Quick Reference Guide
For Installation Of Single Phase Residential Conduit Systems

- Approved Material List
- Approved Contact List
- Field Inspection Schedule
- Lakeland Electric Requirements
- Conduit Contractor Requirements
- Conduit Contractor Responsibilities
- Detailed Notes, Standards, And Illustrated Examples Of proper Conduit Installation
Introduction

Lakeland Electric has prepared this Quick Reference Guide for the Conduit Contractor, with occasional references made to the Developer and/or Engineering Firm. The purpose of this guide is to answer frequent asked questions regarding single-phase subdivision conduit installations.

Lakeland Electric will do periodic inspections, but does not remove the ultimate proper conduit installation responsibility from the Developer or the Conduit Contractor. Lakeland Electric will meet with the Conduit Contractor at the beginning of the installation to approve the on-site materials (prior to installation), to review this guide, review the electric design/contractor’s conduit print, and answer any other questions. The Conduit Contractor should refer to this booklet prior to calling the assigned project Engineering Technician. If the answer is not in this guide, please call the assigned Engineering Technician. It will be the Engineering Technician’s responsibility to document the question, for the next guide revision.

This information or other policies, practices, or procedures are subject to change without notice. Check with your assigned Engineering Technician to obtain the latest Conduit Installation Quick Reference Guide revision.
Specifications For Single Phase Residential Conduit Installation

- The customer/conduit installer shall furnish all labor, equipment, and approved materials, performing all necessary operations in connection with the installation of the complete conduit system for the installation of primary and secondary power from the Lakeland Electric approved point of origin to the development.

- The Conduit Contractor will notify the Lakeland Electric Engineering Technician a minimum of 48 hours when there is to be a materials inspection, and 48 hours before the actual install of conduit will begin.

- Work shall be in accordance with conduit installation specifications per Lakeland Electric Design and approved materials list with Lakeland Electric New Development Engineering Technician field check(s) during the installation process, either specific or implied.

- The install is to include any and all land restoration necessary to obtain final grade condition. For example, transformer locations will be level and soil compacted under all transformer locations.

- General Notes and Issues:
  - Gray / Schedule 40 PVC / Rigid / 20 ft lengths / With Belled Ends / Conduit sizes
    - 2” for all single phase primary power locations
    - 2.5” for all secondary locations
    - 1” for all lighting locations
  - Elbow sweeps – 24” radius / 2’11” height.
  - Conduit depth – 36” – 40”
  - Red Warning Tape – 18” measured from top of pipe to tape, resting on top of clean backfilled dirt.
  - Pull string blown through all conduit with the exception of the service conductor conduit stub ups at the service locations.
Total length of conduit install (in ground) before a Lakeland Electric approved 2’x 3’x’3’6” pullbox for single phase primary and 4’x 4’ x 4’ for two or three phases of primary necessary shall be determined during the design phase and be communicated at the pre-construction meeting to address any concerns regarding the distance factor.

Only two elbows allowed in a conduit run from point A to point B. Examples would be from the base of the pole location (Point of Delivery) and one at the stub up for the padmount transformer location (Desired Point of Termination), from padmount transformer location to next padmount transformer location, padmount transformer location to secondary pedestal location, padmount transformer location to service stub up location, secondary pedestal location to next secondary pedestal location, secondary pedestal location to service stub up location, or no stub up if going directly to a pull box from any previous location.
ENERGY DELIVERY
NEW DEVELOPMENT ENGINEERING

SPECIFICATIONS for CONDUIT SYSTEM INSTALLATION

1) **Scope** - The Developer shall furnish labor, equipment, and materials and perform other operations in connection with the installation of a complete electric distribution conduit system, ready for use. Work shall be in accordance with these specifications, the applicable plans, and all other terms and conditions of this policy, either specific or implied. The work is to include all land restoration necessary to obtain final grade condition.

2) Conduit sizes shall be as follows, unless otherwise noted on plans by LE:

   PRIMARY (Three-Phase)  2.0 inch & larger
   PRIMARY (Single-Phase)  2.0 inch
   SECONDARY              2.5 inch
   STREET LIGHTING         1.0 inch
   SERVICE STUB-OUTS      2.5 inch
   SERVICE LINES (Single-Phase)  2.5 inch
   SERVICE LINES (Three-Phase) To be sized by the owner's electrician or engineer.

3) Elbow sweeps shall have the following radiiuses and riser heights.

   2.5" Service  24" Radius  2'11" Heights
   2.5" Secondary 24" Radius  2'11" Heights
   2.0" Primary   24" Radius  2'11" Heights
   3.0" Primary   36" Radius  3'11" Heights
   4.0" Primary   36" Radius  3'11" Heights

4) All conduit shall be installed at the following depths, measured from finished grade to top of conduit.

   PRIMARY            36 - 40 inches
   SECONDARY          36 - 40 inches
   STREET LIGHTING    24 - 26 inches
   SERVICE STUB-OUTS  24 - 26 inches
   SERVICE LINES      24 - 26 inches
5) All conduit in City, County, or State Rights-of-Way or Ingress-Egress Public Access Utility Easements shall be a minimum of 36" below final grade, measured from top of sub-base/final grade to top of conduit.

6) A minimum of **five (5) foot horizontal separation** shall be maintained between electric conduits and other utilities or entities in parallel installations.

7) A minimum of **one (1) foot vertical separation** shall be maintained between electric conduits and other utilities or entities when crossing perpendicular.

8) A minimum of **five (5) foot separations** shall be maintained between the above grade electric utility facilities and driveways (paved or non-paved).

9) A minimum of **five (5) foot separation** shall be maintained between electric utility facilities and trees (outside diameter of tree trunk.) No trees shall be planted in the easement.

10) When the minimum horizontal or vertical separation/clearance from other utilities or entities cannot be met, contact LE as soon as possible.

11) **NO** other utility pipe, conduit, wire, etc., shall be installed directly below any LE pad mounted equipment.

12) Trench construction and backfill procedure under present and future pavement areas including roads shall be in conformance with Article 125-8.3 of the Florida Department of Transportation Specifications for Road and Bridge Construction.

13) Density tests are not a requirement unless LE deems it necessary if, in its opinion, a reasonable effort to obtain suitable compactions is not being made, or is required by another authorized agency.

14) Trenches shall be back-filled in such a manner that the conduit remains in a straight line within the trench.

15) Backfill shall be clean material free from foreign material such as rocks, bricks, concrete, roots, bottles, cans, clumps of clay or phosphate, etc. It shall be tamped in twelve inch (12") increments to insure that settling will not occur in the trench.

16) When installing PVC conduit, cleaner and cement shall be applied to each end before connection.

17) Conduits shall have the edges chamfered by a blade to eliminate sharp edges. The open ends of all conduits shall be taped with duct tape except the customer’s service side stub-ups or subdivision phase stub-ups to prevent the entrance of all foreign matter. The ends of all customer’s service stub-ups shall be covered with a glued Schedule Twenty (20) PVC cap on each end. End of subdivision phase stub-ups shall be covered with a glued Schedule 20 PVC cap.

18) PVC conduit shall be installed straight and without sweeps unless specified or approved by LE.

19) ALL Conduits installed parallel in the same ditch shall have a 3" minimum separation measured from conduit outside diameter to conduit outside diameter.

20) All conduits shall be terminated in accordance with LE policy.
21) Placement of conduit terminations for future facilities (i.e. transformers, pedestals, pullboxes, manholes, switches, etc.) shall be in accordance with plans provided by LE.

22) Pullboxes shall be installed four (4") inches above final grade when installed except in driveways and parking lots.

23) Pullbox stub-outs shall have mitered belled flared ends. Pullbox knockouts shall be mitered.

24) Printed underground warning tape shall be installed directly over the pipe during the back-filling operation, continuously throughout all trenches containing electric line conduits, at the following depths, measured from top of pipe to tape:

<table>
<thead>
<tr>
<th>Type</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY</td>
<td>18 inches</td>
</tr>
<tr>
<td>SECONDARY</td>
<td>18 inches</td>
</tr>
<tr>
<td>STREET LIGHTING</td>
<td>12 inches</td>
</tr>
<tr>
<td>SERVICE STUB-OUTS</td>
<td>N/A</td>
</tr>
<tr>
<td>SERVICE LINES</td>
<td>12 inches</td>
</tr>
</tbody>
</table>

25) Twenty feet (20’) of aluminum conduit in ten foot (10’) lengths of the size specified by LE shall be provided at termination poles for risers for each individual conduit run. One ten foot (10’) length shall be installed from the conduit run sweep, up the pole. The second ten foot (10’) length shall be provided to LE for installation.

26) Underground Prelubricated Cable Pulling/Conduit Measuring Flat Woven Polyester Tape with sequential foot markings, 1250 lb minimum tensile strength shall be blown into conduit, except service stub-ups, and tied to the conduit at each end. The conduit shall then be taped over the opening with duct tape.

27) Tracer wire will be required at the discretion of LE.
MATERIALS for UNDERGROUND INSTALLATION

1) Conduit manufactured by approved suppliers and approved by LE Materials Standard Committee may be used.
2) Conduit shall be polyvinyl chloride (PVC), galvanized steel or aluminum as specified hereunder.
3) PVC conduits shall be gray Schedule Forty (40), heavy wall rigid, in twenty (20) foot lengths with factory belled couplings.
   a) EXCEPT 2.5" Schedule Forty (40) for service runs directly into the meter may be in ten (10) foot lengths.
   b) EXCEPT 1.0" Schedule Forty (40) for COL Lighting may be in ten (10) foot lengths.
4) Adapters (from PVC to metal) shall be PVC.
5) Primary ninety degree (90°) sweeps shall be galvanized, shall have a 24" radius and 2'11" riser, and must be factory made.
6) Secondary ninety degree (90°) sweeps shall be PVC, shall have a 24" radius and 2'11" riser, and must be factory made.
7) Services (including stub-outs) ninety degree (90°) sweeps may be PVC, shall have a 24" radius and 2'11" riser, and must be factory made.
8) All service stub-ups shall be glued with a Schedule Twenty (20) PVC cap on customer end--LE end taped with duct tape.
9) Risers shall be aluminum in ten foot (10') lengths with one (1) aluminum coupling attached. Two sticks shall be furnished by the Developer/contractor for every run of pipe installed up the pole.
10) Factory flared bell ends stubbed into pullboxes and mitered.
11) Underground Prelubricated Cable Pulling/Conduit Measuring Flat Woven Polyester Tape with sequential foot markings, 1250 lb minimum tensile strength shall be blown into conduit, except service stub-ups, and tied to the conduit at each end. The conduit shall then be taped over the opening with duct tape.
12) Printed underground warning tape shall have the wording "CAUTION BURIED ELECTRIC LINE" continuously in black lettering on a red background. Tape shall be three (3”) or six inches (6”) in width and 4 mil polyethylene.
13) Tracer wire shall be 14 AWG solid copper with 600volt rated jacket.
CONDUIT/ MATERIALS

Hughes Electric Supply
335 N Ingraham Ave.
Lakeland, Fl
863 / 688 – 5511

Raybro Electric Supply
520 N Ingraham Ave.
Lakeland, Fl
863 / 688 – 7951

Graybar Electric Supply
2100 Crystal Grove Dr
Lakeland, Fl
863 / 665 – 6822

Aldan Electric Supply
630 Gary Rd N
Lakeland, Fl
863 / 683 – 8707

City Electric Supply
1131 E Lime St
Lakeland, Fl
616 – 9302

PULLBOX INFORMATION

Old Castle Pre-Cast Inc.
690 W Taft-Vineland Rd
Orlando, Fl / 32824
407 / 855 – 7580
407 / 851 – 4829 (fax)
<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>APPROVED MANUFACTURER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female PVC Adapter</td>
<td>Carlon/Cantex/Allied-Ga Pipe / LCP / Queen City Plastics</td>
</tr>
<tr>
<td>Male PVC Adapter</td>
<td>CentaurLap/SedcoPipe/Heritage</td>
</tr>
<tr>
<td>PVC Coupling</td>
<td>Open Market</td>
</tr>
<tr>
<td>PVC Caps–Schedule 20</td>
<td>Open Market</td>
</tr>
<tr>
<td>End Flared Bell W/Socket</td>
<td>Allen System / Electromark Reef Industry Shield Tec</td>
</tr>
<tr>
<td>PVC Conduit</td>
<td>Reef Industry Shield Tec /</td>
</tr>
<tr>
<td>PVC Elbows</td>
<td>Terra Tape / Panduit / Magnatec</td>
</tr>
<tr>
<td>Galvanized Elbows</td>
<td>Amco-WP 12 3000 / Neptco-WP 1250P</td>
</tr>
<tr>
<td>Aluminum Conduit</td>
<td>Open Market</td>
</tr>
<tr>
<td>UG Warning Tape</td>
<td>Open Market</td>
</tr>
<tr>
<td>3” - 4” Width, Black</td>
<td>Allen System / Electromark Reef Industry Shield Tec</td>
</tr>
<tr>
<td>Lettering On Red Tape</td>
<td>Reef Industry Shield Tec /</td>
</tr>
<tr>
<td>Tape U/G Cable Pulling/Conduit Measuring1250 lb Min Tensile Strength on 3000foot reels/flat woven polyester with sequential ft markings/prelubricated</td>
<td>Terra Tape / Panduit / Magnatec</td>
</tr>
<tr>
<td>Tracer Wire #14AWG Solid Copper 600 volt rated</td>
<td>Open Market</td>
</tr>
<tr>
<td>Conduit Spacers</td>
<td>Carlon</td>
</tr>
<tr>
<td>200 Amp Walsdorf Enclosure Pit</td>
<td>OldCastle Pre-Cast</td>
</tr>
<tr>
<td>2’ X 3’ X 3’6” Pullbox</td>
<td>Old Castle Pre-Cast / Part # 3902136</td>
</tr>
<tr>
<td>4’ X 4’ X 4’ Pullbox</td>
<td>OldCastle Pre-Cast / Part # 3955143</td>
</tr>
<tr>
<td></td>
<td>Mack Concrete / Part # LE-4X4 PB</td>
</tr>
<tr>
<td></td>
<td>Leesburg Concrete / CC-Pullbox 48X48x48 W/Lid</td>
</tr>
<tr>
<td></td>
<td>Lindsay / Part # 484LP PB Lakeland</td>
</tr>
<tr>
<td>4’ X 6’6” X 4’6” Pullbox</td>
<td>OldCastle Pre-Cast / Part # 3963322</td>
</tr>
<tr>
<td></td>
<td>Mack Concrete / Part # LE 4X6 PB</td>
</tr>
<tr>
<td>75-500 KVA Concrete Pad</td>
<td>Quickset / Dekalb Concrete / Old Castle Pre-Cast</td>
</tr>
<tr>
<td>750-1000 KVA Concrete Pad</td>
<td>Quickset / Dekalb Concrete / Old Castle Pre-Cast</td>
</tr>
<tr>
<td>1500-2000 KVA Concrete Pad</td>
<td>Quickset / Dekalb Concrete / Old Castle Pre-Cast</td>
</tr>
</tbody>
</table>

*Revised 10/13/2015 Psobe*
Typical Easement Cross Section

1. All conduits shall be installed to a minimum of 36.0" below final grade when inside any right-of-way or ingress-egress public access utility easement.

2. Primary and secondary conduits shall be installed at 36.0"-40.0" below final grade when outside the right-of-way.

3. Service conduits shall be installed 24.0" below final grade when outside the right-of-way.

4. Multiple conduits shall be installed to maintain minimum 3.0" separation between outside conduit diameter.

5. Maintain a minimum 5.0" horizontal clearance when installing electric conduit parallel to any other underground utility.

6. Maintain a minimum 1.0" vertical clearance when installing electric conduit perpendicular to any other underground utility.

7. Additional utilities placed in the easement will require a wider easement and will need to be timely coordinated with Lakeland Electric.

8. All Lakeland Electric equipment shall be placed within the described easement area.

9. No trees or sidewalk allowed in easement.

10. Street light placement varies with type of light and right-of-way width.

11. Contact the assigned Lakeland Electric project manager with any questions.

LAKELAND ELECTRIC
CITY OF LAKELAND
ELECTRIC UTILITIES DEPARTMENT

DRN. BY: P. SEBENA  09/29/05
REV. BY:  NO: M
APPR. BY: C. LAWRENCE  09/29/05

NEW DEVELOPMENT ENGINEERING
Single-Phase Transformer Pad Details
Lakeland Electric Supplied

Note: Transformer Service Cable Capacity Is Limited To A MAXIMUM Of 6 Runs (i.e. 18 Total Conductors) Of No More Than 500 MCM Diameter
This Illustration Displays 4 Runs Of Secondary And 2 Runs Of Service Conduit
Which Displays The Size Of The New Transformer Pad/Window Area

Level Transformer Locations And Compact Soil Under Transformer Locations By Mechanical Means To A Firm And Level Condition

All PVC at transformer locations shall be 18” above leveled final grade, taped off, with string blown through, except for service conduit.
Single-Phase Transformer Cabinet Details

Primary Conductor Side
Primary Side Of Transformer

Primary Conduit / 2.0 Schedule 40 PVC
From Transformer Location To Either Next Transformer Location(s) or Riser Pole Location Or Pull Box Location

Secondary Conductor Side
Secondary Side Of Transformer

Secondary Conduit / 2.5 Schedule 40 PVC
From Transformer Location To Pedestal Locations

Service Conduit / 2.5 Schedule 40 PVC
From Transformer Location To Service Stub Up Location(s) / Minimum 5.0 From Transformer Location

Front View Of Transformer Cabinet

6" Separation Between 2.0 and 2.5 Schedule 40 PVC Conduit

From Transformer Location To Service Stub Up Location(s) / Minimum 5.0 From Transformer Location
Single Phase / Single Transformer Pad Location On Lot Corner / Secondary And Service Conduit

Transformer Location / Roadside View / Front View Of Transformer Location

Level Transformer Location And Compact Soil Under Transformer Pad By Mechanical Means To A Firm And Level Condition

2.5 Conduit / Minimum 6 From Transformer Location / No String Blown Through / White Caps On Top Of Conduit / Stubbed Up Minimum 24 Above Final Grade / Run Installed To Transformer Location 24 Below Final Grade

6’ Minimum Distance From Transformer Location

6” Separation Between Primary And Secondary Conduit

2.0 Conduit Primary Side Of Transformer (Left Side) String Blown Through Taped Off At Top 18 Above Final Grade 36 Below Final Grade

2.5 Conduit Secondary Side Of Transformer (Right Side) String Blown Through Secondary Conduit And Taped Off At Top / Service Conduit Placed In Front Of Secondary Conduit / No String Blown Through / Taped Off At Top 18 Above Final Grade 36 Below Final Grade
120/240 Single Phase Transformer Pad Details

NOTES:
1. TOP OF PAD SHALL BE INSTALLED 2 INCHES ABOVE FINISHED GRADE.
2. SOIL UNDER THE PAD SHALL BE COMPACTED BY MECHANICAL MEANS TO A FIRM AND LEVEL CONDITION.
3. PRIMARY AND SECONDARY CONDUITS SHALL BE STUBBED UP 18 INCHES ABOVE GRADE.
4. OPENING IS CENTERED IN PAD SO THAT DIMENSION X IS EQUAL ON BOTH SIDES.
5. SERVICE CONDUITS SHALL BE LOCATED IN FRONT OF THE SECONDARY CONDUITS.
6. SEE E20TXPD001 FOR PAD DETAILS.
120/240 Three Phase Lift Station Detail
Two LE Supplied Transformers and Pads
Open Delta Configuration

Lift Station Area Detail Of Installed Conduit / Roadside View
Level Transformer Locations And Compact Soil Under Transformer Locations By Mechanical Means To A Firm And Level Condition

2.0 Sch 40 PVC Conduit
To Next Transformer Location In Development

2.0 Sch 40 PVC Conduit / Separate Installed Conduit / From Riser Pole, Switchbox, Pull Box Or Walsdorf Transformer Location

2.0 Sch 40 PVC Conduit From Previous Transformer Location

48” Distance

15 Distance Between Left Side 2.0 Conduit and 2.5 Conduit in 1st Transformer

46” Distance

2.5 Sch 40 PVC Conduit Secondary Side Of First Transformer / To Secondary Side Of Second Transformer / 46 Distance

2.5 Sch 40 PVC Conduit Service Conduit / Stubbed Up Minimum 5.0 In Rear Of Second Transformer Location

2.5 Sch 40 PVC Conduit Service Conduit / In Front Of Secondary Conduit / Second Transformer Location

First Transformer Location In Lift Station Area

Second Transformer Location In Lift Station Area

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120/240 Open Delta Lift Station Standards Detail

**NOTES:**

1. **TOP OF PAD SHALL BE INSTALLED 2 INCHES ABOVE FINISHED GRADE.**
2. **SOIL UNDER THE PAD SHALL BE COMPACTED BY MECHANICAL MEANS TO A FIRM AND LEVEL CONDITION.**
3. **PRIMARY AND SECONDARY CONDUITS SHALL BE STUBBED UP 18 INCHES ABOVE GRADE.**
4. **PRIMARY CONDUITS SHALL BE STUBBED UP ON LEFT SIDE AND SECONDARY CONDUITS SHALL BE STUBBED UP ON THE RIGHT SIDE AS YOU FACE THE FRONT OF THE TRANSFORMERS.**
5. **OPENING IS CENTERED IN PAD SO THAT DIMENSION X IS EQUAL ON BOTH SIDES.**
6. **SEE E20TXPD001 FOR PAD DETAILS.**

**CONCRETE FOUNDATION DETAILS**

**UNDERGROUND DISTRIBUTION**

203
Open Delta Lift Station
LE Supplied Transformer Pad Placement

120/240 Three Phase Lift Station Detail
3 Phase Transformer / Details
Customer Supplied Transformer Pad

NOTES:
1. TOP OF PAD SHALL BE INSTALLED 3 INCHES ABOVE FINISHED GRADE.
2. SOIL UNDER THE PAD SHALL BE COMPACTED BY MECHANICAL MEANS TO A FIRM AND LEVEL CONDITION.
3. PRIMARY AND SECONDARY CONDUITS SHALL BE CUT FLUSH WITH THE TOP OF THE PAD.
4. PRIMARY AND SECONDARY CONDUITS SHALL BE GROUPED AND CENTERED IN EACH RESPECTIVE SIDE OF WINDOW.
5. THE CONTRACTOR SHALL PROVIDE 6 FEET OF SECONDARY CONDUCTOR ABOVE THE PAD FOR MAKEUP.
6. SECONDARY CONDUCTORS SHALL NOT BE INSTALLED UNTIL AFTER THE TRANSFORMER HAS BEEN INSTALLED. LAKELAND ELECTRIC WILL NOT BE RESPONSIBLE FOR DAMAGED SECONDARY CONDUCTOR WHEN THIS PROCEDURE IS NOT FOLLOWED.
7. THE CONTRACTOR SHALL PROVIDE AN ALUMINUM OR GALVANIZED CONDUIT Stubbed up 8 INCHES ABOVE TOP OF PAD WITH WATERHEAD FOR METERING. THE CONDUIT DIAMETER SHALL BE 1 INCH PREFERRED OR 1 1/4 INCH ACCEPTABLE. THIS CONDUIT SHALL BE LOCATED IN A 3 INCH X 3 INCH WINDOW IN THE RIGHT REAR CORNER OF THE PAD OPENING.
8. SEE E2OTXP002 FOR PAD DETAILS.
3 Phase Transformer / Pad Details
Customer Supplied Transformer Pad

NOTES:
1. ALL REINFORCING STEEL SHALL BE #5 REBAR AND PlACED IN CENTER OF PAD.
2. PAD SHALL HAVE A 3/4" x 3/4" x 45° CHAMFER AROUND THE TOP EDGE OF PAD.
3. CONCRETE SHALL DEVELOP A MINIMUM OF 3000 POUNDS PER SQUARE INCH AT 28 DAYS.
4. MANUFACTURER'S IDENTIFICATION (BRAND) SHALL BE CAST IN TOP SURFACE OF PAD AS NOTED.
5. SEE E2ITXP0002 FOR INSTALLATION INFORMATION.
Walsdorf Enclosure Pad Details
Contractor Install Option # 1

NOTES:
1. TOP OF PAD SHALL BE INSTALLED 3 INCHES ABOVE FINISHED GRADE.
2. SOIL UNDER THE PAD SHALL BE COMPACTED BY MECHANICAL MEANS TO A FIRM AND LEVEL CONDITION.
3. PIT FLOOR SHALL CONSIST OF A MINIMUM 4 INCH THICKNESS OF CONCRETE OR GRAVEL. THE FLOOR MATERIAL SHALL BE FREE OF ANY LARGE ROCKS OR DEBRIS.
4. CONDUITS SHALL BE CUT 3 INCHES ABOVE TOP OF GRAVEL OR CONCRETE FLOOR.
5. CONDUITS SIZES AND ARRANGEMENT ARE JOB SPECIFIC AND WILL BE PROVIDED BY PROJECT MANAGER.
6. SEE E20DFP001 FOR PIT DETAILS.

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Walsdorf Enclosure Pit
Contractor Install Option # 1
Walsdorf Cabinet and Pad/Pi

Walsdorf Cabinet / Front View
Walsdorf Pit Details

Plan View

Section A

NOTES:
1. CONCRETE SHALL DEVELOP 3000 PSI AT 28 DAYS.
2. REINFORCING BARS SHALL BE GRADE 60 DEFORMED BARS OR WELDED WIRE MESH.
3. PROVIDE 4 CORNER BARS OR WRAP HORIZONTAL BARS AROUND CORNERS.
4. ALL REINFORCING BARS SHALL HAVE A MINIMUM CONCRETE COVER OF 1\(\frac{1}{2}\) INCHES.
5. PAD SHALL HAVE A \(\frac{3}{4}\) INCH CHAMFER ALONG OUTSIDE EDGE.
6. SEE E20DFPD001 FOR INSTALLATION DETAILS.
Secondary Pedestal Cabinet

Lakeland Electric Secondary Pedestal Cabinet

To Service Locations / Service Stub Outs

To Transformer Location Or Next Pedestal Location

Front Of Secondary Pedestal Cabinet
Typical Pedestal Location / Serving 2 Lots

Secondary Pedestal Location / Roadside View
Front View Of Location

Service Conduit Stub Ups / 2.5 Sch 40 PVC / Minimum 18 Above Final Grade Minimum 5 From Secondary Pedestal Location / White Caps On Top Of Service Conduit / No String Blown Through Service Conduit

2.5 Schedule 40 PVC Conduit / Taped Off At Top String Blown Through Secondary Conduit 18 Above Final Grade

5’ Minimum Distance
24” Below Final Grade

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Secondary Pedestal Details

NOTES:
1. ALL SERVICE STUB OUTS SHALL BE 2-1/2" SCHD. 40 GRAY PVC CONDUIT INSTALLED AT A DEPTH OF 24-IN TO 26-IN. SEE EXCEPTION IN NOTE 6 BELOW.
2. SECONDARY AND SERVICE ELBOWS AT PEDESTAL SHALL BE SCHD. 40 GRAY PVC WITH A RADIUS OF 24-IN. ELBOWS AT FIELD END OF STUBOUTS MAY BE STANDARD RADIUS ELBOWS.
3. STUB OUTS SHALL EXTEND A MINIMUM OF 5-FT IN DIRECTION OF FUTURE SERVICE.
4. STUB UPS SHALL EXTEND 18-IN ABOVE FINAL GRADE WITH A SCHEDULE 20 PVC CAP GLUED TO THE OPENING.
5. ALL SECONDARY CONDUIT SHALL BE 2-1/2" SCHD. 40 GRAY PVC INSTALLED AT A DEPTH OF 36-IN TO 40-IN.
6. EXCEPTION: ALL CONDUIT INSTALLED IN CITY, COUNTY, OR STATE RIGHT-OF-WAY OR INGRESS-EGRESS PUBLIC ACCESS UTILITY EASEMENT SHALL BE A MINIMUM OF 36-IN BELOW FINAL GRADE, MEASURED FROM TOP OF GRADE TO TOP OF CONDUIT.

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Pull Box Information

2’ X 3’ X 3’6” Pull Box

- Pull Box Shall be Installed 4” Above Final Grade
- Pull Box Knock Outs Shall Be Mitered
- Pull Box Stub Outs Shall Have Installed And Mitered Bell Flared Ends

1/2” Stainless Steel Penta Head Bolts For Lid Tie Down. Non Corrosive Metal Threaded Inserts For Penta Head Bolts

“Electric” Shall Be Bead Welded On The Cover With 2.0” Letters Prior To Galvanizing

Installed Traffic Bearing 24” X 36” X 42” Lakeland Electric Approved Pull Box
2' X 3' X 3'6" Pull Box Details

NOTES:
1. TOP OF PULL BOX SHALL EXTEND 4 INCHES ABOVE FINAL GRADE WHEN INSTALLED IN GRASS AREAS.
2. THE PULL BOX SHALL BE INSTALLED WITH A 1 INCH KNOLL WHEN INSTALLED IN A PARKING LOT AND FLUSH WITH A DRIVEWAY.

WEIGHT:
BOX = 2412 LBS.
LID = 115 LBS.
TOTAL = 2527 LBS.
2' X 3' X 3'6" Pull Box Details

NOTES:
1. THIN WALL KNOCKOUTS CENTERED HORIZONTALLY ON ALL 4 WALLS SHALL BE PROVIDED AS SHOWN.
2. NUMBER 5 REBAR SPACED AS REQUIRED FOR TRAFFIC BEARING CAPABILITY.
3. CONCRETE SHALL DEVELOP A MINIMUM COMpressive STRENGTH OF 4000-PSI AT 28 DAYS.
4. DESIGN LOADING SHALL INCLUDE DEAD LOAD, LIVE LOAD, IMPACT LOAD, HYDROSTATIC PRESSURE LOAD, AND OTHER LOADS WHICH MAY BE PLACED UPON THE STRUCTURE. LIVE LOADING DESIGN SHALL CONFORM TO AASHO HS-20-44 SPECIFICATIONS, AND SHALL BE THE LOADING WHICH PRODUCES THE MAXIMUM SHEAR AND BENDING MOMENTS IN THE STRUCTURE.
5. "ELECTRIC" SHALL BE BEAD-WELDED ON THE COVER WITH 2" LETTERS PRIOR TO GALVANIZING.
6. THE LID SHALL BE SECURED TO BOX BY 1/2" STAINLESS STEEL PENTA HEAD BOLTS IN 4 LOCATIONS.
7. THREADED INSERTS FOR LID TIE DOWN BOLTS SHALL BE NON-CORROSIVE METAL.
8. BOLT HEAD RECESSIONS IN COVER MUST ACCOMMODATE 1/2" PENTA HEAD BOLT AND STANDARD SOCKET.
9. GALVANIZED COVER SHALL BE FLUSH MOUNTED IN A GALVANIZED FRAME CAST IN THE BOX.
10. PULLING IRONS SHALL BE 1/2" DIAMETER, STRESS-RELIEVED CARBON STEEL CABLE (7 STRAND, WITH AN ULTIMATE TENSILE STRENGTH RATING OF 270,000 PSI) FITTED WITH A RUSTPROOF SLEEVE AT THE HOOK POINT, WITH ALL EXPOSED SURFACES AND PART OF THE EMBEDDED SURFACES ENCAPSULATED IN A POLYESTER JACKET (AS MANUFACTURED BY PENNSYLVANIA INSERTS OR APPROVED EQUAL).
11. SUMP SHALL BE 6" DIAMETER BY 4-5/8"DEEP, AND OFFSET TOWARD ONE END TO AVOID PULLING IRON.
Pull Box Information

4’ X 4’ X 4’ Pull Box

- Pull Box Shall be Installed 4” Above Final Grade
- Pull Box Knock-Outs Shall Be Mitered
- Pull Box Stub-Outs Shall Have Installed And Mitered Bell Flared Ends

“Electric” Shall Be Bead-Welded On The Cover With 2.0” Letters Prior To Galvanizing

Frame and Cover Are To Be Galvanized, Hinged, and Traffic Rated

All 2.0” Schedule 40 PVC Conduit Entering And Leaving Pull Box Shall Run Parallel With The Seam Of The Door

½” Stainless Steel Penta Head Bolts For Lid Tie Down. Non Corrosive Metal Threaded Inserts For Penta Head Bolts

4’ X 4’ X 4” Lakeland Electric Approved Traffic Bearing Concrete Pull Box
4’ X 4’ X 4’ Pull Box Details

NOTE:
1. TOP OF PULL BOX SHALL EXTEND 4 INCHES ABOVE FINAL GRADE WHEN INSTALLED IN GRASS AREAS.
2. IN ASPHALT PARKING LOTS, PULL BOXES SHALL BE INSTALLED WITH A 1 INCH KNOB. PULL BOXES SHALL BE INSTALLED FLUSH WITH GRADE IN STREETS, SIDEWALKS, DRIVEWAYS, AND CONCRETE PARKING LOTS.
4' X 4' X 4' Pull Box Details

NOTES:
1. THIN WALL KNOCKOUTS CENTERED HORIZONTALLY ON ALL 4 WALLS SHALL BE PROVIDED AS SHOWN.
2. NUMBER 5 REBAR SPACED AS REQUIRED FOR TRAFFIC BEARING CAPABILITY.
3. CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4000-PSI AT 28 DAYS.
4. DESIGN LOADING SHALL INCLUDE DEAD LOAD, LIVE LOAD, IMPACT LOAD, HYDROSTATIC PRESSURE LOAD, AND OTHER LOADS WHICH MAY BE PLACED UPON THE STRUCTURE. LIVE LOADING DESIGN SHALL CONFORM TO AASHO HS-20-44 SPECIFICATIONS, AND SHALL BE THE LOADING WHICH PRODUCES THE MAXIMUM SHEAR AND BENDING MOMENTS IN THE STRUCTURE. SEE SPECIFICATION ENG97-06.
5. "ELECTRIC" SHALL BE BEAD-WELDED ON THE COVER WITH 2" LETTERS PRIOR TO GALVANIZING.
6. THREADED INSERTS SHALL BE NON-CORROSiVE METAL.
7. GALVANIZED COVER SHALL BE FLUSH MOUNTED IN A GALVANIZED FRAME CAST IN THE BOX.
8. PULLING IONS SHALL BE 1/2" DIAMETER, STRESS-RELIEVED CARBON STEEL CABLE (7 STRAND, WITH AN ULTIMATE TENSILE STRENGTH RATING OF 270,000 PSI) FITTED WITH A RUSTPROOF SLEEVE AT THE HOOK POINT, WITH ALL EXPOSED SURFACES AND PART OF THE EMBRACED SURFACES ENCAPSULATED IN A POLYESTER JACKET (AS MANUFACTURED BY PENNSYLVANIA INSERTS OR APPROVED EQUIVALENT).
9. SUMP SHALL BE 12" SQUARE BY 4" DEEP, CENTERED IN FLOOR.
**Switch Gear / PME – 9 Deadfront Details**

NOTES:
1. TOP OF PAD SHALL BE INSTALLED 3 INCHES ABOVE FINISHED GRADE.
2. SOIL UNDER THE PAD SHALL BE COMPACTED BY MECHANICAL MEANS TO A FIRM AND LEVEL CONDITION.
3. PRIMARY CONDUITS SHALL BE CUT 16 INCHES BELOW TOP OF PAD.
4. CONDUIT LOCATION DIMENSIONS ARE FROM INSIDE EDGE OF PAD WINDOW. THESE DIMENSIONS ARE CRITICAL AND SHALL BE WITHIN 1/8 INCH TOLERANCE.
5. •• DENOTES SPARE CONDUITS AND MAY BE REQUIRED FOR SPECIFIC JOBS.
6. SEE E2OPD001 FOR PAD DETAILS.
1. CONCRETE SHALL DEVELOP 3000 PSI AT 28 DAYS.
2. REINFORCING BARS SHALL BE GRADE 60 DEFORMED BARS OR WELDED WIRE MESH.
3. PROVIDE *5 CORNER BARS OR WRAP HORIZONTAL BARS AROUND CORNERS.
4. ALL REINFORCING BARS SHALL HAVE A MINIMUM CONCRETE COVER OF 3 INCHES.
5. PAD SHALL HAVE A 3/4 INCH CHAMFER ALONG OUTSIDE EDGE.
6. SEE E21SWPD001 FOR INSTALLATION DETAILS.
Switch Gear / PME – 9 Deadfront Pad Details
3 Conductors in 1 Conduit Install

NOTES:
1. TOP OF PAD SHALL BE INSTALLED 3 INCHES ABOVE FINISHED GRADE.
2. SOIL UNDER THE PAD SHALL BE COMPACTED BY MECHANICAL MEANS TO A FIRM AND LEVEL CONDITION.
3. PRIMARY CONDUITS SHALL BE CUT 16 INCHES BELOW TOP OF PAD.
4. CONDUIT LOCATION DIMENSIONS ARE FROM INSIDE EDGE OF PAD WINDOW. THESE DIMENSIONS ARE CRITICAL AND SHALL BE WITHIN 1/8 INCH TOLERANCE.
5. ( ) DENOTES SPARE CONDUITS AND MAY BE REWIRED FOR SPECIFIC JOBS.
6. SEE E20F00001 FOR PAD DESIGN DETAILS.
NOTES:
1. TOP OF PAD SHALL BE INSTALLED 3 INCHES ABOVE FINISHED GRADE.
2. SOIL UNDER THE PAD SHALL BE COMPACTED BY MECHANICAL MEANS TO A FIRM AND LEVEL CONDITION.
3. PRIMARY CONDUITS SHALL BE CUT 16 INCHES BELOW TOP OF PAD.
4. CONDUIT LOCATION DIMENSIONS ARE FROM INSIDE EDGE OF PAD WINDOW. THESE DIMENSIONS ARE CRITICAL AND SHALL BE WITHIN 1/8 INCH TOLERANCE.
5. (S) DENOTES SPARE CONDUITS AND MAY BE REQUIRED FOR SPECIFIC JOBS.
6. SEE E20FPD002 FOR PAD DESIGN DETAILS.
NOTES:

1. CONCRETE SHALL DEVELOP 3000 PSI AT 28 DAYS.

2. REINFORCING BARS SHALL BE GRADE 60 DEFORMED BARS OR WELDED WIRE MESH.

3. PROVIDE *5 CORNER BARS OR WRAP HORIZONTAL BARS AROUND CORNERS.

4. ALL REINFORCING BARS SHALL HAVE A MINIMUM CONCRETE COVER OF 3 INCHES.

5. PAD SHALL HAVE A 3/4 INCH CHAMFER ALONG OUTSIDE EDGE.

6. SEE E20SWPD002 FOR INSTALLATION DETAILS.
Switch Gear / PME – 9 Deadfront Pad Details
3 Conductors in 1 Conduit Install

NOTES:
1. TOP OF PAD SHALL BE INSTALLED 3 INCHES ABOVE FINISHED GRADE.
2. SOIL UNDER THE PAD SHALL BE COMPACTED BY MECHANICAL MEANS TO A FIRM AND LEVEL CONDITION.
3. PRIMARY CONDUITS SHALL BE CUT 15 INCHES BELOW TOP OF PAD.
4. CONDUIT LOCATION DIMENSIONS ARE FROM INSIDE EDGE OF PAD WINDOW. THESE DIMENSIONS ARE CRITICAL AND SHALL BE WITHIN ½ INCH TOLERANCE.
5. ☞ DENOTES SPARE CONDUITS AND MAY BE REQUIRED FOR SPECIFIC JOBS.
6. SEE E20FP0002 FOR PAD DESIGN DETAILS.

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Switch Gear / PME – 12 Deadfront  Details

NOTES:
1. TOP OF PAD SHALL BE INSTALLED 3 INCHES ABOVE FINISHED GRADE.
2. SOIL UNDER THE PAD SHALL BE COMPACTED BY MECHANICAL MEANS TO A FIRM AND LEVEL CONDITION.
3. PRIMARY CONDUITS SHALL BE CUT 16 INCHES BELOW TOP OF PAD.
4. CONDUIT LOCATION DIMENSIONS ARE FROM INSIDE EDGE OF PAD WINDOW. THESE DIMENSIONS ARE CRITICAL AND SHALL BE WITHIN ¹/₂ INCH TOLERANCE.
5.  ( ) DENOTES SPARE CONDUITS AND MAY BE REQUIRED FOR SPECIFIC JOBS.
6. SEE E20FPD003 FOR PAD DESIGN DETAILS.

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Switch Gear / PME – 12 Deadfront Pad Details

NOTES:

1. CONCRETE SHALL DEVELOP 3000 PSI AT 28 DAYS.
2. REINFORCING BARS SHALL BE GRADE 60 DEFORMED BARS OR WELDED WIRE MESH.
3. PROVIDE 5 CORNER BARS OR WRAP HORIZONTAL BARS AROUND CORNERS.
4. ALL REINFORCING BARS SHALL HAVE A MINIMUM CONCRETE COVER OF 3 INCHES.
5. PAD SHALL HAVE A 3/4 INCH CHAMFER ALONG OUTSIDE EDGE.
6. SEE E20SWPD003 FOR INSTALLATION DETAILS.
Switch Gear / PME – 12 Deadfront Pad Details

3 Conductors in 1 Conduit Install

NOTES:

1. TOP OF PAD SHALL BE INSTALLED 3 INCHES ABOVE FINISHED GRADE.

2. SOIL UNDER THE PAD SHALL BE COMPACTED BY MECHANICAL MEANS TO A FIRM AND LEVEL CONDITION.

3. PRIMARY CONDUITS SHALL BE CUT 16 INCHES BELOW TOP OF PAD.

4. CONDUIT LOCATION DIMENSIONS ARE FROM INSIDE EDGE OF PAD WINDOW. THESE DIMENSIONS ARE CRITICAL AND SHALL BE WITHIN 1/2 INCH TOLERANCE.

5. ☐ DENOTES SPARE CONDUITS AND MAY BE REQUIRED FOR SPECIFIC JOBS.

6. SEE E20F0003 FOR PAD DESIGN DETAILS.

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Secondary Termination Cabinet Details

1. Concrete shall develop 3000 psi at 28 days.
2. Reinforcing bars shall be Grade 60 deformed bars or welded wire mesh.
3. Provide #4 corner bars or wrap horizontal bars around corners.
4. All reinforcing bars shall have a minimum concrete cover of 1 1/2 inches.
5. Pad shall have a 3/4 inch chamfer along outside edge.
6. See E20STCP002 for pad installation details.
Secondary Termination Cabinet Pad Details

NOTES:
1. TOP OF PAD SHALL BE INSTALLED 3 INCHES ABOVE FINISHED GRADE.
2. SOIL UNDER THE PAD SHALL BE COMPACTED BY MECHANICAL MEANS TO A FIRM AND LEVEL CONDITION.
3. PIT FLOOR SHALL CONSIST OF A MINIMUM 4 INCH THICKNESS OF CONCRETE OR GRAVEL. THE FLOOR MATERIAL SHALL BE FREE OF ANY LARGE ROCKS OR DEBRIS.
4. CONDUITS SHALL BE CUT 4 INCHES ABOVE TOP OF GRAVEL OR CONCRETE FLOOR.
5. ORIENTATION OF 4 INCH CONDUIT FOR LE USE SHALL BE RELATIVE TO PIT FRONT.
6. SEE E20STCP001 FOR PAD DESIGN DETAILS.
Primary Riser Pole Information

1st Stick of 10’ x 2” Aluminum Conduit

2nd Stick of 10’ x 2” Aluminum Conduit

Note: If Pole Is NOT Truck Accessible, 1st Stick Of 10’x2” Aluminum Conduit Shall Be Stood Off 7” From The Pole

10’ X 2” Aluminum Conduit / Connected To Galvanized 24” Radius Elbow Sweep / Connected To 2” Schedule 40 PVC / Stood Up Against Pole / Truck Accessible Pole / Duct Taped To Pole Prior To Installation / 2nd Stick of 10’ X 2” Aluminum Conduit Duct Taped To Pole And Placed Next To 1st Stick
Primary Riser Pole Details

NOTES:
1. PVC conduit shall not be exposed above final grade at primary or service underground conduit riser poles.
2. The point at which the riser conduit attaches to the pole shall be determined by Lakeland Electric.
3. The conduit contractor shall provide two 10-foot sticks of aluminum conduit for each primary or service underground conduit riser. One stick shall be installed in place.
4. The minimum installed depth for all primary conduit is 36-inches. The minimum installed depth for all service conduit is 24-inches. All conduit depths are measured from final grade to the top of the conduit.
5. Primary, secondary & service elbows shall be 24-inch radius with a 2'-11" riser height. All primary elbows shall be galvanized. Secondary and service elbows shall be SCH.40 PVC.
6. If the riser pole is not readily accessible by a bucket truck, riser conduit shall be installed 6-inches off the face of the pole.
CT Install Inside Transformer

**INSTALLATION DETAIL OF CT-RATED METERS FOR CT'S INSTALLED INSIDE TRANSFORMER.**

**NOTES:**

1. **FOR SERVICES OF 400 AMPS OR MORE THAT ARE NOT CT'ED INSIDE THE TRANSFORMER, CUSTOMER IS REQUIRED TO INSTALL A CT CABINET, CT'S AND METER SOCKET ISSUED BY LAKELAND ELECTRIC.**

2. **CT METER MAY BE INSTALLED ON A EXTERIOR WALL ONLY IF THE DISTANCE FROM THE TRANSFORMER TO THE PROPOSED POINT OF ATTACHMENT ON WALL DOES NOT EXCEED 25'. IF DISTANCE EXCEEDS 25' TO CLOSEST POINT OF ATTACHMENT, CT METER MUST BE POST MOUNTED.**

3. **CONCRETE POST FOR POST MOUNTED INSTALLATIONS MUST BE 8' LONG BY 6" X 6" STEEL REINFORCED BURIED AT 3' DEPTH. MOUNT METER SOCKET HOUSING ON POST SO THAT TOP EDGE IS FLUSH WITH THE TOP EDGE OF POST.**

4. **INSTALL 1" CONDUIT FROM BASE OF METER SOCKET INTO SECONDARY WINDOW OF PAD AS SHOWN. ALL CONDUIT ABOVE GRADE SHALL BE ALUMINUM. INSIDE PAD WINDOW, STUB CONDUIT UP 12" ABOVE FINAL GRADE AND INSTALL WEATHERHEAD OVER OPENING FOR METER WIRE LEADS.**

5. **INSTALL #4 SOFT-DRAWN SOLID COPPER GROUND WIRE TO GROUNDING LUG IN METER SOCKET. RUN THE GROUND WIRE THROUGH THE BASE OF THE METER SOCKET AND SECURE IT TO THE POST WITH WIRE J-CLIPS. INSTALL TWO ¾" 8' COPPER-CLAD GROUND RODS AT A MINIMUM OF 6' APART. SECURE GROUND WIRE TO EACH ROD USING "ACORN" TYPE CLAMP ONLY.**

6. **NO SERVICE CONDUCTOR MAY BE PULLED INTO CONDUIT UNTIL THE TRANSFORMER IS INSTALLED ON PAD!**

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CT Install Outside Of Transformer (Wall Mount)

**Installation Detail of CT Cabinet and Cabinet Mounted CT’s for CT-rated Meters**

**CT-rated Meter Housing**

- Polarity mark must always be positioned to face the line side. See Note 3.

**Standard CT Cabinet Dimensions**

1. 24"H x 24"W x 1"D
2. 24"H x 32"W x 10"D
3. 32"H x 34"W x 10"D

**Notes:**

1. All services above 400 Amps require CT metering. The customer is responsible for the installation of the cabinet, CT’s and meter socket. These items are issued by Lakeland Electric at no charge. Contact your assigned project technician for more information.

2. Install CT cabinet no less than 12" from bottom of cabinet to final grade and no more than 6" from top of cabinet to final grade.

3. Current transformers shall be installed so that the white polarity mark always faces in the direction of the line side. If secondary voltage includes a "high leg", the CT for the high leg shall be mounted on the far right-hand side. If the CT's are mounted in a vertical configuration (as shown), install the high leg CT on the bottom.

4. Mount Lakeland Electric supplied meter socket at 5/8" from final grade to centerline of meter socket. Nipple out of meter socket with 1" aluminum conduit into CT cabinet. Maintain a minimum of 3" clearance between CT cabinet and meter socket.

5. Mark high leg(s) of applicable with orange tape only and neutral(s) with white tape only. Mark other legs with appropriate tape color. All neutrals must be full-sized.

6. Install #4 solid copper ground wire to grounding lug(s) in meter socket. Run ground wire through base of meter housing. Secure ground wire with wire J-clips and connect to system ground per NEC.

Lakeland Electric requires two 5/8" copper-clad ground rods at a minimum 6' separation. Attach ground wire to each ground rod using "acorn" type clamp only and bond (secure) #4 wire to CT cabinet.

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**Underground Primary Construction**

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Driveway Clearances

1. When installing a driveway, a minimum of five (5) feet of clearance shall be maintained between the above grade facilities and the outside edge of the driveway nearest the facility.

2. Maintain a minimum 1.0 vertical clearance when installing electric conduit perpendicular to any other underground utility.

3. All Lakeland Electric equipment shall be placed within the described easement area.

4. If compliance with any of these conditions cannot be achieved, Lakeland Electric must be notified immediately prior to the installation of the electrical conduit.
Planting Clearances

CLEARANCES FOR PADMOUNT TRANSFORMERS AND SWITCHES

TRANSFORMER

SWITCHGEAR

12 Feet
3 Feet
3 Feet
3 Feet
12 Feet
12 Feet
3 Feet
3 Feet
3 Feet
Lighting Conduit / Conductor Standards

TYPICAL INSTALLATION FOR CONDUCTORS USED IN UG LIGHTING

NOTES:
1. Since street lighting loads are continuously energized for long periods, the connected load should not exceed 80% of the wire rating. The load calculation should be based on the total ampere rating of the ballasts and transformers or fixtures, not on the wattage of the lamps.

2. When running conductor in race way of poles 12-2 should be used unless load exceeds N.E.C. rating of wire.

3. When installing lights in series, 4/0 CU w/12 green for bonding shall be used.

4. All lighting circuits shall be fused at the source for the purpose of protecting the circuit. The fuse holder shall also be used as a visual break disconnect for de-energizing the whole circuit for maintenance.

5. All fixtures shall have their own fuse in order to protect the circuit from possible damage. The fuse holder shall also be used as a visual break disconnect for de-energizing the fixture for maintenance.
Bollards Placement

NOTES:
1. REAR AND SIDE BARRIERS SHALL BE FIXED.
2. FRONT BARRIERS MAY BE FIXED OR REMOVABLE.
3. BARRIER SPACING SHALL BE A MAXIMUM OF 3' CENTER TO CENTER.

NOTES:
1. FILL 4" GALVANIZED IRON PIPE WITH CONCRETE, LEAVE CROWN OF CONCRETE AT TOP.
2. PAINT PIPE TRAFFIC YELLOW.
3. BUILD SLOPED CONCRETE COLLAR AT GRADE TO SHED WATER.
4. FOR REMOVABLE BARRIER, INSTALL 5" GALVANIZED IRON PIPE FOR SLEEVE. INSTALL 3/4" X 8" GALVANIZED MACHINE BOLT THROUGH SLEEVE 18" BELOW GRADE.
5. TAMPER GROUND UNDER BARRIER UNTIL WELL COMPACTED.
Concrete Encased Conduit
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