2024
METER SERVICES SPECIFICATION GUIDE

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INTRODUCTION

This guide provides detailed requirements for electrical equipment installations at the Point of Delivery for all metered services. The goal is to provide customers, electrical contractors, architects, engineers, and electrical inspectors quick access to specific, detailed LES Meter Services department rules and requirements not otherwise contained in the LES Service Regulations.

DISCLAIMERS

- If there are conflicts between this document and LES Service Regulations (https://www.les.com/sites/default/files/service-regulations.pdf), the LES Service Regulations shall take precedence.
- If this guide does not cover questions, contact LES Meter Services at 402-473-3150.
- LES is not responsible for customers' wiring or equipment quality, sufficiency, or safety and disclaims any and all warranties relating to the information contained in this Meter Specification Guide. Customers are encouraged to rely on the expertise of properly trained and certified electricians and engineers in designing their own electrical systems.
- All electrical installations must be inspected and approved by the Authority Having Jurisdiction before LES provides electric service.
- Commercial installations require consultation with LES Design Engineering and Meter Services to determine service and metering requirements. LES reserves the right to refuse to provide connectivity to electrical installations that do not meet the requirements of this guide or the LES Service Regulations or which are not installed in accordance with requirements of the National Electrical Code (NEC), the National Electrical Safety Code (NESC), and any applicable state or local laws and regulations.
- The contents of this document may change based on the best available technology or LES requirements.
- If there are questions pertaining to the meaning or definition of a word used in the text, reference should be made to the National Electrical Safety Code, the NEC and/or LES Service Regulations.
- LES provides electrical distribution services at 60 Hertz alternating current. If there are questions regarding the voltage and the number of phases requiring service or the character, size, or location of the load that is unanswered in this document, consult with LES prior to purchasing equipment or wire installation.
- LES will consider options for Master Metering through an application process under limited circumstances.

LES CONTACTS

LES Distribution Design Department

Lincoln Northwest of 27th and O Street	402-473-3426
Lincoln Northeast of 27th and O Street and Waverly	402-473-3451
Lincoln Southwest of 40th and O Street	402-473-3253
Lincoln Southeast of 40th and O Street	402-473-3162

Meter Services Department 402-473-3150

LES Mailing Address

Lincoln Electric System

Attn: Meter Services Department/LES Distribution Design Department

9445 Rokeby Road

Lincoln, NE 68526-9788

DEFINITIONS

Authority Having Jurisdiction: Defined in the NEC as an organization, office or individual responsible for enforcing the requirements of a code or standard or for approving equipment, materials, an installation, or a procedure.

Meter: The device or devices, including all auxiliary equipment necessary to measure and register an electrical quantity (energy, demand, and reactive power), that LES supplies to a customer at a Point of Delivery between LES and a customer.

Point of Delivery: The location where LES supplies service to a customer and which, unless otherwise agreed upon between LES and the customer, shall be the point where the service wires are joined near the weather head or in the meter socket/cabinet. For flat-rate underground secondary service without a meter (e.g., Security Light), the customer-owned disconnecting means/overcurrent protective device will be the Point of Delivery. Exception: public traffic signal service.

Service Drop:

> *Conductors/Overhead* — Service Wires extending from the last pole or other aerial support, including splices, connecting to the Point of Delivery at the customer's building or other structure. See Figure 11.
>
> *Conductors/Underground* — Service Wires between the pedestal, transformer, riser pole, or other last point of supply and the first point of connection to the service entrance conductors in a terminal box or meter socket.

Service Wires: LES' lines connecting the LES distribution system to a customer's Point of Delivery.

LES METER SERVICES DEPARTMENT REQUIREMENTS FOR APPROVAL OF CONNECTION TO LES

A. GENERAL

1. Always consult with LES before purchasing and installing demand or energy controls.

2. LES can furnish energy and/or time pulses at the customer's cost.
3. Load monitoring equipment can only be installed on the load side of the meter. No customer or third-party equipment can be attached to the meter, associated metering equipment, or inside a meter or current transformer enclosure without the approval of the LES Metering Department.

B. GROUNDING

1. All metallic conduits, metallic tubing, and service entrance equipment shall be grounded in accordance with the NEC.
2. Equipment grounding conductors shall not be installed along with the Service Drop conductors being installed to the secondary compartment of LES' pad-mount transformers.

C. METER LOCATION

1. All meters or metering equipment shall be located on the exterior of a structure.
2. LES will provide the meter specifications for indoor metering if location on the exterior of a structure is not practical. The request for indoor metering must occur with Meter Services early in the structure design phase.
    a. LES must approve the relocation of all metering equipment from its existing location.
3. See Figure 1 and Figure 2.

D. METER IDENTIFICATION FOR MULTI-OCCUPANCY BUILDINGS

1. On multi-occupancy buildings, all meter sockets and main service disconnect switches shall be plainly and permanently marked with numbers and/or letters by the owner to indicate the building address or apartment address served. The markings must be engraved nameplates.
2. Service will not be established until markings are complete. Felt tip pens and label maker tape are not considered permanent markings.
3. LES is not responsible for and will not adjust erroneous customer billing resulting from mislabeled meter sockets or cross-wiring to a service entrance within the building's electrical system.

E. METER SOCKETS

1. All new meter sockets installed in the LES service area shall be rated for a minimum of 200 amps.
    a. Splicing load side conductors in the meter socket is prohibited.
2. This requirement also applies to any rewired service work.
    a. Example – An underground 100-amp service that is being rewired to a new 100-amp service will require the meter socket and expansion joint to meet current standards (must have 200-amp meter socket and have expansion joint installed).
    b. Exception – 100-amp meter sockets will be allowed on gang sockets of (3) or more.
    c. Exception – On Overhead (OH) services 100-amp meter sockets will be allowed on service repairs and service panel upgrades.
3. Meter sockets purchased by the customer shall be UL listed and labeled in accordance with NEC.
4. Transformer rated meter socket requirements:
    a. The sockets listed below are just acceptable examples. Other manufacturers may be used but must be UL listed.
    b. Durham Catalog No. STL8-1C or Milbank Catalog No. UC7444-XL for single-phase installations.
    c. Durham Catalog No. STL13-1C or Milbank Catalog No. UC7445-XL for three-phase installations.
    d. All transformer rated meter sockets must have a single piece socket cover.
5. Commercial self-contained meter sockets:
    a. All single and three-phase meter sockets used in commercial applications shall be equipped with meter bypass levers, this is a "ringless" type socket. “Horn” bypass designs are prohibited.
    b. Bypass meter sockets will not be required for temporary services.
6. Meter centers:
    a. Residential:
        i. Multi-occupancy residential meter centers may be ringless or ring-type.
    b. Commercial:
        i. Meter centers feeding a commercial service must be ringless with a meter lever bypass.
7. Pedestals:
    a. LES will accept permanent installation of single-phase, free standing NEMA 3R pedestals rated 100 or 200 amps. Pedestals must be equipped with a removable bottom cover to allow for lay-in wiring on post line connectors. Line side termination point must accommodate 4/0 AWG. Pedestal shall include steel latch and hasp assembly with padlock provisions. Pedestal shall meet LES and NEC compliance, be UL listed and have a minimum of 22kAIC amps RMS symmetrical short circuit rating

at 600 volts. Working clearance shall be maintained at 36 inches from face of Meter and from any access panel. Minimum Meter height shall be at least 36 inches from ground level.

b. LES will not provide service to pedestals that are attached to a house and/or building. Please use standard self-contained meter sockets and conduit for those applications.

F. METER SEALS

1. All enclosures containing unmetered conductors shall be capable of being effectively sealed and locked by LES.
2. The breaking of seals by anyone other than an authorized person (licensed electrician) or tampering with LES' meters or monitoring/measuring devices is prohibited.
3. When LES detects that its meter or other equipment has been tampered with in a manner that may allow unauthorized use or loss of energy measured at the meter, LES shall discontinue the supply of electric energy to the customer at any time without notice. The meter and other equipment will be removed until the customer has corrected the condition to the satisfaction of LES. (See the LES Service Regulations.)

G. TEMPORARY SERVICES

1. LES will furnish temporary service in accordance with the requirements of the LES Service Regulations.
2. See Figures 3-5.

H. LES SERVICES

1. LES will install Service Wires to the Point of Delivery as specified by LES.
2. Overhead Service Wires will be installed only to a properly secured and anchored overhead mast or properly sized and anchored attachments on a structure.
3. See Figures 6-8.
4. NOTE: LES owns and maintains only one service drop to a residence, whether it is before or after the customer's meter. If there is a service drop serving a residence and other building, such as a barn, garage, or customer-owned poles with lights or well service, LES does not own or maintain any of those service drops.
5. NOTE: Electric poles that are now part of the LES system due to the acquisition of service area from other electric utilities, particularly those located in rural areas and on acreages, must conform to LES Service Drop requirements if any modifications are made to the

configuration of the electric system on the property.

I. RESIDENTIAL SERVICE

1. Residential electric service will be supplied by:
    a. A three-wire, single-phase system, nominally 120/240 volts.
    b. A network three-wire, nominally 120/208 volts where available or needed.
    c. Self-contained metering for single-phase 120/240 volts, for a total of main switches not exceeding 400 amps.
    d. LES permits self-contained metering for four-wire, three-phase 120/208 volts, for a total of main switches not exceeding 400 amps.
    e. LES requires services exceeding a sum of 400 amps on all main switches to be current transformer (CT) metered.
    f. Additional requirements:
        i. Installations with nominal voltage up to 240 volts with anticipated load or demand of less than 400 amps require a self-contained meter and meter socket.
        ii. All NEW single-family residences, rewired underground or overhead services, require a 200-amp ringless or ring-type socket.
        iii. All underground services shall have a UL approved expansion joint supplied with the service supply conduit. Expansion joints shall not be clamped to restrict movement.

J. COMMERCIAL AND INDUSTRIAL ELECTRIC SERVICE

1. Commercial and industrial electric service will be supplied by primary distribution with a three-wire, single-phase system or a four-wire, three-phase system.
2. Additional requirements:
    a. Self-contained metering is allowed for single-phase 120/240 volt, for a total of main switches up to and including 400-amp services.
    b. See Figure 9 and Figure 10.
    c. Installations with anticipated load or demand between 200 amps and 400 amps (sum) may use a Class 320 Meter Socket.
    d. Network metering on commercial and multi-occupancy residential services with 120/208 volt, three-wire service on a single-phase meter socket requires a fifth terminal to be installed horizontally at the 9 o'clock position (looking at the socket).
3. Service at voltages over 240 volts
    a. See LES Service Regulations for service voltage availability.

b. LES does not provide service to new 480 volt, three-phase, three-wire installations.
c. Primary voltage of 7,200/12,470 volt three-phase, four-wire and 34,500 volt three-phase, three-wire are standard system voltages.

4. Three-phase self-contained metering (400 amp maximum, not exceeding 480 volts)
    a. LES permits self-contained metering on three-phase, four-wire, single mains not exceeding 400 amp (sum) for commercial services.
    b. All three-phase services of 480 volts that do not exceed 200 amps (sum) will be metered with a self-contained meter socket. This is a seven-terminal, ringless, lever bypass-equipped meter socket that needs to meet NEC requirements and is UL approved. 480 Volt services will require a cold sequence meter socket.
    c. LES requires services exceeding a sum of 400 amps on all main switches to be current transformer (CT) metered.
    d. LES will not provide secondary service to any three-phase, three-wire service.
5. 480-volt cold sequence meter socket
    a. Only a UL listed single-unit assembly of a meter socket and line-side meter disconnect that is immediately adjacent to the meter socket and equipped with a meter bypass will be allowed for:
        i. 200/400-amp five terminal single-phase, three-wire 240/480 or 277/480 volt.
        ii. 200/400-amp seven terminal three-phase, four-wire sockets for three-phase 277/480-volt services.
        iii. NOTE: A lockable/sealable socket cover and disconnect is required.
    b. 480-voltmeter sockets must be marked with an engraved label stating “480 VOLTS”
6. Current transformer cabinet requirements:
    a. Must have a hinged door/s that can be padlocked.
    b. Meter socket and CT cabinet must be outside of the building.
    c. Metering conduits shall be a minimum of 1” inch and in a continuous rigid (RMC, IMC) conduit with no junction boxes or LB’s.
    d. Minimum size of cabinet is based off amperage:
        i. Single-phase 600 amp and below:
            1. Minimum cabinet size is 30" x 26” x 10”.
        ii. Single-phase above 600 amp, up to and including 1200 amp:
            1. Minimum cabinet size is 36" x 36" x 12".
        iii. Three-phase 800 amp and below:
            1. Minimum cabinet size is 36" x 36" x 12".
        iv. Three-phase above 800 amp, up to and including 1000 amp:
            1. Minimum cabinet size is 48”x 36”x16”.
            2. Hoffman Free Standing Enclosure #A60R3618FSLP is also accepted (1200 amps @ 208 VAC).

v. Three-phase above 1200 amp, up to and including 1800 amp:
    1. Minimum cabinet size is 48" x 48" x 12".
    2. Hoffman Free Standing Enclosure #A60R5218FSLP is also accepted (1200 amp @ 480 VAC).

vi. Three-phase above 2000 amp, up to but NOT including 3000 amp:
    1. Minimum cabinet size is 60" x 52" x 18”.
    2. Hoffman Free Standing Enclosure #A60R5218FSLP is also accepted.

vii. Three-phase 3000 amp and greater:
    1. Minimum cabinet size is 60" x 72" x 24".
    2. Hoffman Free Standing Enclosure #A60R7224FSLP is also accepted.

7. Free-standing switchgear, the following requirements must be met for free-standing switchgear:
    a. LES will allow metering transformers in customer switchgear that is located on the exterior of the building.
    b. Must have hinged door/s that can be padlocked.
    c. Must be approved by LES.
    d. Must have unobstructed access to the compartment and adjacent meter socket.
    e. Metering conduits shall be a minimum of 1inch and in a continuous rigid (RMC, IMC) conduit with no junction boxes or LB’s.
    f. 1000 to 2000A:
        i. A 40” minimum vertical distance from the nearest terminal to the upper or lower-most part of the enclosure.
        ii. A 25” minimum width; and
        iii. A 25” minimum depth of enclosure.
    g. 2500A:
        i. A 40” minimum vertical distance from the nearest terminal to the upper or lower-most part of the enclosure.
        ii. A 36” minimum width; and
        iii. A 36” minimum depth of enclosure.
    h. 3000A to 4000A:
        i. A 40” minimum vertical distance from the nearest terminal to the upper or lower-most part of the enclosure.
        ii. A 48” minimum width; and
        iii. A 48” minimum depth of enclosure.
8. Metering on LES transformer:

a. LES will consider metering in the transformer if LES Distribution Design and Meter Services are made aware during the design stage.
b. This will only be considered if there is a single customer fed off the transformer.

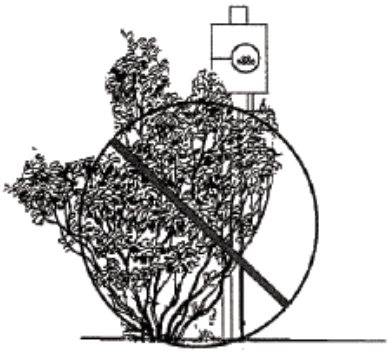
9. Customer Owned Energy Management System:
    a. Upon request, Meter Services will facilitate with a building manager to install a solid-state pulse relay (KYZ) and supply a (kW) pulse for the customers energy management system. This additional service will include a fee of $800. The customer is required to supply a nonmetallic weather-tight (8x10x4) relay box that will nipple into the side of the existing meter socket. If, for whatever reason, the pulse relay fails or needs to be replaced, the customer will be charged for this additional service again if it is still desired.
    b. As technology continues to change, LES does NOT guarantee this service will continue as certain electric meters do not support this technology.

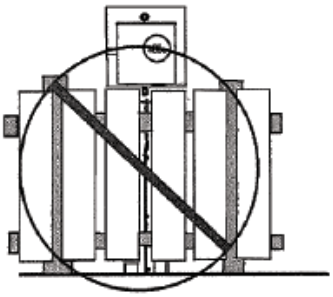
K. LES SERVICE AREA ACQUISITIONS

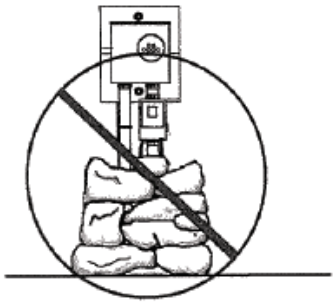
1. Existing services are grandfathered.
2. If any upgrades or modifications are made, these services must be configured to meet all LES requirements contained in this guide and in the LES Service Regulations.
3. Figures 13-20 are included only to illustrate the range of non-compliant Service Drops that may be encountered primarily in rural areas or acreages.

APPENDIX

Meter Services Specification Guide







LES WILL BE RESPONSIBLE FOR:

(a) ASSISTING THE CUSTOMER IN LOCATING THE METER IN A SUITABLE LOCATION.

(b) ACCESSING THE METER FOR MAINTENANCE AND CONTROL PURPOSES.

THE CUSTOMER WILL BE RESPONSIBLE FOR:

(a) COORDINATING WITH LES TO ENSURE A SUITABLE LOCATION FOR THE METER.

(b) PROVIDING UNOBSTRUCTED ACCESS TO ALL LES EQUIPMENT.

(c) PROVIDING LES WITH UNRESTRICTED ACCESS TO BUILDINGS THAT HAVE METERS MOUNTED INTERNALLY.

(d) IF ACCESS CANNOT BE PROVIDED TO LES, TRANSFERRING METERS TO THE EXTERIOR OF THE BUILDING AT CUSTOMER'S EXPENSE.

* SEE LES SERVICE REGULATIONS FOR DISCONNECTING SERVICE METER THAT IS OBSTRUCTED OR INACCESSIBLE.

Lincoln Electric System	UNOBSTRUCTED METER ACCESS	DATE: 3 May 2016
		FIGURE: 01

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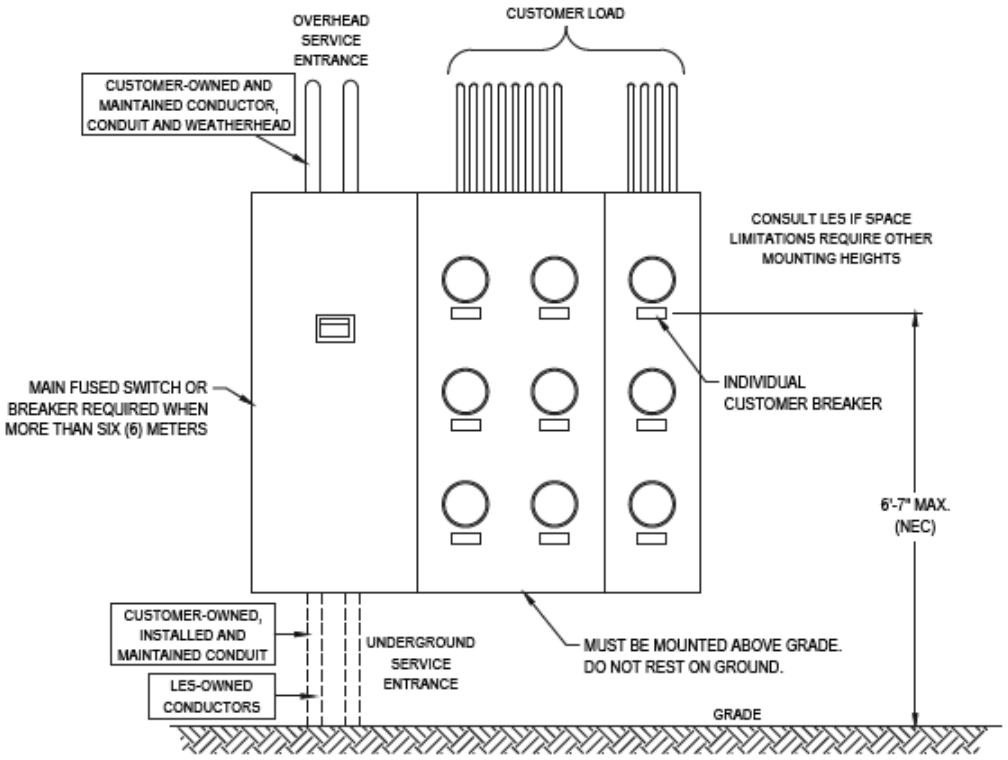

(1) CUSTOMER MUST CONSULT WITH LES FOR POINT OF DELIVERY PRIOR TO INSTALLATION.

(2) CUSTOMER WORK MUST BE COMPLETED AND INSPECTED BEFORE LES WILL PROVIDE SERVICE.

(3) CUSTOMER SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, AND CONNECTING ALL SERVICE ENTRANCE WIRING FROM TERMINAL BOX OR MAIN DISCONNECT TO METER SOCKETS AND FOR ENSURING THAT TERMINAL BOX OR MAIN DISCONNECT HAS PROPER NUMBER, SIZE, AND TYPE OF TERMINALS TO ACCEPT LES SERVICE LATERAL.

(4) WIRE WAYS OR MAIN DISCONNECTS FOR UN-METERED CONDUCTORS SHALL HAVE PROVISIONS FOR BEING EFFECTIVELY SEALED OR LOCKED BY LES PERSONNEL.

LINE AND LOAD CONDUCTORS SHALL NOT PASS THROUGH OR BE MIXED IN THE SAME WIRE-WAY, TROUGH OR MAIN-LINE DISCONNECT.

* SEE LES SERVICE REGULATIONS FOR LABELING MULTIPLE METERS.

Lincoln Electric System	PREASSEMBLED MULTIPLE METER INSTALLATION	DATE: 21 May 2019
		FIGURE: 02

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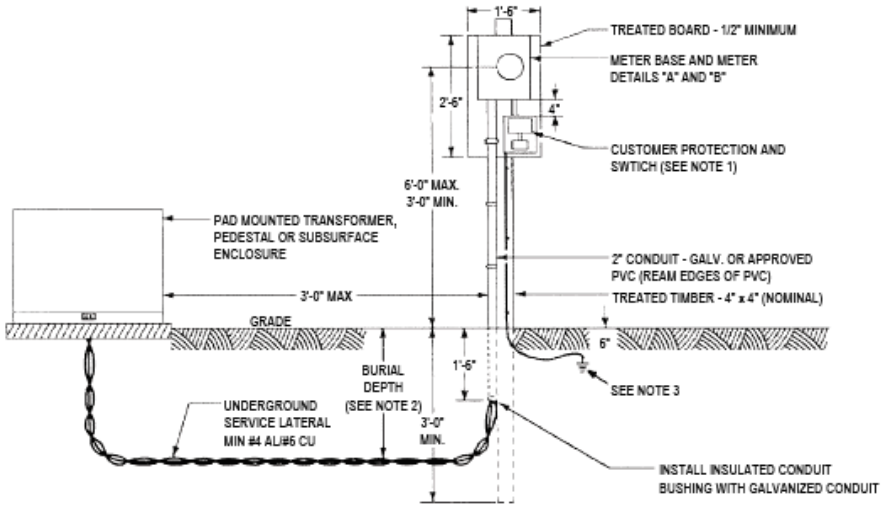


GENERAL CONDITION NOTES:

LES WILL BE RESPONSIBLE FOR:

(a) COMPLETING THE TRENCHING TO EITHER THE TRANSFORMER OR THE SECONDARY PEDESTAL AND MAKING THE CONNECTIONS TO THE UNDERGROUND SERVICE LATERAL TO EITHER THE TRANSFORMER OR SECONDARY PEDESTAL.

(b) INSTALLING AND REMOVING THE METER.

(c) DISCONNECTING THE CONNECTIONS IN THE TRANSFORMER OR SECONDARY PEDESTAL AND REMOVING THE METER.

THE CUSTOMER WILL BE RESPONSIBLE FOR:

(a) PROVIDING AND INSTALLING THE TEMPORARY STRUCTURE, PROTECTION AND SWITCH, CONDUIT, UNDERGROUND SERVICE LATERAL AND CABLE TERMINAL LUGS (IF NEEDED), GROUND ROD, GROUND CLAMP, AND GROUND WIRE.

(b) TRENCHING THE DESIGNATED DISTANCE BETWEEN THE TEMPORARY POST AND LES' TRANSFORMER OR PEDESTAL. CUSTOMER TO DETERMINE LOCATION OF ALL UTILITIES BEFORE TRENCHING.

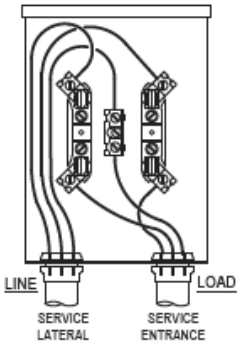
(c) PROVIDING WEATHERPROOF (OR COVERED) SERVICE ENTRANCE EQUIPMENT (UL LISTED WITH FUSED DISCONNECT SWITCH OR CIRCUIT BREAKER - 3 WIRES). EQUIPMENT SHALL BE SIZED AS REQUIRED AND MOUNTED ON A BOARD BASE.

(d) SECURELY MOUNTING THE METER BASE IN A PLUMB POSITION.

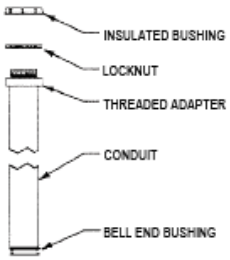
(e) MAKING ALL CONNECTIONS IN THE METER SOCKET.

(f) PROVIDING THE INSPECTION IF NECESSARY.

(g) REMOVING EQUIPMENT AFTER BEING DISCONNECTED.



DETAIL "A"
METER BASE



DETAIL "B"
RISER ASSEMBLY

GENERAL CONSTRUCTION NOTES:

(1) CUSTOMER PROTECTION AND SWITCH MAY REQUIRE CURRENT LIMITING FUSES TO COMPLY WITH LOCAL CODES.

(2) BURIAL DEPTH IS THE DISTANCE BETWEEN FINAL GRADE AND THE TOP OF THE BURIED CABLE OR CONDUIT. LES SHALL SPECIFY THE REQUIRED BURIAL DEPTH TO CONFORM TO LOCAL REQUIREMENTS. THE BURIAL DEPTH SHALL NOT BE LESS THAN 2'-6".

(3) CUSTOMER GROUNDING WILL BE IN ACCORDANCE WITH NEC. THE GROUND WIRE SHALL BE CONNECTED TO THE METER SOCKET.

Lincoln Electric System	TEMPORARY SERVICE INSTALLATION FROM EXISTING URD SECONDARY	DATE: 3 May 2016
		FIGURE: 03

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Meter Services Specification Guide

GENERAL CONSTRUCTION NOTES:

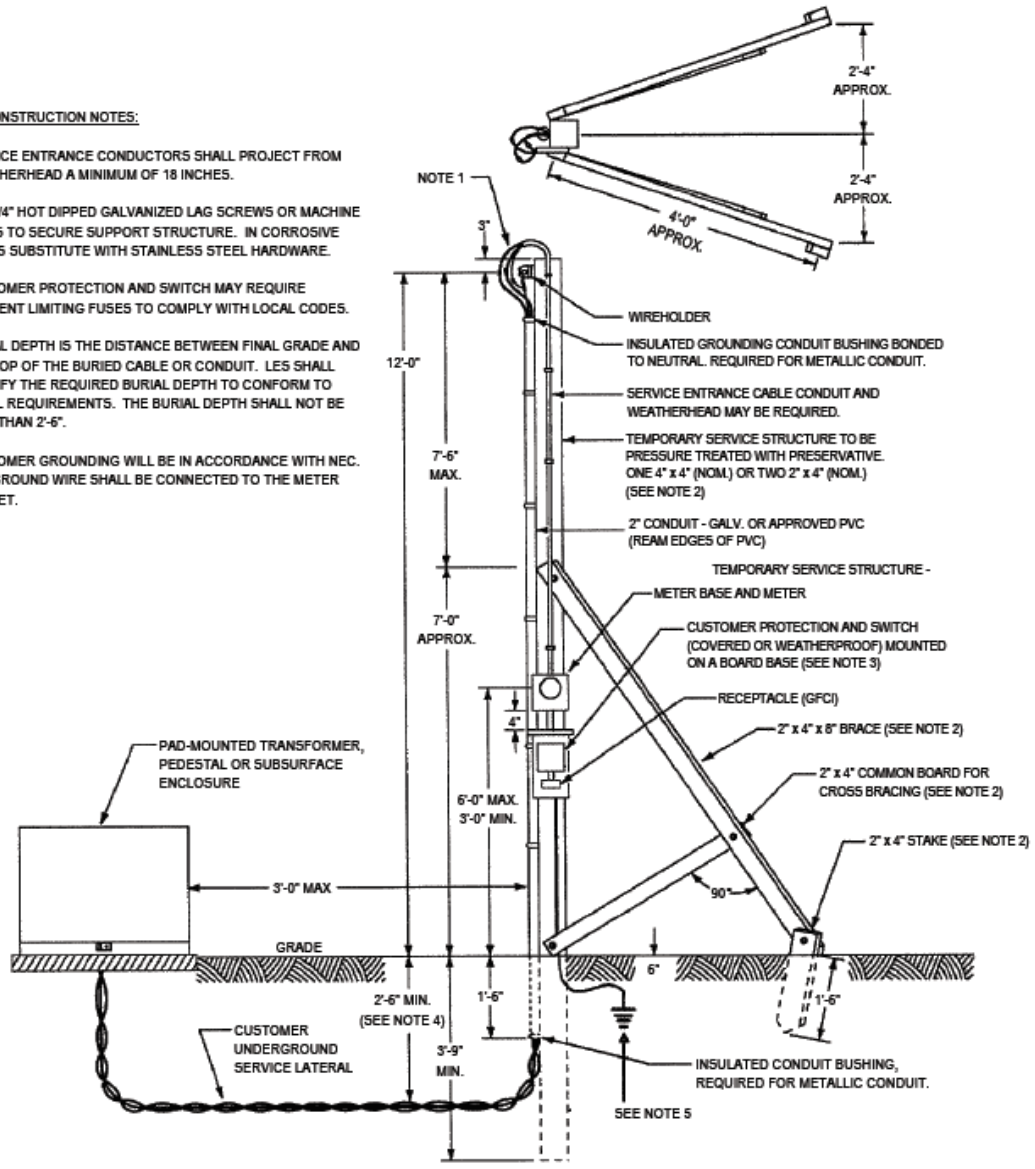
(1) SERVICE ENTRANCE CONDUCTORS SHALL PROJECT FROM WEATHERHEAD A MINIMUM OF 18 INCHES.

(2) USE 1/4" HOT DIPPED GALVANIZED LAG SCREWS OR MACHINE BOLTS TO SECURE SUPPORT STRUCTURE. IN CORROSIVE AREAS SUBSTITUTE WITH STAINLESS STEEL HARDWARE.

(3) CUSTOMER PROTECTION AND SWITCH MAY REQUIRE CURRENT LIMITING FUSES TO COMPLY WITH LOCAL CODES.

(4) BURIAL DEPTH IS THE DISTANCE BETWEEN FINAL GRADE AND THE TOP OF THE BURIED CABLE OR CONDUIT. LES SHALL SPECIFY THE REQUIRED BURIAL DEPTH TO CONFORM TO LOCAL REQUIREMENTS. THE BURIAL DEPTH SHALL NOT BE LESS THAN 2'-6".

(5) CUSTOMER GROUNDING WILL BE IN ACCORDANCE WITH NEC. THE GROUND WIRE SHALL BE CONNECTED TO THE METER SOCKET.



Lincoln Electric System	ALTERNATE TEMPORARY SERVICE INSTALLATION FROM EXISTING URD SECONDARY	DATE: 3 May 2016
		FIGURE: 04

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Meter Services Specification Guide

GENERAL CONDITION NOTES:

LES WILL BE RESPONSIBLE FOR:

(a) PROVIDING AND INSTALLING OVERHEAD SERVICE DROP (#2 OR #4 TRIPLEX SERVICE DROP).

(b) INSTALLING AND REMOVING THE METER.

THE CUSTOMER WILL BE RESPONSIBLE FOR:

(a) PROVIDING AND INSTALLING THE COMPLETED TEMPORARY STRUCTURE TO WHICH SERVICE DROP WILL BE ATTACHED. INSTALLATION MUST MEET LES' REQUIREMENTS. SERVICE ENTRANCE CONDUCTORS SHALL PROJECT A MINIMUM OF 18 INCHES FROM WEATHERHEAD .

NOTE: A TOOL SHED (IF AVAILABLE) OR OTHER TYPE OF FIXED SUPPORT MAY BE USED AS A TEMPORARY SERVICE DROP ATTACHMENT IF SUCH SUPPORT PROVIDES EQUAL STRENGTH AND PROPER CLEARANCES.

GENERAL CONSTRUCTION NOTES:

(1) TEMPORARY SERVICE DROPS NOT TO EXCEED 100 FEET.

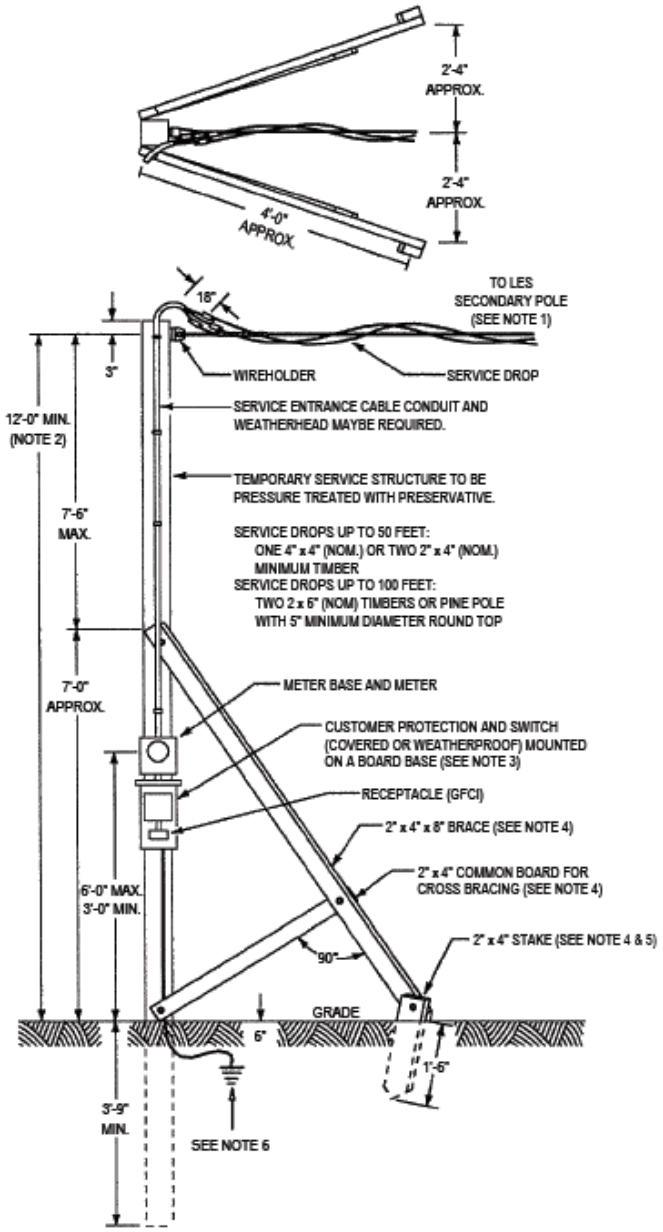
(2) THE SERVICE ATTACHMENT SHALL BE INSTALLED AT A HEIGHT THAT MAINTAINS PROPER CLEARANCES FOR SERVICE DROP CONDUCTORS. REFER TO FIGURE 6.

(3) CUSTOMER FUSE BOX AND SWITCH MAY REQUIRE CURRENT LIMITING FUSES TO COMPLY WITH LOCAL CODES.

(4) USE 1/4" x 4" HOT DIPPED GALVANIZED LAG SCREWS OR MACHINE BOLTS TO SECURE SUPPORT STRUCTURE. IN CORROSIVE AREAS SUBSTITUTE WITH STAINLESS STEEL HARDWARE.

(5) A 2" x 4" STAKE IS RECOMMENDED BUT DEPENDENT ON SOIL CONDITIONS. OTHER MATERIAL SUCH AS CONCRETE FORM STAKES MAY BE USED TO SECURE THE SUPPORT STRUCTURE.

(6) CUSTOMER GROUNDING WILL BE IN ACCORDANCE WITH NEC. THE GROUND WIRE SHALL BE CONNECTED TO THE METER SOCKET.



Lincoln Electric System	TEMPORARY SERVICE INSTALLATION FROM EXISTING OVERHEAD SECONDARY	DATE: 3 May 2016
		FIGURE: 05

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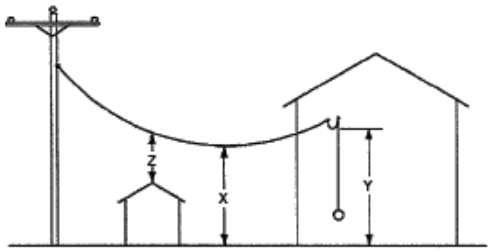

X = IN-SPAN GROUND CLEARANCE
Y = DRIP LOOP GROUND CLEARANCE
Z = ROOF OR BALCONY CLEARANCE

SERVICE DROP CABLE CLEARANCES

NATURE OF SURFACE UNDERNEATH SERVICE DROP CABLE	VERTICAL CLEARANCE ABOVE SURFACE FOR SERVICE DROP CABLE (SEE NOTES 1 & 2)
TRACK RAILS OF RAILROADS	24'-6"
ROADS, STREETS, DRIVEWAYS, PARKING LOTS, ALLEYS AND OTHER AREAS SUBJECT TO TRUCK TRAFFIC (SEE NOTE 3)	16'-6"
DRIVEWAYS, PARKING LOTS, AND ALLEYS	16'-6"
SPACES AND WAYS SUBJECT TO PEDESTRIANS OR RESTRICTED TRAFFIC ONLY (SEE NOTE 5)	12'-6"
ACCESSIBLE ROOFS OR BALCONIES	11'-0"
SWIMMING POOLS	22'-0"

NOTES:

(1) ALL CLEARANCES LISTED ARE SPECIFIED BY THE NESC. THESE ARE MINIMUM CLEARANCES THAT MUST BE MET FOR THE SAG CONDITION THAT CAN OCCUR EITHER AT: MAXIMUM OPERATING CONDUCTOR TEMPERATURE OR MAXIMUM LOADING AT 32°F, NESC ICE, FINAL SAG.

AN INCREASE IN DESIGN CLEARANCE AT TIME OF INSTALLATION IS RECOGNIZED AND ACCEPTABLE TO ACCOUNT FOR FUTURE RESURFACING OR GRADE CHANGES. A 12 INCH INCREASE IS TYPICAL IN LIEU OF ANY SPECIFIC INFORMATION. IT IS RECOMMENDED THAT THIS FACTOR SHOULD BE CONSIDERED AND, AS APPROPRIATE, INCLUDED WHEN PLANNING SERVICE INSTALLATIONS.

NOTE: A POINT OF CLARIFICATION IS NECESSARY REGARDING WHAT CAN APPEAR TO BE A 2 FOOT INCONSISTENCY BETWEEN THE NESC AND THE NEC FOR CLEARANCES OVER "ROADS, STREETS, DRIVEWAYS, PARKING LOTS, ALLEYS AND OTHER AREAS SUBJECT TO TRUCK TRAFFIC" (NESC - 16 FEET vs. NEC - 18 FEET). NEC CLEARANCES ARE SPECIFIED (WITH LESS SAG) AT A CONDUCTOR TEMPERATURE OF 60°F, NO WIND, WITH FINAL UNLOADED SAG IN THE CONDUCTOR. THE 2 FOOT DIFFERENCE IS PARTIALLY ATTRIBUTED TO COMPARATIVELY LARGER SAG BY NESC SPECIFICATIONS. ADDITIONAL ALLOWANCES MADE FOR RESURFACING, ETC. IN APPLICATION OF THE NESC RULE WILL ACCOUNT FOR THE REST OF THE 2 FOOT DIFFERENCE. A SERVICE INSTALLED TO EITHER SPECIFICATION WOULD BE VERY SIMILAR WHEN ANALYZED BY THE OTHER. THEREFORE, THERE IS NO PRACTICAL INCONSISTENCY BETWEEN THE TWO CODES IN THIS SITUATION..

(2) IN ADDITION TO PROPER DESIGN FOR GROUND/SURFACE CLEARANCES, BE CAREFUL TO PROVIDE CLEARANCES FROM BUILDING OPENINGS, WINDOWS, DOORS, ETC. (TYPICALLY 3'-0"). PROVIDE A MINIMUM CLEARANCE OF THREE (3) INCHES FROM DOWNSPOUTS AND EAVES FOR SERVICE CONDUCTORS 0 TO 750 VOLTS. FOR CONDUCTORS MEETING NESC RULE 230C1, 230C2, OR 230C3 THIS CLEARANCE MAY BE REDUCED TO ONE (1) INCH. ROUTE SERVICES SO THAT RAISED PATIO/DECK AREAS CAN BE AVOIDED IF POSSIBLE. AS AN ALTERNATIVE, CONSIDER PROVIDING ADDITIONAL CLEARANCE, WHEN FEASIBLE.

(3) TRUCKS ARE DEFINED AS ANY VEHICLE WITH A MAXIMUM 14 FEET IN HEIGHT. AREAS NOT SUBJECT TO TRUCK TRAFFIC ARE AREAS WHERE TRUCK TRAFFIC IS NOT NORMALLY ENCOUNTERED NOR REASONABLY ANTICIPATED.

(4) FOR RESIDENTIAL DRIVEWAYS ONLY, WHEN A BUILDING DOES NOT HAVE SUFFICIENT HEIGHT TO ALLOW A SERVICE ATTACHMENT LOCATION WHICH WILL PROVIDE 15 FEET CLEARANCE, THE CLEARANCES MAY BE REDUCED TO:

SERVICES 277 VLG:
IN-SPAN GROUND CLEARANCE - 12.5 FEET
DRIP LOOP GROUND CLEARANCE - 10.5 FEET

SERVICES 120 VLG:
IN-SPAN GROUND CLEARANCE - 12.0 FEET
DRIP LOOP GROUND CLEARANCE - 10.0 FEET

(5) SPACES AND WAYS SUBJECT TO PEDESTRIAN OR RESTRICTED TRAFFIC ONLY ARE THOSE AREAS WHERE RIDERS ON HORSEBACK, VEHICLES OR OTHER MOBILE UNITS EXCEEDING 8 FEET IN HEIGHT, ARE PROHIBITED BY REGULATION OR PERMANENT TERRAIN CONFIGURATIONS OR ARE OTHERWISE NOT NORMALLY ENCOUNTERED NOR REASONABLY ANTICIPATED.

(6) FOR RESIDENTIAL DRIVEWAYS ONLY, WHEN A BUILDING DOES NOT HAVE SUFFICIENT HEIGHT TO ALLOW A SERVICE ATTACHMENT LOCATION WHICH WILL PROVIDE 12 FEET CLEARANCE, THE CLEARANCES MAY BE REDUCED TO:

SERVICES 277 VLG:
IN-SPAN GROUND CLEARANCE - 10.5 FEET
DRIP LOOP GROUND CLEARANCE - 10.5 FEET

SERVICES 120 VLG:
IN-SPAN GROUND CLEARANCE - 10.0 FEET
DRIP LOOP GROUND CLEARANCE - 10.0 FEET

(7) WHERE ROOFS OR BALCONIES ARE NOT READILY ACCESSIBLE AND WHERE VOLTAGE BETWEEN SERVICE CONDUCTORS DOES NOT EXCEED 300 VOLTS OR WHERE CABLES MEETING NESC RULE 230C2 OR 230C3 AND VOLTAGE DOES NOT EXCEED 750 VOLTS, CLEARANCE REDUCED TO 3.0 FEET.

(8) CLEARANCE IN ANY DIRECTION FROM THE POOL WATER LEVEL, EDGE OF POOL, BASE OF DIVING PLATFORM OR ANCHORED RAFT. CLEARANCE IN ANY DIRECTION TO A DIVING PLATFORM IS 14 FEET.

Lincoln Electric System	SERVICE DROP CABLE CLEARANCES FOR DUPLEX, TRIPLEX, AND QUADRUPLE X CONDUCTORS	DATE: 1 Sep 2016
		FIGURE: 06

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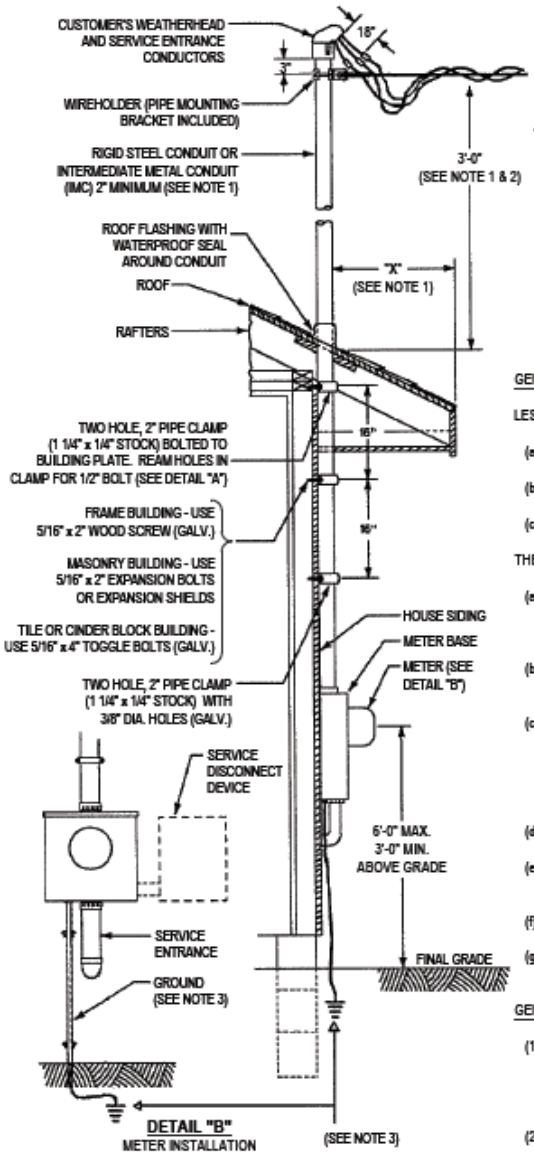
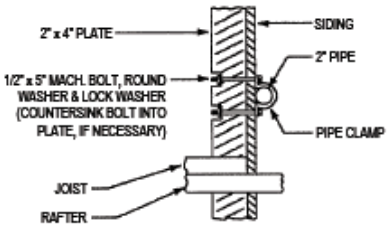


DETAIL "B"
METER INSTALLATION



DETAIL "A"
METHOD OF ATTACHING
2" PIPE TO BUILDING PLATE

GENERAL CONDITION NOTES:

LES WILL BE RESPONSIBLE FOR:

(a) DESIGNATING THE LOCATION OF THE SERVICE MAST AND METER.

(b) PROVIDING AND INSTALLING THE OVERHEAD SERVICE DROP. SEE APPENDIX SPEC 1310.A.

(c) INSTALLING AND REMOVING THE METER.

THE CUSTOMER WILL BE RESPONSIBLE FOR:

(a) PROVIDING AND INSTALLING THE WEATHERHEAD, SERVICE MAST, ROOF FLASHING, BUILDING PLATE ATTACHMENT, BUILDING ATTACHMENTS AND SERVICE ENTRANCE CONDUCTORS. SERVICE ENTRANCE CONDUCTORS SHALL PROJECT A MINIMUM OF 18 INCHES FROM WEATHERHEAD.

(b) PROVIDING A MAST SUPPORT STRONG ENOUGH TO WITHSTAND THE STRAIN IMPOSED BY THE SERVICE DROP.

(c) INSTALLING MAST PIPE THROUGH A 2-3/8" DIA. HOLE IN A 2" x 12" MIN. BLOCK SOLIDLY BETWEEN RAFTERS - USE 3/8" x 4" WOOD SCREWS, FOUR ON EACH SIDE. MINIMUM ALLOWABLE SEPARATION BETWEEN ROOF AND SERVICE ATTACHMENTS MAY BE 1"-6", IF DIMENSION "X" IS 4'-0" OR LESS. MAXIMUM CONDUCTOR FILL IN 2" PIPE IS (3)-4/0 CONDUCTORS OR SERVICE ENTRANCE CABLE EQUIVALENT.

(d) PROVIDING AND INSTALLING THE GROUND ROD, GROUND CLAMP & GROUND WIRE.

(e) PROVIDING, INSTALLING, AND MAKING METER CONNECTIONS FOR THE SERVICE ENTRANCE CONDUCTORS.

(f) SECURELY MOUNTING THE METER BASE IN A PLUMB POSITION.

(g) INSTALLING EQUIPMENT IN ACCORDANCE WITH LES STANDARDS AND/OR LOCAL ORDINANCES OR CODES.

GENERAL CONSTRUCTION NOTES:

(1) SERVICE MAST TO BE USED WHERE IT IS IMPOSSIBLE TO ATTACH WIREHOLDERS TO THE BUILDING WALL AND MAINTAIN PROPER CLEARANCE ACCORDING TO FIGURE 9. FOR PROPER ROOF TO SERVICE ATTACHMENT CLEARANCES, REFER TO CUSTOMER RESPONSIBILITY (c). ONLY POWER SERVICE CONDUCTORS ARE ALLOWED TO CONTACT THE SERVICE MAST NEC 230-28.

(2) MINIMUM HEIGHT OF 18", MAXIMUM HEIGHT OF 36" WITHOUT GUYING

(3) CUSTOMER GROUNDING WILL BE IN ACCORDANCE WITH NEC. THE GROUND WIRE SHALL BE CONNECTED TO THE METER SOCKET. METER SOCKET USED ON COMMERCIAL CUSTOMER SHALL HAVE A LEVER OPERATED BY-PASS FOR THREE PHASE AND SINGLE PHASE.

Lincoln Electric System	SERVICE ATTACHMENT TO MAST OF LOW PROFILE OR OTHER BUILDING	DATE: 1 Sep 2016
		FIGURE: 07

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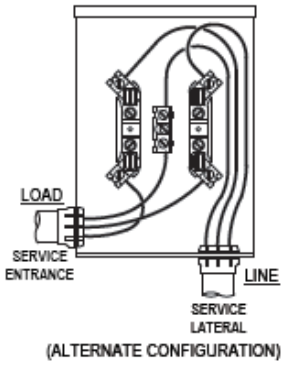
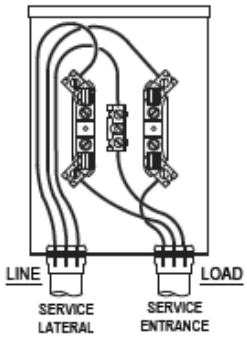
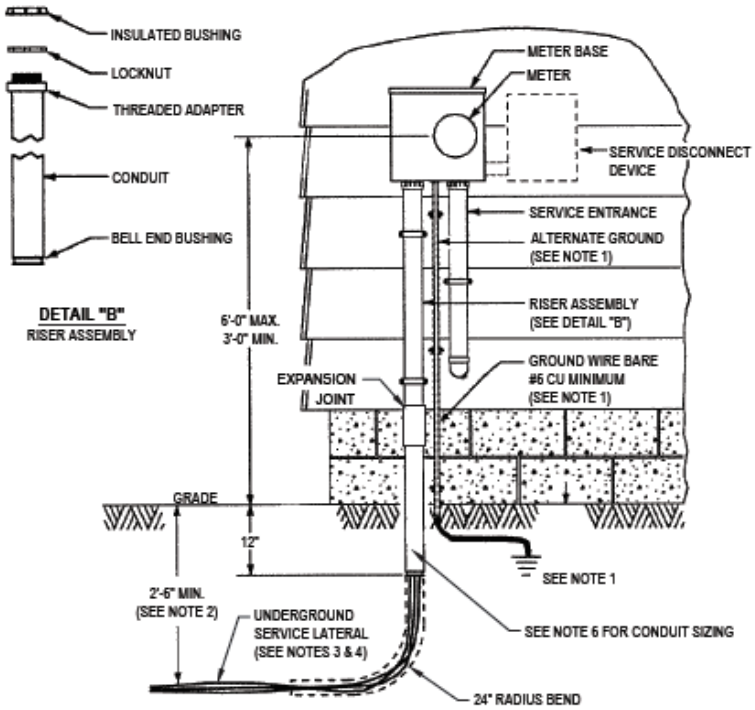


(ALTERNATE CONFIGURATION)



DETAIL "A"
METER BASE (TYPICAL)



GENERAL CONDITION NOTES:

LES WILL BE RESPONSIBLE FOR:

(a) DESIGNATING THE LOCATION FOR THE TRENCH AND THE METER.

(b) PROVIDING AND INSTALLING THE UNDERGROUND SERVICE LATERAL.

(c) INSTALLING AND REMOVING THE METER.

(d) MAKING THE CONNECTIONS IN THE METER BASE FOR THE UNDERGROUND SERVICE LATERAL (SEE DETAIL "A").

THE CUSTOMER WILL BE RESPONSIBLE FOR:

(a) PROVIDING AND INSTALLING THE RISER ASSEMBLY. RISER ASSEMBLY TO CONSIST OF AN INSULATING BUSHING, LOCKNUT, THREADED ADAPTER, GALVANIZED OR SCHEDULE 40 PVC CONDUIT WITH BELL END AND CLAMP.

(b) PROVIDING AND INSTALLING THE GROUND ROD, GROUND CLAMP, AND GROUND WIRE.

(c) PROVIDING, INSTALLING, AND MAKING METER CONNECTIONS FOR THE SERVICE ENTRANCE CABLE.

(d) SECURELY MOUNTING THE METER BASE IN A PLUMB POSITION.

(e) INSTALLING AN EXPANSION JOINT ON EVERY RISER.

GENERAL CONSTRUCTION NOTES:

(1) CUSTOMER GROUNDING WILL BE IN ACCORDANCE WITH NEC. THE GROUND WIRE SHALL BE CONNECTED TO THE METER SOCKET.

(2) BURIAL DEPTH IS THE DISTANCE BETWEEN FINAL GRADE AND THE TOP OF THE BURIED CABLE OR CONDUIT. LES SHALL SPECIFY THE REQUIRED BURIAL DEPTH TO CONFORM TO LOCAL REQUIREMENTS. THE BURIAL DEPTH SHALL NOT BE LESS THAN 2'-6".

(3) IF THE CUSTOMER DOES THE TRENCHING, THE TRENCH IS TO EXTEND NO CLOSER TO LES' TRANSFORMER OR PEDESTAL THAN A DISTANCE SPECIFIED BY LES. CUSTOMER TO DETERMINE LOCATION OF ALL UTILITIES BEFORE TRENCHING.

(4) ADDITIONAL PVC CONDUIT AND A 24 INCH BEND MAY BE INSTALLED IN ORDER TO EXTEND CONDUIT BEYOND ANY GROUND LEVEL OBSTRUCTION (PATIO, DECK, DRIVEWAY, WALKWAY, ETC.). IF ADDITIONAL PVC CONDUIT IS REQUIRED TO CLEAR OBSTRUCTIONS, REFER TO LES FOR APPROVED PVC USAGE.

(5) METER SOCKET USED ON COMMERCIAL CUSTOMER SHALL HAVE A LEVER OPERATED BY PASS FOR THREE PHASE AND SINGLE PHASE.

(6) 200 AMP SERVICE = 2" CONDUIT
400 AMP SERVICE - 3-1/2" CONDUIT

Lincoln Electric System	SINGLE PHASE UNDERGROUND SERVICE METER INSTALLATION	DATE: 21 May 2019
		FIGURE: 08

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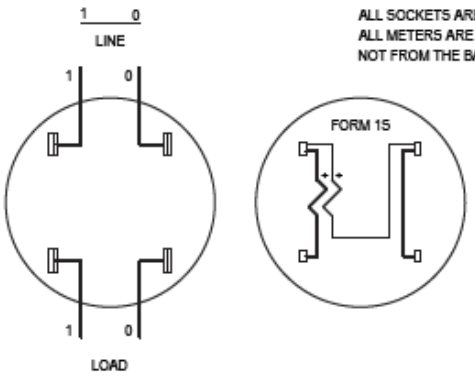
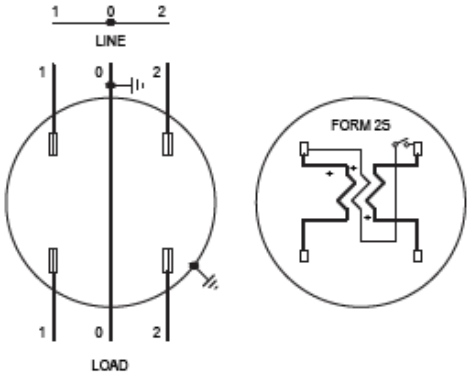


ALL SOCKETS ARE VIEWED FROM THE FRONT.
ALL METERS ARE VIEWED FROM THE FRONT,
NOT FROM THE BASE.

1Ø, 2 W CIRCUIT
1 STATOR, 2 W METER, SELF-CONTAINED

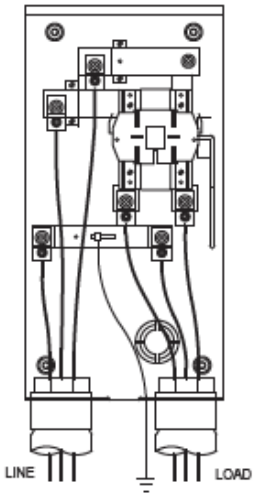
2 WIRE 120 VOLT SINGLE PHASE



1Ø, 3 W CIRCUIT
1 STATOR, 1Ø, 3 W METER, SELF-CONTAINED

3 WIRE 120/240 VOLT SINGLE PHASE

- 200A AND BELOW - 1 PHASE
- RING OR RINGLESS TYPE
- 4-TERMINAL FOR 1Ø, 3W, 600V, 200A CONTINUOUS DUTY
- PROVISIONS TO FIELD INSTALL 5TH TERMINAL IN 9 O' CLOCK POSITION
- LINE/LOAD/NEUTRAL LUGS UP TO 350 MCM CU/AL
- GROUND LUG UP TO #2 CU/AL
- OH/UG FEED WITH OH HUB OPENING AND BLANK COVER
- KNOCKOUTS IN THE FOLLOWING SIZES & POSITIONS:
  ONE (1) 2 1/2" ON THE BACK PANEL AT THE BOTTOM CENTER
  ONE (1) 1/2" FOR EQUIPMENT GROUND IN BOTTOM PANEL
- NO BYPASS LEVER REQUIRED
- MINIMUM ENCLOSURE SIZE: 11" x 14" x 4 1/8"



400A SOCKET (CLASS 320 METER)

- 1 PHASE
- 4-TERMINAL FOR 1Ø, 3W, 600V, 320A CONTINUOUS DUTY
- PROVISIONS TO INSTALL 5TH TERMINAL IN 9 O' CLOCK POSITION
- LINE CONNECTORS: #4-600 MCM CU/AL OR (2) 1/0-250 MCM CU/AL
- KNOCKOUTS IN THE FOLLOWING SIZES & POSITIONS:
  THREE (3) 3 1/2" ON THE BOTTOM PANEL
  ONE (1) 1/2" FOR EQUIPMENT GROUND IN BOTTOM PANEL
- LEVER BYPASS REQUIRED
- MINIMUM ENCLOSURE SIZE: 13" x 28" x 4 7/8"

FOR 3 PHASE 400A SOCKET (CLASS 320 METER)
SPECIFICATIONS PLEASE CONTACT LES METER
SERVICES DEPARTMENT

Lincoln Electric System	SELF-CONTAINED METER DIAGRAMS	DATE: 8 Feb 2018
		FIGURE: 09

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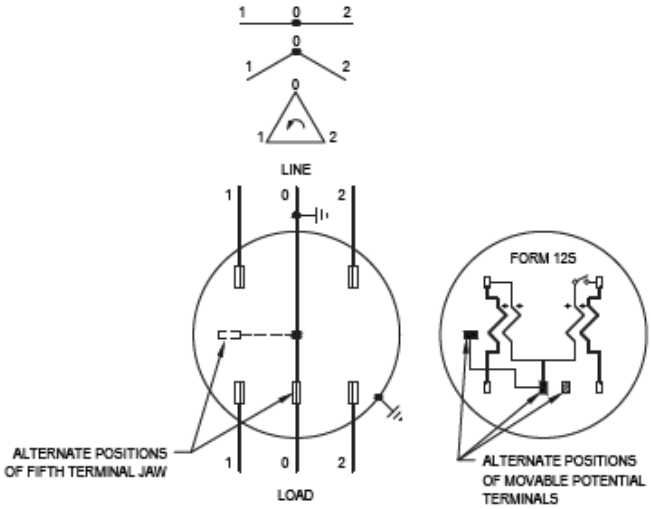


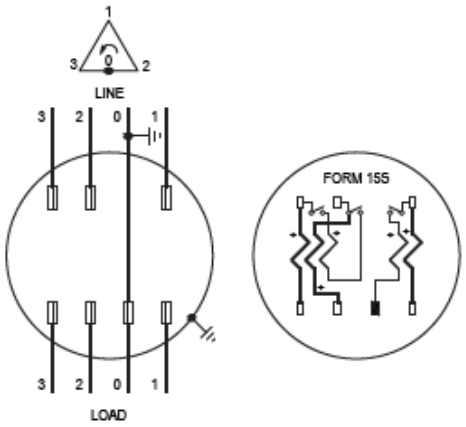
3 WIRE (NETWORK) 120/208 VOLT

2 STATOR, 3Ø, 3 W (NETWORK) METER, SELF-CONTAINED

- 200A AND BELOW - 1 PHASE SOCKETS (120/208 VOLT)
- 5-TERMINAL FOR 1Ø, 3W, 600V, 200A CONTINUOUS DUTY
- 5TH TERMINAL INSTALLED IN 9 O' CLOCK POSITION
- LINE/LOAD/NEUTRAL LUGS UP TO 350 MCM CU/AL
- GROUND LUG UP TO #2 CU/AL
- KNOCKOUTS IN THE FOLLOWING SIZES & POSITIONS:
  THREE (3) 2" ON THE BOTTOM PANEL
  ONE (1) 1/2" FOR EQUIPMENT GROUND IN BOTTOM PANEL
- MINIMUM ENCLOSURE SIZE: 11" x 14" x 4 1/8"

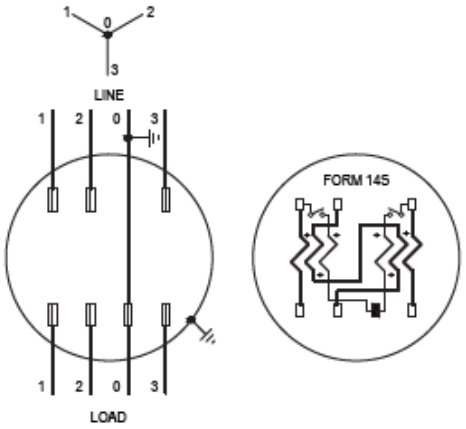
3 WIRE DELTA 240 VOLT 3-PHASE (MAINTENANCE ONLY)

ON 3-PHASE, 3-WIRE CIRCUITS, A GROUND IS OPTIONAL.
WHERE A 3-PHASE CIRCUIT IS GROUNDED, THE NEUTRAL CONNECTOR IN THE SOCKET SHOULD BE GROUNDED.
WHERE A 3-PHASE CIRCUIT IS UNGROUNDED, THE NEUTRAL CONNECTOR IN THE SOCKET SHOULD BE INSULATED.



3Ø, 4 W, Δ CIRCUIT
2 STATOR, 3Ø, 4 W, Δ METER, SELF-CONTAINED

4 WIRE DELTA 120/240 VOLT 3 PHASE



3Ø, 4 W, Y CIRCUIT
2 STATOR, 3Ø, 4 W, Y METER, SELF-CONTAINED
(ALSO CALLED 2 1/2 STATOR)

4 WIRE WYE 120/208 VOLT 3 PHASE

208 VOLT (WILD LEG) INSTALLED ON RIGHT HAND SIDE

- 200A - 3 PHASE
- 7-TERMINAL FOR 3Ø, 4W WYE OR DELTA, 600V, 200A CONTINUOUS DUTY
- LINE/LOAD/NEUTRAL LUGS UP TO 350 MCM CU/AL
- GROUND LUG UP TO #2 CU/AL
- OH/UG FEED WITH OH HUB OPENING AND BLANK COVER
- KNOCKOUTS IN THE FOLLOWING SIZES & POSITIONS:
  TWO (2) 3" ON THE BOTTOM PANEL
  ONE (1) 1/2" FOR EQUIPMENT GROUND IN BOTTOM PANEL
- LEVER BYPASS REQUIRED
- MINIMUM ENCLOSURE SIZE: 13" x 19" x 4 7/8"

Lincoln Electric System	SELF-CONTAINED METER DIAGRAMS	DATE: 12 Jun 2019
		FIGURE: 10

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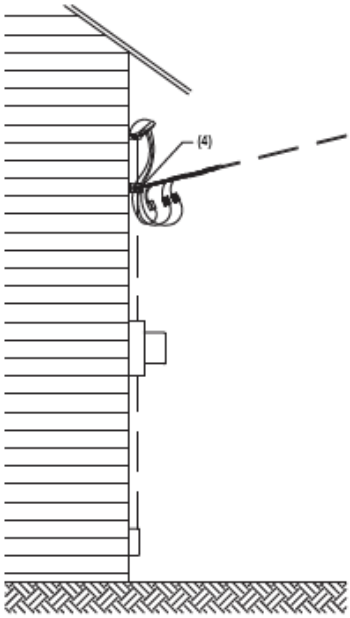

FIGURE 1: ATTACHMENT ON SIDE OF BUILDING

SERVICE SIZE SPECIFICATIONS - TABLE A			
SERVICE SIZE (AMPS)	# OF ATTACHMENTS	1Ø CABLE TYPE	3Ø CABLE TYPE
150A OR LESS	1	#2 TRIPLEX	#1/0 QUADRUPLEX
200/225A	1	#1/0 TRIPLEX	#1/0 QUADRUPLEX
400A	1	#4/0 TRIPLEX	#4/0 QUADRUPLEX
600A	2	#4/0 TRIPLEX	#4/0 QUADRUPLEX
800A	2	#4/0 TRIPLEX	#4/0 QUADRUPLEX
1000A	3	#4/0 TRIPLEX	#4/0 QUADRUPLEX
1200A	3	#4/0 TRIPLEX	#4/0 QUADRUPLEX
1400A	4	#4/0 TRIPLEX	#4/0 QUADRUPLEX
1600A	4	#4/0 TRIPLEX	#4/0 QUADRUPLEX
1800A	5	#4/0 TRIPLEX	#4/0 QUADRUPLEX
2000A	5	#4/0 TRIPLEX	#4/0 QUADRUPLEX

1Ø SERVICE CABLE TENSION - TABLE B (5)			
APPROX. SPAN LENGTH (6)	#2 TRIPLEX	#1/0 TRIPLEX	#4/0 TRIPLEX
50' SPAN, ~2' SAG	235 LBS	280 LBS	371 LBS
100' SPAN, ~3' SAG	627 LBS	747 LBS	989 LBS
150' SPAN, ~5' SAG	847 LBS	1009 LBS	1335 LBS

3Ø SERVICE CABLE TENSION - TABLE C (5)		
APPROX. SPAN LENGTH (6)	#1/0 QUADRUPLEX	#4/0 QUADRUPLEX
50' SPAN, ~2' SAG	314 LBS	426 LBS
100' SPAN, ~3' SAG	838 LBS	1136 LBS
150' SPAN, ~5' SAG	1131 LBS	1533 LBS

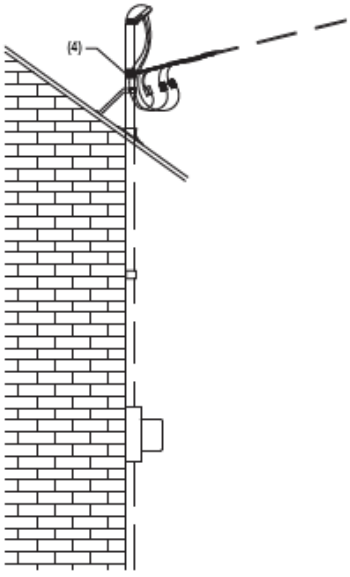

FIGURE 2: ATTACHMENT ON SERVICE RISER

HOW TO USE THIS SPECIFICATION DIAGRAM:

(1) FIND THE SERVICE SIZE ON THE SERVICE SIZE SPECIFICATIONS TABLE (TABLE A).

(2) FOR A SINGLE PHASE SERVICE, USE THE 1Ø CABLE TYPE COLUMN TO FIND THE SERVICE CABLE SIZE AND TYPE. THEN FIND THE NUMBER OF ATTACHMENTS FOR THE SERVICE SIZE IN THE # ATTACHMENTS COLUMN. FINALLY, LOOK UP THE SPECIFIED CABLE TYPE IN THE 1Ø SERVICE CABLE TENSION TABLE (TABLE B) AT THE APPROXIMATE SPAN LENGTH.

(3) FOR A THREE PHASE SERVICE, USE THE 3Ø CABLE TYPE COLUMN TO FIND THE SERVICE CABLE SIZE AND TYPE. THEN FIND THE NUMBER OF ATTACHMENTS FOR THE SERVICE SIZE IN THE # ATTACHMENTS COLUMN. FINALLY, LOOK UP THE SPECIFIED CABLE TYPE IN THE 3Ø SERVICE CABLE TENSION TABLE (TABLE C) AT THE APPROXIMATE SPAN LENGTH.

(4) ENSURE THE PULL-OUT STRENGTH OF THE CUSTOMER'S ATTACHMENT HARDWARE, WHEN USED WITH A PROPERLY SUPPORTED SERVICE RISER OR SPECIFIC BUILDING MATERIAL, IS GREATER THAN AND CAN WITHSTAND THE CONSTANT APPLIED TENSION SHOWN.

(5) TENSION CALCULATED USING HEAVY LOADING CONDITIONS ON SUPPLY CABLE DETERMINED BY THE N.E.S.C. USING 1/2 INCH RADIAL ICE, 4 LBS/FT^2 (40 MPH) WIND, AND A 0.3 OVERLOAD CAPACITY FACTOR. THIS IS NOT THE INITIAL (INSTALLED) TENSION. THIS TENSION IS BASED ON WHAT CAN BE EXPECTED OF ICE COVERED CABLES WITH WIND.

(6) CONDUCTOR SAG AT DIFFERENT SPAN LENGTHS IS DETERMINED ON A CASE-BY-CASE BASIS WITH MAINTAINING CLEARANCE REQUIREMENTS THE TOP CONSIDERATION. THE AMOUNT OF SAG USED FOR THESE CALCULATIONS IS THE PRACTICAL MINIMUM SAG EXPECTED ON INSTALLED SUPPLY CABLE, REPRESENTING THE HIGHEST EXPECTED CABLE TENSION. CONDUCTOR SAG CAN VARY OVER TIME AND WITH CHANGES IN TEMPERATURE.

LINCOLN ELECTRIC SYSTEM ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM USE OF THIS SPECIFICATION.

Lincoln Electric System	OVERHEAD SERVICE DROP CONNECTIONS 1Ø AND 3Ø - 480V OR LESS	DATE: 21 May 2019 FIGURE: 11

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RESIDENTIAL SINGLE PHASE - TABLE A			
TOTAL MAIN SWITCH	CABLE SIZE (AMPS)	CONDUIT SIZE	CT CABINET SIZE (MINIMUM)
100/150 AMP	1/0 AL (242A)	2" PVC	
REWIRE 100/150 AMP TO 200/225 AMP	1/0 AL (242A)	2" PVC	
200/225/300 AMP - NEW	3/0 AL (315A)	2" PVC	
400 AMP (320 AMP METER) (SEE NOTE 1)	350 MCM (472A)	3-1/2" PVC	
400 AMP CT (SEE NOTE 1)	350 MCM (472A)	3-1/2" PVC	30" x 26" x 10"
600 AMP CT	(2) 3/0 (630A)	(2) 2" PVC	30" x 26" x 10"
800 AMP CT	(2) 350 MCM (944A)	(2) 3-1/2" PVC	36" x 36" x 11"

(A)

NOTES:

(1) USING A 400 AMP SELF-CONTAINED METER SOCKET IS PREFERRED FOR RESIDENTIAL. THE SELF-CONTAINED METER SOCKET IS RATED 400 AMPS, BUT THE kWH METER IS 320 AMPS. A CURRENT TRANSFORMER (CT) CABINET IS AN ALTERNATE IF THE CUSTOMER SO DESIRES - IT IS NOT AN LES REQUIREMENT. THE CT CABINET CAN BE USED ON AN ACREAGE WHERE NUMEROUS CUSTOMER LOADS ARE BEING FED FROM A SINGLE POINT.

(2) AVAILABLE FAULT CURRENT MAY LIMIT THE USE OF A SELF-CONTAINED METER SOCKET.

COMMERCIAL SINGLE PHASE - TABLE B		
ENTRANCE SIZE (AMPS)	SECONDARY CONDUIT	
	NUMBER	SIZE
100 & 150	1	2"
200 & 225	1	2"
400	1	3-1/2"
600	1	3-1/2"
800	2	3-1/2"
1000	2	3-1/2"
1200	3	3-1/2"

320A - METER
400A - CT

(B)

NOTES:

(3) SIZE DUCTS AND CONDUCTOR FOR THE SUM OF THE SERVICE ENTRANCE EQUIPMENT SIZES WHEN EACH IS 400A OR LARGER AND THE DUCTS RUN ADJACENT TO EACH OTHER.

(4) DUE TO SPACE AND CONNECTOR LIMITATIONS, 6 SETS OF CONDUCTORS IS THE MAXIMUM THAT CAN BE INSTALLED TO A 1Ø PADMOUNT TRANSFORMER.

(5) VARIATIONS FROM THIS GUIDELINE MAY BE REQUIRED FOR IMPROVED VOLTAGE REGULATION OR OTHER REASONS.

COMMERCIAL THREE PHASE - TABLE C		
ENTRANCE SIZE (AMPS)	SECONDARY CONDUIT	
	NUMBER	SIZE
225	1	2-1/2"
400	1	3-1/2"
600	2	3-1/2"
800	3	3-1/2"
1000	3	3-1/2"
1200	4	3-1/2"
1400	5	3-1/2"
1600	5	3-1/2"
1800	6	3-1/2"
2000	7	3-1/2"

320A - METER
400A - CT

(C)

NOTES:

(6) SETS ARE ALL 4 - 1/C.

(7) AMPACITY RATING IS BASED ON LES COMPUTER PROGRAM DATA FOR XLPE CABLE IN SCHEDULE 40 PVC BURIED 36" IN A 20° AMBIENT, 100 RHO EARTH AND A MAXIMUM CONDUCTOR TEMPERATURE OF 90°C OR 60°C INTERFACE 50% OR 75% LOAD FACTOR, PER SET.

(8) TABLE C IS FOR MINIMUM CABLE AND CONDUIT REQUIREMENTS FOR THE SWITCH SIZE SHOWN. IF REQUIRED DUE TO LOAD, LOAD FACTOR AND PEAK DURATION, POWER FACTOR, VOLTAGE REGULATION, BOLT LOCKED SWITCH, OR OTHER REASONS, THE CABLE SETS AND POSSIBLY NUMBER OF CONDUITS CAN BE INCREASED. LOAD ON SWITCHES OVER 2000 A SHOULD HAVE CONDUIT AND CABLE SIZED PER LES ENGINEERING. SPECIAL CONSIDERATION MUST BE GIVEN TO LOADS THAT APPROACH OR EXCEED MAXIMUM TABLE VALUES.

(9) SIZE DUCTS AND CONDUCTOR FOR THE SUM OF THE SERVICE ENTRANCE EQUIPMENT SIZES WHEN EACH IS 400A OR LARGER AND THE DUCTS RUN ADJACENT TO EACH OTHER.

Lincoln Electric System	CABLE AND CONDUIT SPECIFICATIONS	DATE: 21 May 2019
		FIGURE: 12

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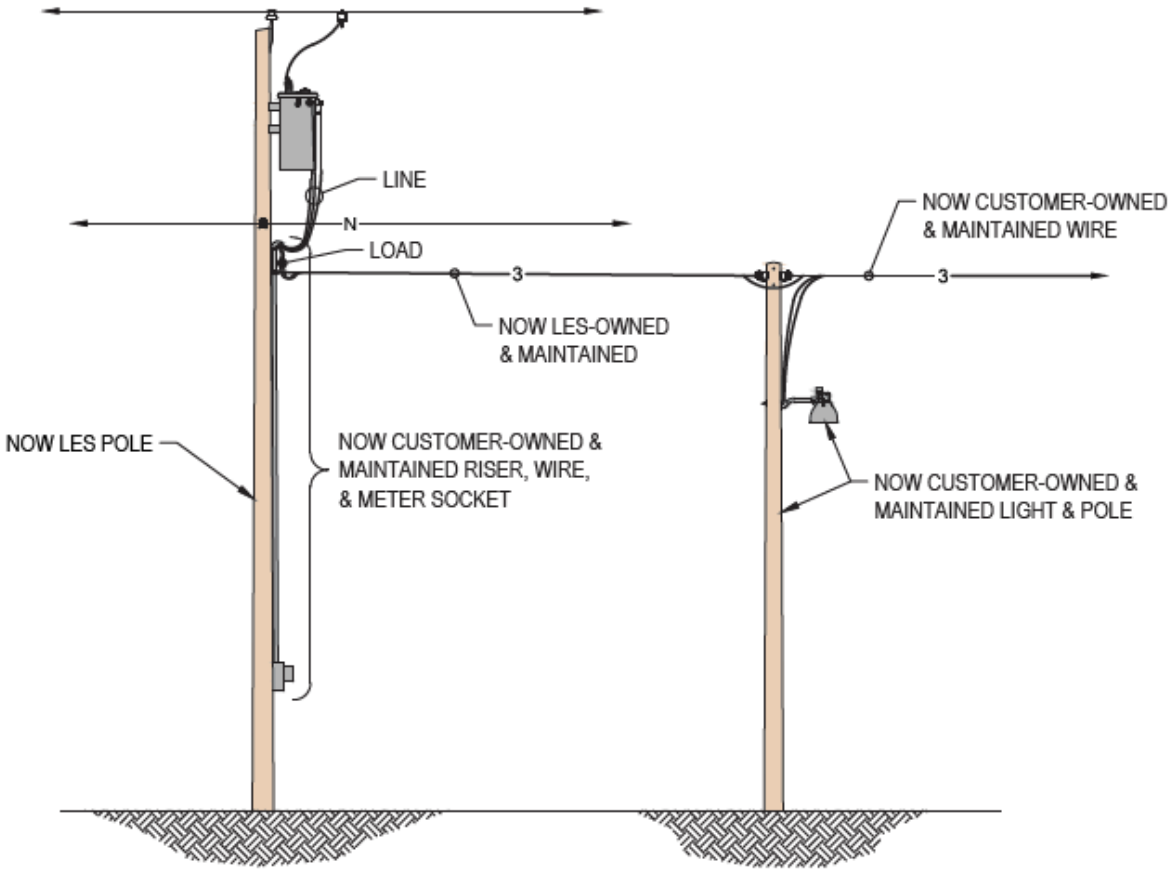

Lincoln Electric System	NORRIS/LES ACQUIRED SERVICE	DATE: 3 Sep 2019
		FIGURE: 13

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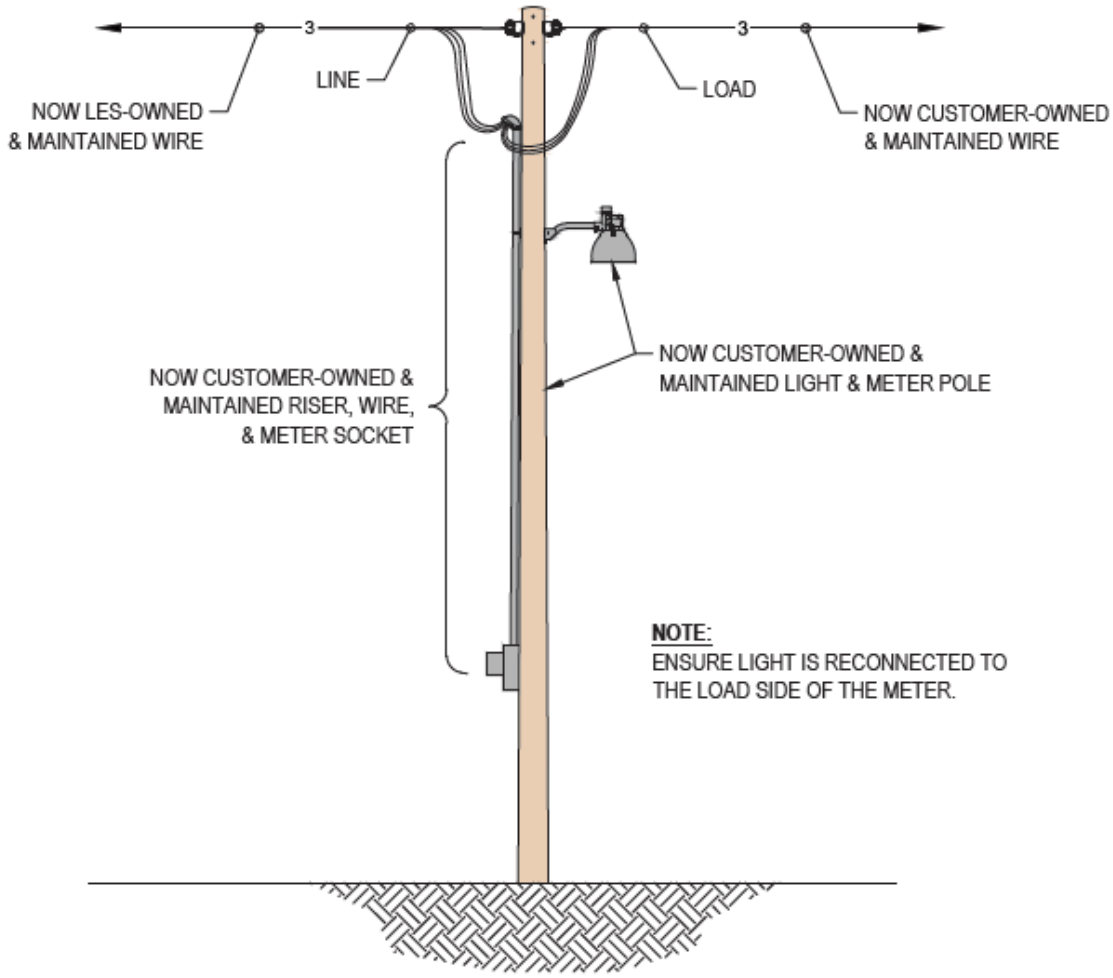

NOTE: THERE MAY EXIST METER POLES ACQUIRED YEARS AGO WHERE THERE IS AN LES NAIL OR NUMBER TAG. THOSE POLES ARE OWNED BY LES. CONTACT LES FOR DISPOSITION OF THESE POLES.

Lincoln Electric System	NORRIS/LES ACQUIRED SERVICE	DATE: 3 Sep 2019
		FIGURE: 14

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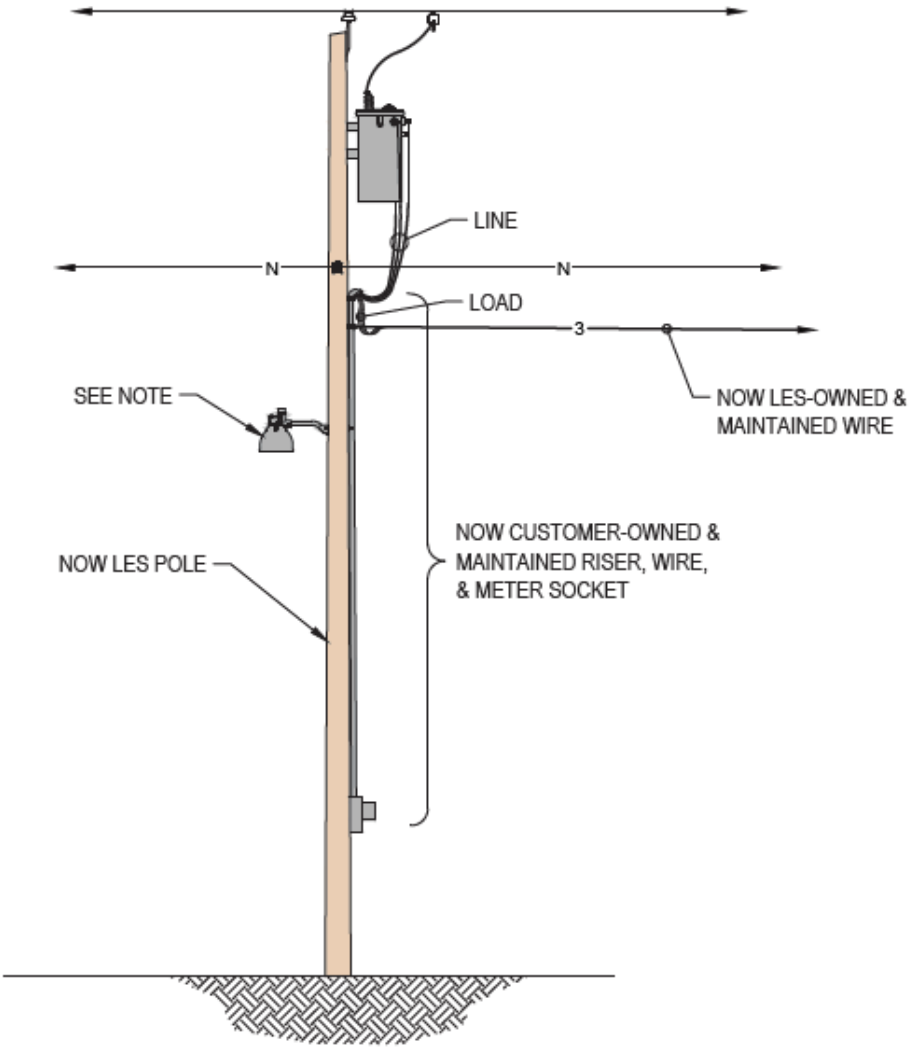

NOTE:

PRIVATELY OWNED SECURITY LIGHTS ARE NOT ALLOWED. IF SECURITY LIGHT WAS OWNED BY NORRIS AND LEASED TO CUSTOMER, LES WILL RECONNECT LIGHT TO THE LINE SIDE. LES WILL OWN & MAINTAIN THE SECURITY LIGHT.

Lincoln Electric System	NORRIS/LES ACQUIRED SERVICE	DATE: 3 Sep 2019
		FIGURE: 15

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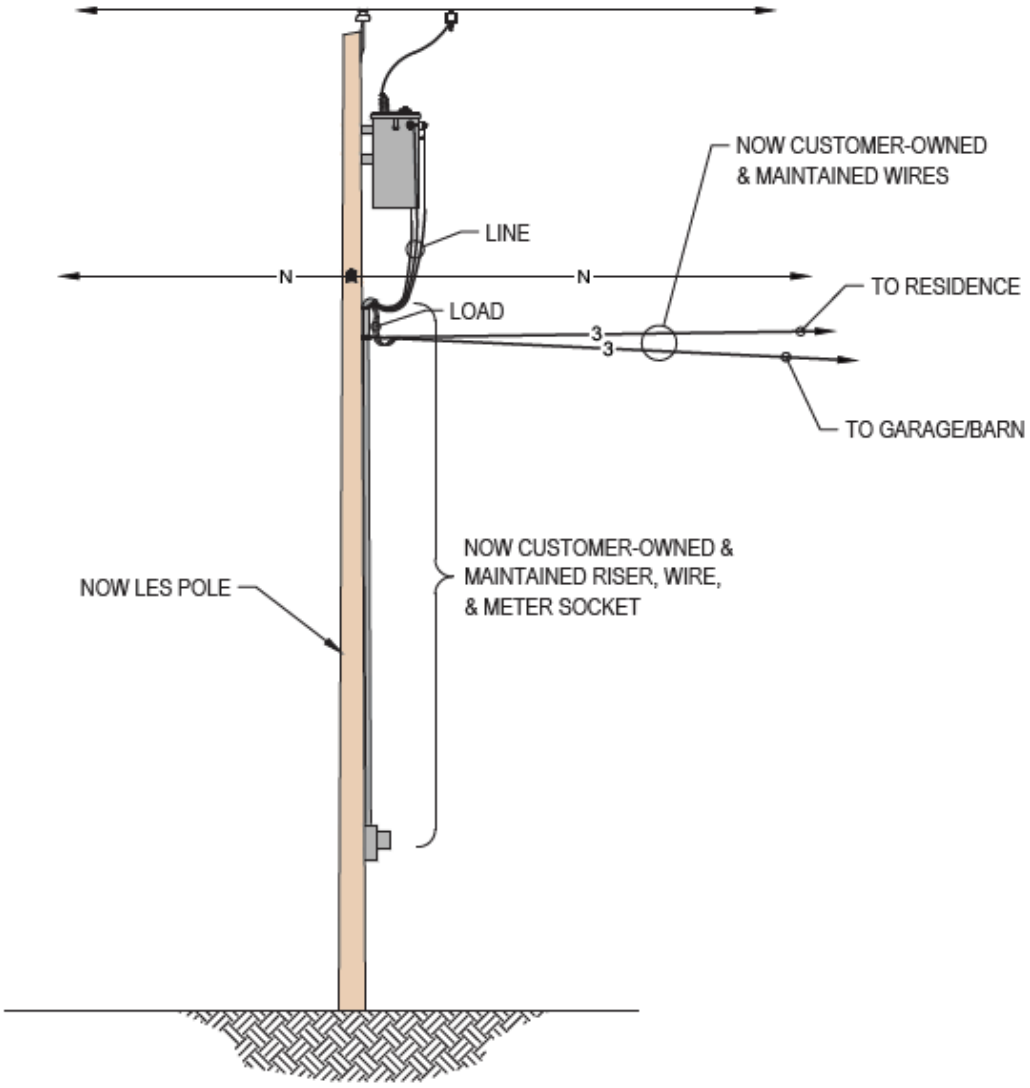

LES OWNS AND MAINTAINS ONE SERVICE DROP REGARDLESS OF WHETHER IT IS BEFORE OR AFTER THE CUSTOMER'S METER TO A RESIDENCE ONLY. HOWEVER, IF THERE ARE DROPS SERVING A RESIDENCE AND OTHER BUILDINGS (SUCH AS A BARN OR GARAGE) OR CUSTOMER-OWNED POLES WITH CUSTOMER LIGHTS, WELLS, ETC., LES DOES **NOT** OWN ANY OF THE SERVICE DROPS.

Lincoln Electric System	NORRIS/LES ACQUIRED SERVICE	DATE: 3 Sep 2019
		FIGURE: 16

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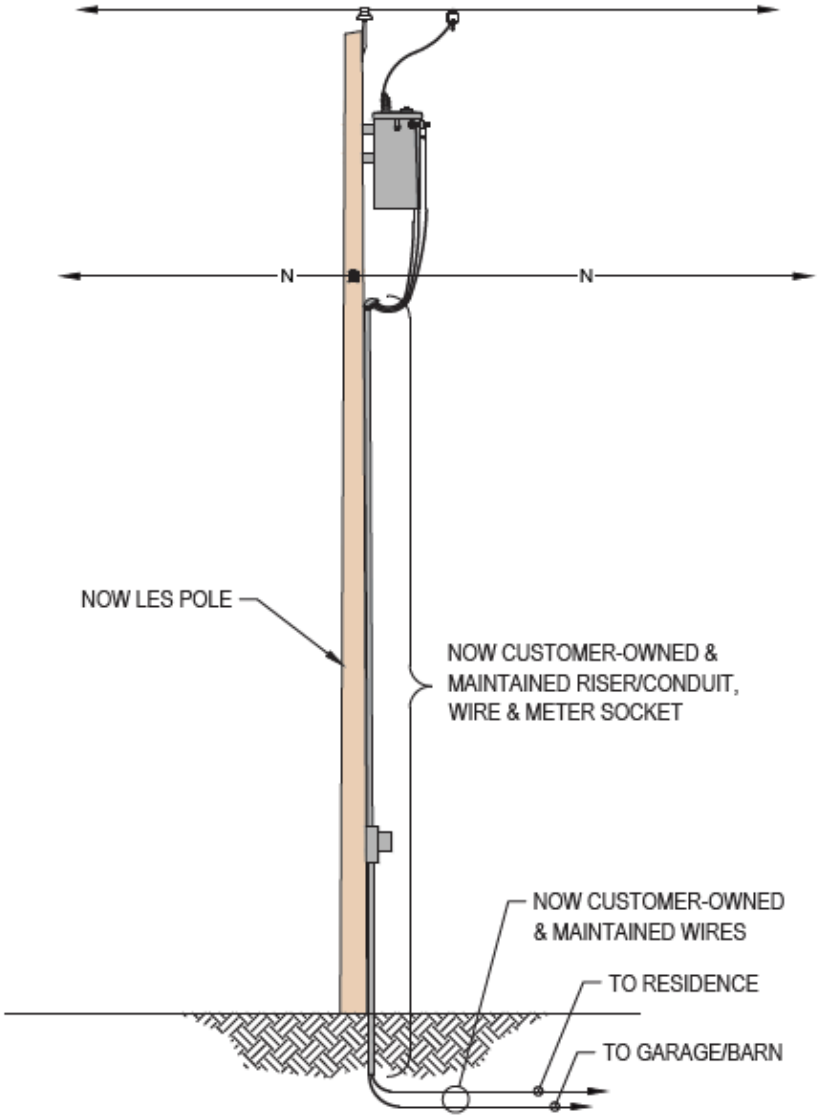

LES OWNS AND MAINTAINS ONE SERVICE DROP REGARDLESS OF WHETHER IT IS BEFORE OR AFTER THE CUSTOMER'S METER TO A RESIDENCE ONLY. HOWEVER, IF THERE ARE DROPS SERVING A RESIDENCE AND OTHER BUILDINGS (SUCH AS A BARN OR GARAGE) OR CUSTOMER-OWNED POLES WITH CUSTOMER LIGHTS, WELLS, ETC., LES DOES **NOT** OWN ANY OF THE SERVICE DROPS.

Lincoln Electric System	NORRIS/LES ACQUIRED SERVICE	DATE: 3 Sep 2019
		FIGURE: 17

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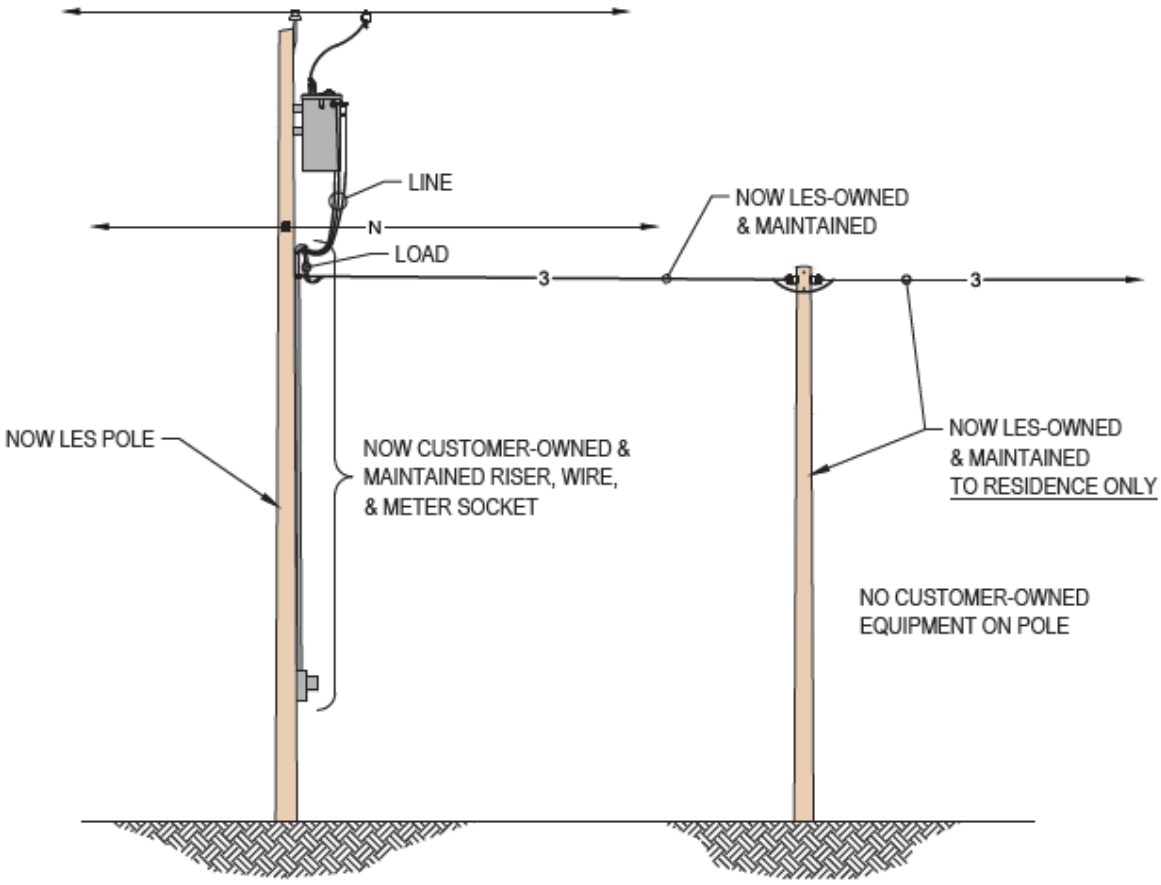

LES OWNS AND MAINTAINS ONE SERVICE DROP REGARDLESS OF WHETHER IT IS BEFORE OR AFTER THE CUSTOMER'S METER TO A SINGLE RESIDENCE. LES WILL OWN AND MAINTAIN SERVICE DROP SUSTAINING POLES AS LONG AS THERE IS NO CUSTOMER-OWNED EQUIPMENT ON THEM AND THE SERVICE SERVES ONLY A SINGLE RESIDENCE.

Lincoln Electric System	NORRIS/LES ACQUIRED SERVICE	DATE: 3 Sep 2019
		FIGURE: 18

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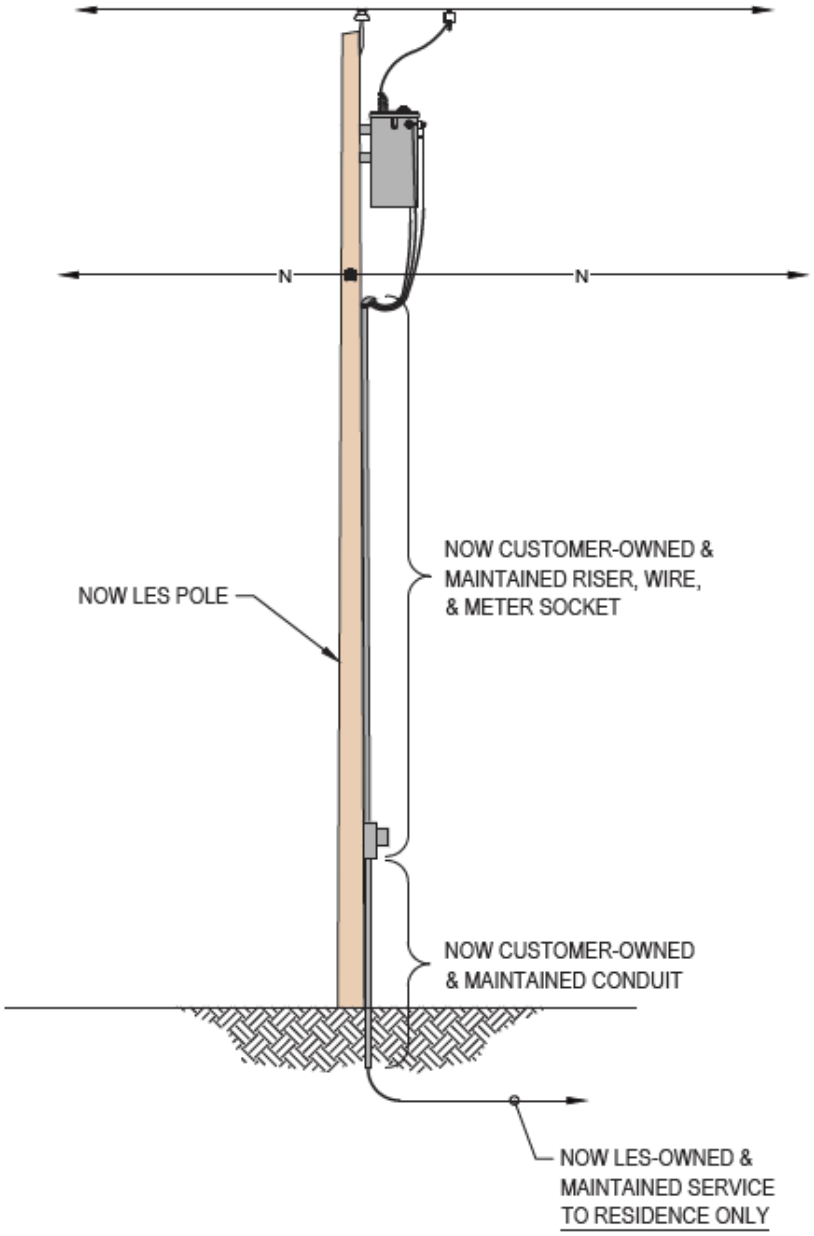

Lincoln Electric System	NORRIS/LES ACQUIRED SERVICE	DATE: 3 Sep 2019
		FIGURE: 19

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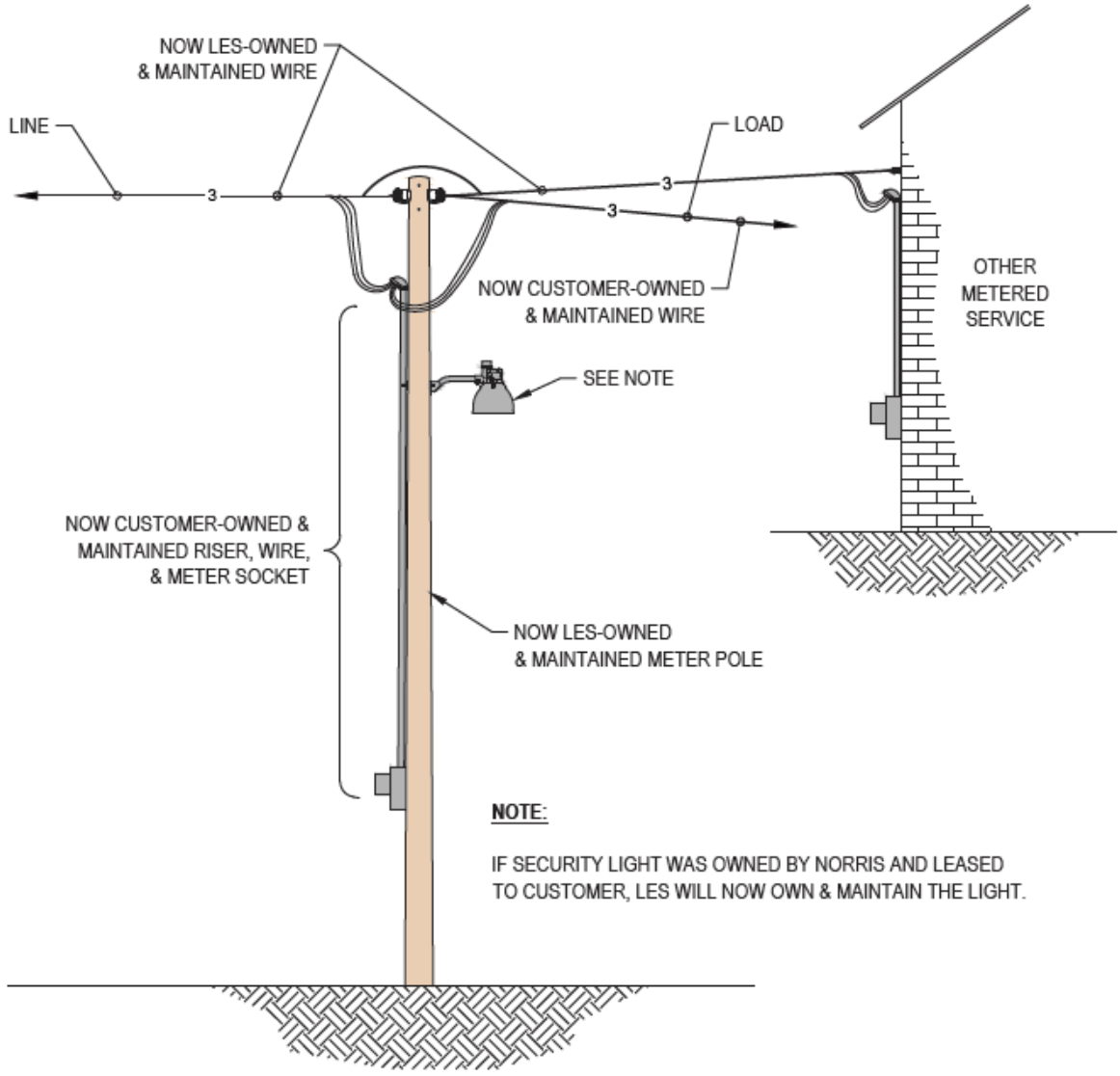

NOTE:

IF SECURITY LIGHT WAS OWNED BY NORRIS AND LEASED TO CUSTOMER, LES WILL NOW OWN & MAINTAIN THE LIGHT.

WHEN ACQUIRING NEW SERVICE AREA, SOME POLES MAY HAVE A METER SOCKET/LOOP ATTACHED AND A SERVICE GOING TO ANOTHER METER. BOTH METERS MAY SERVE THE SAME CUSTOMER ON THE SAME PROPERTY. IN THE CASE, LES WILL OWN AND MAINTAIN THE POLE WITH THE CUSTOMER'S METER/LOOP ON IT.

Lincoln Electric System	NORRIS/LES ACQUIRED SERVICE	DATE: 3 Sep 2019
		FIGURE: 20

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