used to prepare the conduits should be intended for that type of work
5. Conduit ends shall be sealed until cable is to be pulled through
6. All conduit joints shall be either solvent welded or fusion welded

9. CASING

A. STEEL CASING

1. MATERIAL

a) Contractor shall furnish and install cold-rolled hard carbon steel casing of correct quantity and in the locations as indicated in the drawings

b) Casing shall have a complete bitumastic coating before and after installation

c) Size of casing shall be per drawing

2. DEPTHS

a) Depth shall be per LUS Standards LUS Standard UXSC-__ unless otherwise stated by drawings

3. WELDING

a) Casing shall be joined together by the shielded electric arc welding process, in compliance with the current specifications of the American Welding Society, applicable to the work performed

b) Welding operators and machines shall be qualified for the particular type of work to be done

c) In no case shall welding be done in inclement weather, or under physical conditions that may in the opinion of LUS impair the efficiency of the welder in making acceptable welds

d) All welds on casing shall be continuous

10. CABLE

A. INSTALLATION

1. Pulling Lube shall be used on any underground installation of cables in conduit, including any length and all conductor types and sizes
2. Cables pulled in a single conduit shall be of the same size and type

3. When two or more cables are pulled into one conduit, they shall be pulled at the same time
4. Cables shall be pulled into conduit with a pulling eye attached to the cable or a pulling grip placed over the cable sheath, insulation or jacket
5. Cables that will not be terminated the same day they are pulled shall have the ends sealed
6. Contractor shall provide an approved hydraulic pressure cable tension monitoring system or a dynamometer used on all pulls
7. Contractor shall provide equipment necessary to handle heavy cable-pulling which includes minimum 8" wide pulling sheaves, cable guides, and any other accessories required to ensure that the cable is pulled into the conduit without damage to the cable

B. CABLE TENSION

1. Maximum Cable Tension and Maximum Side Wall Pressure shall be stated per drawings
2. It is recommended that for future upgrading of cable in the proposed conduit, Maximum Cable Tension and Maximum Side Wall Pressure be calculated for the maximum size cable that can utilized in the conduit

11. TRENCHING (GENERAL)

A. TRENCH LINES

1. Trenches shall be straight with center line as shown on the drawings
2. A chalk line or other acceptable means of marking shall be used to maintain a straight trench.

B. LAYOUT/SEPERATION

1. Conduit layout and separation shall be per LUS Standard UXT-__ unless otherwise stated per drawings

C. DEPTHS

1. Depths shall be per LUS Standard UCONV-__ unless otherwise stated per drawings
2. Depths that do not meet the minimum cover required shall be encased in concrete with prior approval by LUS

D. EXCAVATED MATERIAL

1. All excavated material shall be placed in such a manner that the public will not be inconvenienced
2. All driveways, crosswalks, sidewalks, streets and private roadways shall remain unobstructed unless authorized by LUS
3. All drains, gutters and sewers for surface drainage shall be kept clean of excavated material and if unavoidably closed, other provisions shall be made for drainage

E. PUBLIC SAFETY

1. The Contractor shall provide barricading for any open excavation left overnight
2. The perimeter of the excavation shall have strong vertical supports placed every five (5) feet around the perimeter, and firmly secured to such shall be four (4) foot high, orange-colored, stabilized polyethylene barrier fencing with a mesh of 0.78" by 0.30"
3. Excavations that are eight (8) feet wide or less shall be covered with 3/4" thick plywood. Vertical supports shall be set a minimum of 28" in the earth or have a concrete foundational base.

F. BACKFILLING

1. The bottom of the trench shall be smooth and free of coarse aggregate and loose dirt
2. All trenches shall be backfilled the same day that they are trenched if possible otherwise Section (11) (E) must be followed.
3. The Contractor shall backfill and return the soil to its original compaction, elevation and contour of surrounding soil
4. If the backfill material is too dry to compact the desired density, it shall be wetted as required
5. If the backfill is too wet to compact, fresh backfill shall be used in its place

12. DIRECTIONAL BORING (GENERAL)

A. RECEIVING PITS

1. EXCAVATING

a) Small receiving pits will be allowed at both the starting and terminating point of a bore

b) Pits for boring shall be dug at Right of Way lines unless otherwise directed by LUS

c) Pits shall only be as wide and deep as needed to begin boring

d) Sod above receiving pits shall be removed with at least 1" of soil attached prior to digging the pit and replaced upon completing of backfilling

e) Contractor shall provide adequate sheeting and shore bracing to prevent earth cave-ins if applicable

2. BACKFILLING

a) **STATE/PUBLIC RIGHT OF WAY (Title 70)(Part II)(Chapter 5)(§515)(A)(3)**

(1) Shall be backfilled and tamped in six inch layers to the density of the adjacent undisturbed soil

(2) When backfilling shoulder of roadway, the top six inches of backfill shall be sand-clay gravel or equivalent

(3) Where SOD is removed or destroyed, it shall be replaced

b) LUS EASEMENTS/PRIVATE

(1) Shall be backfilled and return the soil to its original compaction, elevation and contour of surrounding soil

B. BORING

1. Conduit to be used shall be stated per the drawing
2. Bores shall be made horizontally and the method of boring shall be directionally controlled, fluid assisted mechanical cutting
3. All bores shall be surface-launched
4. The maximum allowable bore length under ideal soil conditions shall be 500 linear feet
5. Less than ideal conditions will necessitate that bores be less than 500 feet long
6. Any changes in bore length stated on drawings shall require prior approval by LUS

C. DEPTHS

1. Minimum depth shall be per LUS Standard UCONE-__ unless otherwise stated per drawings
2. Maximum depth shall be 6' unless approved by LUS
3. Depths that don't meet the minimum cover required shall be encased in concrete with prior approval by LUS

D. SLURRY

1. The drilling fluid/slurry that is suitable for local soil conditions including but not limited to bentonite or polymer type shall be utilized during the drilling process

E. BORE SIZING

1. Bores containing single or multiple conduits per bore shall be back reamed to the size necessary for the installation of the required conduit unless otherwise specified by drawings

F. REAMER

1. Bored holes shall be back-reamed to the size necessary for the installation of the required conduit (s)
2. Utility conduits pulled into place during the reaming process will be attached to the reamer with a suitable swivel in order to prevent any twisting of the conduit (s)

G. DRILLING UNIT

1. The Contractor shall have the ability to track the drill bit/head with an accuracy of at least +/- 6 inches both horizontally and vertically during boring. The maximum allowable percent of vertical grade of the bore shall be 2% (i.e., 2 feet vertical in 100 feet horizontal). The maximum horizontal deviation of the bore is 2% (i.e., 2 feet on one side of the centerline in a 100 foot run) measured from the centerline of the bore
2. The boring equipment shall be furnished with a safety sensing device in the boring bit that sounds an alarm to the operator when the bit is in the vicinity of an energized electric line.

3. In the event the Contractor should hire a Subcontractor to perform the directional drilling portion of the work, he shall provide the information in Appendix B on said Subcontractor.
4. The Contractor shall also provide the information in Section (25) on the specific directional drilling unit to be utilized on this project regardless of whether the Contractor or the Subcontractor owns said unit.
5. The Contractor shall make said directional drilling unit available to LUS Operations for inspection within twenty-four (24) hours after the bid opening.

13. ROAD CROSSING

A. JACKING/BORING

1. Conduit to be used shall be per drawing
2. Water jetting will not be permitted
3. **STATE ROADS**
   - **a)** Top of the conduit(s) shall be at least 4 feet below the bottom of the existing or proposed pavement (Title 70) (Part II) (Chapter 5) (515) (B) (2) (b)
   - **b)** Top of the conduit(s) shall be at least 2 feet below ditches or drainage structures unless otherwise stated per drawings (Title 70) (Part II) (Chapter 5) (515) (B) (2) (c)
   - **c)** Markers shall be installed over installation at Right of Way lines denoting location, product carried, operator and telephone number(Title 70) (Part II) (Chapter 5) (515) (B) (3) (a) (ii)
   - **d)** Overcutting in excess of 1 inch of diameter of pipe shall be remedied by pressure grouting the entire length of the installation within the Right of Way(Title 70) (Part II) (Chapter 5) (515) (B) (7) (b) (iv)
   - **e)** Multiple bores shall maintain a minimum of 6 inch and a maximum of 12 inch separation between conduits in all directions
4. **PUBLIC ROADS (ARTERIAL)**
   - **a)** Minimum depth shall be per LUS Standard UXPC-__ unless otherwise stated per drawing
   - **b)** Multiple bores shall maintain a minimum of 6 inch and a maximum of 12 inch separation between conduits in all directions
   - **c)** Conduit shall be installed by boring such that the bore hole is not greater by two inches than the outside barrel diameter of the casing (Section 78-123, LCG Code of Ordinance)
5. **PUBLIC ROADS (RESIDENTIAL)**
   - **a)** Refer to Section (13) (A) (4) for specification

B. STREET CUTTING

1. **STATE ROADS**
   - **a)** No open cutting of roads is allowed

2. **PUBLIC ROADS (ARTERIAL)**
   a) Conduit to be used shall be per drawings
   b) Conduit layout and separation shall be per LUS Standard UXT-__ unless otherwise stated per drawings
   c) Depths shall be per LUS Standard UCONV-__ unless otherwise stated per drawings.
   d) All street cuts whether concrete or asphalt shall be saw cut to produce a straight, clean edge around patch to be restored.
   e) The street crossing shall be backfilled to sub-grade with "Fill-Crete", a cement grout mixture combined in the following proportions per yard:

Cement	188 lbs.
Sand	3010 lbs.
Water	42.6 gal.

   f) Concrete or any other alteration of this mix is not acceptable
   g) One half of street may be cut at one time allowing traffic to use other lane unless LUS and Public works approves the entire street to be cut at one time.
   h) Streets shall be closed to through traffic without the permission of LUS.
3. **PUBLIC ROADS (RESIDENTIAL)**
   a) Refer to Section (13) (B) (2) for specifications

14. COULEE CROSSINGS, OBSTRUCTIONS AND SUBSURFACE DRAINAGE

A. TRENCHING

1. **TRENCH LINES**
   a) Refer to Section (11) (A) for specifications
2. **LAYOUT/SEPERATION**
   a) Refer to Section (11) (B) for specifications
3. **DEPTHS**
   a) Depths shall be per LUS Standard UXCC-__ unless otherwise stated per drawings
   b) It shall be the decision of LUS to determine if an obstruction crossing warrants reinforcement with red dye concrete
   c) All conduits are to be laid at a depth of at least eighteen (18) inches below the invert of drainage pipes for public or private drainage
   d) With the approval of LUS and Public Works, in cases where this depth is deemed excessive, conduits may be laid above subsurface drainage provided minimum cover is maintained
4. **EXCAVATED MATERIAL**
   a) Refer to Section (11) (D) for specifications

5. **CONCRETE**
   a) The concrete shall encase the conduits with a minimum of 3" all around each conduit
   b) The concrete shall be as in Section (13) (B) (2) (e) with the addition of red dye
   c) Concrete or any other alteration of this mix is not acceptable
6. **PUBLIC SAFETY**
   a) Refer to Section (11) (E) for specifications
7. **BACKFILLING**
   a) Refer to Section (11) (F) for specifications

B. JACKING/BORING

1. All coulee crossings shall be made with PE SDR-11 conduit
2. Depths shall be per LUS Standard UXCC-__ unless otherwise stated per drawings

15. FOUNDATIONS AND PADS

A. GRADE

1. **CABINET PADS**
   a) The top of all concrete cabinet pads (feed-thru and fused) shall be per LUS specifications and standards for cabinets
2. **TRANSFORMER PADS**
   a) The top of all concrete transformer pads shall be per LUS specifications and standards for transformers

B. BACKFILLING

1. Backfill shall be placed in 6" layers (loose depth) and mechanically tamped to attain 95% compaction
2. No sand of any sort may be used in backfilling

C. CONCRETE

1. Concrete shall have a minimum compression strength of 3,000 psi at 28 days
2. The water-cement ratio shall not exceed seven (7) U.S. gallons of water per sack of cement
3. The concrete shall contain a minimum of five (5) sacks of cement per cubic yard, and shall be a gravel/sand mix
4. The concrete slump shall be between 1" and 3" without a frequency vibrator, and reduced by 1/3 when a frequency vibrator is used
5. All poured-in-place concrete structures shall be poured monolithically, vibrated to assure freedom from cavities and honeycomb, and the surfaces are to be finished smooth with no indentations or bumps
6. All concrete test to be performed by LUS as necessary

D. ASSEMBLY

1. Refer to LUS standards for assembly and components of foundations and pads

E. STUB OUTS

1. Bell ends shall be installed at the end of all stub out entries into structures, and shall extend at least 1", but no more than 2", into the structure
2. Contractor shall provide the number of conduits in the transformer pad or cabinet pad as indicated in the drawing
3. Stub Outs from transformers and pedestals for services to homes shall be 2" PVC conduit
4. **SPARE STUB OUTS**
   a) Contractor shall provide the number of spare conduits in the transformer pad or cabinet pad as indicated per the drawings
   b) The spare stub outs from the transformer pad, cabinet pad or pedestal shall be extended a minimum of 36" from the edge of the pad or pedestal in the direction indicated in the drawings

16. TAGGING/LABELING

A. CABLE

1. Tags shall be provided by LUS
2. Cable Ties shall be provided by LUS

B. TRANSFORMERS/CABINETS/PEDESTAL ENCLOSURES

1. Shall be labeled with 4" adhesive decals
2. Decals shall be yellow and black alphanumeric plastic peel-off type
3. Decals shall be applied in the upper right-hand corner of the front door of transformers and cabinets
4. Decals shall be applied in the upper front part of pedestals so that the decals can easily be seen from the street
5. Decals shall be supplied by LUS

C. RISER POLES

1. Shall be labeled with 4" adhesive decals
2. Decals shall be yellow and black alphanumeric plastic peel-off type
3. Decals shall be applied 6' from grade level and visible from road
4. Decals shall be supplied by LUS

17. TRANSFORMER/CABINETS/PEDESTALS

A. GROUNDING

1. The primary neutrals will be bonded together in the high voltage compartment using compression connectors

2. The ground wire shall be a 2/0 bare soft drawn copper wire and shall be bonded to the primary neutral in the high voltage compartment and to the transformer ground lug
3. In the low voltage compartment, the 2/0 wire shall be tied to the neutral bussing of the transformer and to the transformer ground at the pad
4. All ground wire running through the concrete pad shall be installed in 1" PVC conduit
5. Transformer type ground lug shall be provided by:
   a) **NON COMMERCIAL**
      (1) LUS shall provide transformer ground lugs
   b) **COMMERCIAL**
      (1) LUS shall provide transformer ground lugs
   c) **RESIDENTIAL**
      (1) Contractor shall furnish transformer type ground lug per LUS Standards for transformers

B. TAGGING/LABELING

1. **CABLE**
   a) Refer to Section (16) (A) for tagging cable
2. **TRANSFORMERS/CABINETS/PEDESTAL ENCLOSURES**
   a) Refer to Section (16) (B) for tagging enclosures

18. RISER POLES AND CONDUIT SUPPORT

A. CONDUIT

1. Refer to Section (8) (A) (2) for specifications
2. Conduit for riser poles shall extend from a minimum of one (1) foot below grade to a minimum of eight (8) feet above grade
3. All conduits above 8' may be PVC Schedule 40 conduit per Section (8) (A) (1)
4. Bell ends shall be installed at the end of all risers

B. CONDUIT HANGERS

1. Conduit hangers shall be provided per the following guidelines:
   a) **NON COMMERCIAL**
      (1) LUS shall provide conduit riser standoffs
   b) **COMMERCIAL**
      (1) Contractor shall provide conduit riser standoffs
   c) **RESIDENTIAL**
      (1) Contractor shall provide conduit riser standoffs

C. TAGGING/LABELING

1. **CABLE**
   a) Refer to Section (16) (A) for tagging cable

2. **CONDUIT**
   a) Refer to Section (16) (C) for tagging conduit

D. OTHER FACILITIES

1. Cross-arms required for pothead installations shall be provided and installed by LUS
2. Existing facilities to be adjusted shall be done by LUS
3. The Contractor shall be required to complete the underground system up to and including a point that shall be indicated in the drawings

19. CABLE TESTING

A. HIGH POTENTIAL TEST FOR H.V. CABLE

1. All tests shall be made by LUS, which will include supplying the necessary testing equipment and a qualified operator of that equipment.
2. Interpretation of the results of the tests shall be made by LUS.
3. The Contractor's representative shall be present during all tests.
4. The Contractor shall notify LUS at least 48 hours prior to the time he desires to have the tests performed.
5. If a cable fails the test, the contractor shall locate any and all faults and replace cable as necessary at no extra charge.
6. If, in the opinion of LUS, other cables in the same conduit have not been damaged, they may remain installed while the cable that failed the test shall be replaced with a new cable.
7. After replacement of faulty or damaged cable, all cable within that conduit shall be re-tested.

20. TORQUING OF CONNECTIONS

Conductors inserted in the secondary connectors shall be torqued to the force in ft.-lbs. as per the manufacturer's specifications. The contractor shall provide LUS with a Manufacturers Specification Sheet located in Appendix A which contains the manufacturers name and torque specifications for all secondary connectors. LUS will inspect the connections by means of a torque-reading device. Should any connection not meet the manufacturers specifications, the Contractor may be required, by LUS, to re-torque all secondary connections in the project.

21. FINAL GRADE

A. RESIDENTIAL

1. Final Grade shall be established and achieved by the developer prior to any electrical construction commencing
2. Final Grade must be 36" minimum above all conduits, according to LUS specifications in the construction standards
3. LUS Electric Operations shall inspect the depth of the conduits and the height of the top of all concrete pads, in regards to the Final Grade prior to any backfilling, for adherence to LUS specifications
4. If the Final Grade is higher than the height of the roadway, all driveways shall be constructed so as to not affect the minimum depth of conduit that must be maintained
5. No final acceptance will be issued by LUS until all of these requirements have been met
6. No final acceptance will be issued by LUS until all of these requirements have been met

22. LIGHTING

A. RESIDENTIAL

1. FOUNDATIONS FOR ALUMINUM POLES

a) The Contractor shall provide all concrete, reinforcing steel, ground rods and anchor bolts necessary for a complete foundation

b) The concrete shall be as described above and shall be poured in place

c) Set anchor bolts in accordance with manufacturer's template and recommendations

d) Foundations shall be as shown on the plans

2. APRONS FOR ALUMINUM POLES

a) The top of the foundation shall have an apron that extends an additional 20" diameter to the foundation and is 4" thick

b) The apron shall be at the same grade as the foundation, and shall be poured as part of the foundation (no joints)

3. POLE EXCAVATION FOR FIBERGLASS POLES

a) Streetlight pole excavations are to be four (4) feet deep with a minimum diameter of twelve (12) inches and maximum diameter of sixteen (16) inches

b) Excavations are to be compacted to match existing grade

4. SETTING AND ALIGNING POLES

a) Poles shall be set level with true vertical, which shall be done after the luminaire is mounted

b) For installation in the vicinity of open ditches, streetlight standards shall not be installed until the final contour of the ditch is attained

c) In the vicinity of curbs and subsurface drainage, the street light standards shall not be installed until the paving contractor has installed the curbs

d) Conduits may be installed prior to the installation of curbs, as desired by the Contractor, but the cost of adjusting shall be borne by the Contractor

e) Poles shall be set in the locations as dictated by LUS

5. STREET LIGHTING CONDUCTORS

a) Conductors shall be copper, type THHN or better, rated for 600 Volts, stranded and sized as indicated in the plans

b) The neutral conductor's insulation shall be striped to distinguish it from the phase conductors, possibly by means of white permanent marking tape at the termination points

c) Conductors above the fuse holders and/or hand hole in the light poles (load side) shall be #12 THHN copper, stranded and rated for 600 Volts

d) Conductors beyond the fuse holders in the transformer or pedestal shall be as indicated on the plans

e) Conductors shall be installed in continuous lengths, without splices, from terminal to terminal

f) Make connections in the bases with in-line connections

g) Poles shall be bonded to ground with a #10 AWG bare copper wire

6. GROUNDING FOR STREET LIGHTING

a) The Contractor shall furnish and install all materials necessary for grounding all poles and electrical services, in accordance with NEC requirements

b) Provide ground rods as called for in the plans. Grounding connections to the ground rods shall be made with Blackburn type G5 clamp, or approved equal

c) Grounding connections made to bolts in the poles shall be a Buchanan type L lug, or approved equal

d) Streetlight fixtures shall be grounded with the fourth wire (green) from the pedestal or transformer ground

e) The electrical system shall contain a grounding conductor (#8 THHN copper, stranded, green colored insulation), which shall be continuous throughout and shall interconnect all metal poles to the services and to each other

7. TESTING

a) Testing for street lighting cable shall follow standards as set forth in Section (19) (A)

8. LUMINAIRES

a) All streetlights shall have individual photocells and each shall be fused in the base of the pole or in the pedestal or transformer, wherever the source is acquired

b) The Contractor agrees to replace any lamps having burned out or repair any luminaires having failed within one year of system final acceptance date.

c) The Contractor shall furnish with his bid the complete warranty applicable to the streetlights

9. **LIGHT STANDARDS**
   a) Installation of Standard Fiberglass Street Lights shall be per LUS Standard SLP-21F unless otherwise stated per drawings
   b) Installation of (Single Luminaire) Standard Fiberglass Decorative Street Lights shall be per LUS Standard SLD-15F unless otherwise stated per drawings
   c) Installation of (Double Luminaire) Standard Fiberglass Decorative Street Lights shall be per LUS Standard SLD-15FD unless otherwise stated per drawings

23. ELECTRICAL SWITCHING

All Switching of Underground Electrical Systems shall be performed by LUS Operations personnel only. Contractors requiring Switching of Underground Electrical Systems shall notify LUS Operations 48 hours in advance of when switching operations are to be initiated

24. APPENDIX A

Material Specification Sheet

Project: _____

Date: _____

Primary Cable

(Include manufacturers specification sheet for all cable used)

Manufacturer: _____

Stock Number: _____

Cable Size: _____

Manufacturer: _____

Stock Number: _____

Cable Size: _____

Secondary Cable

(Include manufacturers specification sheet for all cable used)

Manufacturer: _____

Stock Number: _____

Cable Size: _____

Manufacturer: _____

Stock Number: _____

Cable Size: _____

Transformer Secondary Connectors

(Include manufacturers specification sheet w/torque requirements for all connectors used)

Manufacturer: _____

Stock Number: _____

Cable Size: _____

Torque Specifications: **Yes** **No**

Manufacturer: _____

Stock Number: _____

Cable Size: _____

Torque Specifications: **Yes** **No**

Pedestal Secondary Connectors

(Include manufacturers specification sheet w/torque requirements for all connectors used)

Manufacturer: _____

Stock Number: _____

Cable Size: _____

Torque Specifications: **Yes** **No**

Manufacturer: _____

Stock Number: _____

Cable Size: _____

Torque Specifications: **Yes** **No**

200A Terminators (Elbow)

Manufacturer: _____

Stock Number: _____

Manufacturer: _____

Stock Number: _____

200A Cold Shrink Terminator

Manufacturer: _____

Stock Number: _____

Manufacturer: _____

Stock Number: _____

25. APPENDIX B

Subcontractor Information:

FIRM:_____

INDIVIDUAL:_____ **TITLE:**_____

ADDRESS:_____

TELEPHONE NO._____

CONTRACTOR'S LICENSE NO._____

Directional Drilling Unit Information:

MANUFACTURER:_____

MODEL #:_____

OWNER OF UNIT:_____