

Electric Service Guidelines

TSN 449260

May 2017



Important Notice Regarding Removal of Oncor Electric Delivery Company LLC Meters to Perform Work on Customer's Premise

Effective October 15, 2013, as provided for in the Oncor Tariff for Retail Delivery Service approved by the Public Utility Commission of Texas (PUC), unauthorized removal of an Oncor meter, which includes any work on the customer's equipment that would require cutting the seal and removal of the meter, will result in a charge to the customer of \$19.20. Additional charges may also be applied if tampering is determined to have occurred.

To ensure that a customer is not charged these fees as a result of work being performed, prior authorization must be obtained by following the steps below BEFORE removing self-contained meters (only Oncor is authorized to remove 480 volt self-contained meters) and disconnecting power at a customer's premise.*

Call Oncor at 1.800.518.2374 BEFORE removing an Oncor self-contained meter and provide the following information:

- Electrical Contractor's Company name
- Contact phone number for clarifying information
- Contact person's name at Electrical Contractor Company
- Address where the work is to be done (if rural, provide directions)
- City
- Work to be done
- Will work require an electrical inspection? (Yes / No)
- Date meter will be pulled
- Date meter will be replaced

Upon receipt of the above notice, Oncor will schedule a trip to the customer's premise after the self-contained meter has been replaced, to inspect and reseal the meter.

If work is not completed on the date planned, customer or electrician must contact Oncor to avoid a charge being assessed.

The number above is answered between 8:00 a.m. and 7:00 p.m. M-F. For after-hours work, please leave the required information on the voicemail.

Failure to follow this process will result in the customer being charged, at a minimum \$19.20. Additionally, if the Oncor meter (or the customer's meter base) is determined to have been compromised and/or damaged, other charges may be applied.

If you have questions or need additional information, please refer to the Oncor.com website or call 1.800.518.2374

*If there is a locking mechanism (i.e., such as a lock or locking bar), contact Oncor at 1.800.518.2374 to schedule the removal of the locking mechanism prior to any work being conducted. Only Oncor may remove the locks. Please provide one business day notice for this type of work to be performed.

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FOREWORD

This booklet is issued by Oncor Electric Delivery Company LLC (Company) for use by Customers and their agents. These Electric Service Guidelines supersede all prior issues of the Electric Service Guidelines issued by Oncor and are effective with all construction commencing on or after May 1, 2017.

This booklet should be used as a guide in planning the installation of electrical equipment and methods of receiving electrical power and energy from the electrical delivery system of Company.

If service methods other than the examples discussed in this booklet are required, the Customer is to obtain written Company approval prior to letting bids and installing equipment.

Where local inspection authority is not involved, meter installations should be wired in accordance with the latest edition of the National Electrical Code or Company specifications when the Company specifications exceed those of the National Electrical Code.

The information presented herein will be revised periodically to reflect changes which may develop. It is the Customer's responsibility for obtaining the latest revision.

For additional information call Oncor at 1.888.313.6862 or visit the website:

oncor.com/EN/Pages/Construction-Guidelines.aspx

For underground utility locating service - Call 811 before you dig.

SECTION 100

GENERAL INFORMATION

100.01 DEFINITIONS

100.01.01 **Company**

Oncor Electric Delivery Company LLC and its officers, agents, employees, successors, and assigns.

100.01.02 **Connected Load**

The combined electrical requirement (i.e., the sum of the capacities and/or ratings) of all motors and other electric power consuming devices installed on the Customer's premises.

100.01.03 **Current Transformer (CT)**

A transformer used in metering applications which reduces, by a definite ratio, the value of primary current to a value usable by the meter.

100.01.04 **CT Enclosure (also known as CT Can)**

See instrument transformer enclosure.

100.01.05 **CT Socket**

A meter socket used only with external instrument transformers.

100.01.06 **Customer**

An end-use customer who purchases electric power and energy and ultimately consumes it. When used in the context of construction services, the term Customer also includes property owners, builders, developers, contractors, governmental entities, or any other organization, entity, or individual that is not a Competitive Retailer making a request for such services to the Company.

100.01.07 **Delivery Service**

The service performed by Company for the delivery of electric power and energy. Delivery Service comprises delivery system services and discretionary services.

100.01.08 **Demand**

The rate at which electric energy is used at any instant or averaged over any designated period of time and which is measured in kW or kVA.

100.01.09 **Demand Interval**

The specified interval of time on which a demand measurement is based. The Company demand interval is normally 15 minutes.

100.01.10 **Energy**

The measure of how much electric power is provided over time for doing work. The electrical unit is the watt-hour, or kilowatt-hour.

GENERAL INFORMATION (cont'd)

- 100.01.11 **Facility Extension Agreement**
The service agreement that must be executed by Company and Customer requesting certain construction services before Company can provide such construction services to the requesting entity.
- 100.01.12 **Good Utility Practice**
The term will have the meaning ascribed thereto in PUC Substantive Rules, Section 25.5, Definitions, or its successor.
- 100.01.13 **Inspection Authority**
Generally an incorporated City or Town, but may be an agency of the County, State, or Federal Government.
- 100.01.14 **Instrument Transformer (IT)**
Current transformers and voltage transformers are collectively called instrument transformers and are used for metering electric service.
- 100.01.15 **Instrument Transformer (IT) Enclosure (also known as CT Can or CT Enclosure)**
A metal cabinet which houses the Company's instrument transformers when a transocket is not feasible.
- 100.01.16 **Maximum Available Fault Current**
The amount of current that will flow due to a direct short circuit from one conductor to ground or from one conductor to another.
- 100.01.17 **Meter**
A device or devices for measuring the amount of electric power and energy delivered to a particular location.
- 100.01.18 **Meter Socket**
A receptacle of weatherproof construction used for mounting a socket type meter. Customer shall permanently mark each meter socket at multi-meter locations per 500.11, page 40, before a meter can be set.
- 100.01.19 **Point of Delivery (POD, Service Point)**
The point at which electric power and energy leaves the Company delivery system. The Company POD is the same as the NEC Service Point. See NEC Handbook Article 100, Exhibit 100.15 and Exhibit 100.16 and Service Point.
- 100.01.20 **Raceway**
Tubular or rectangular channel or conduit for containing electrical conductors, which may be exposed, buried beneath the surface of the earth, or encased in a building or structure.
- 100.01.21 **Secondary Service**
Non-residential delivery service at any one of Company's standard service voltages listed in 100.05.02, page 9.

GENERAL INFORMATION (cont'd)

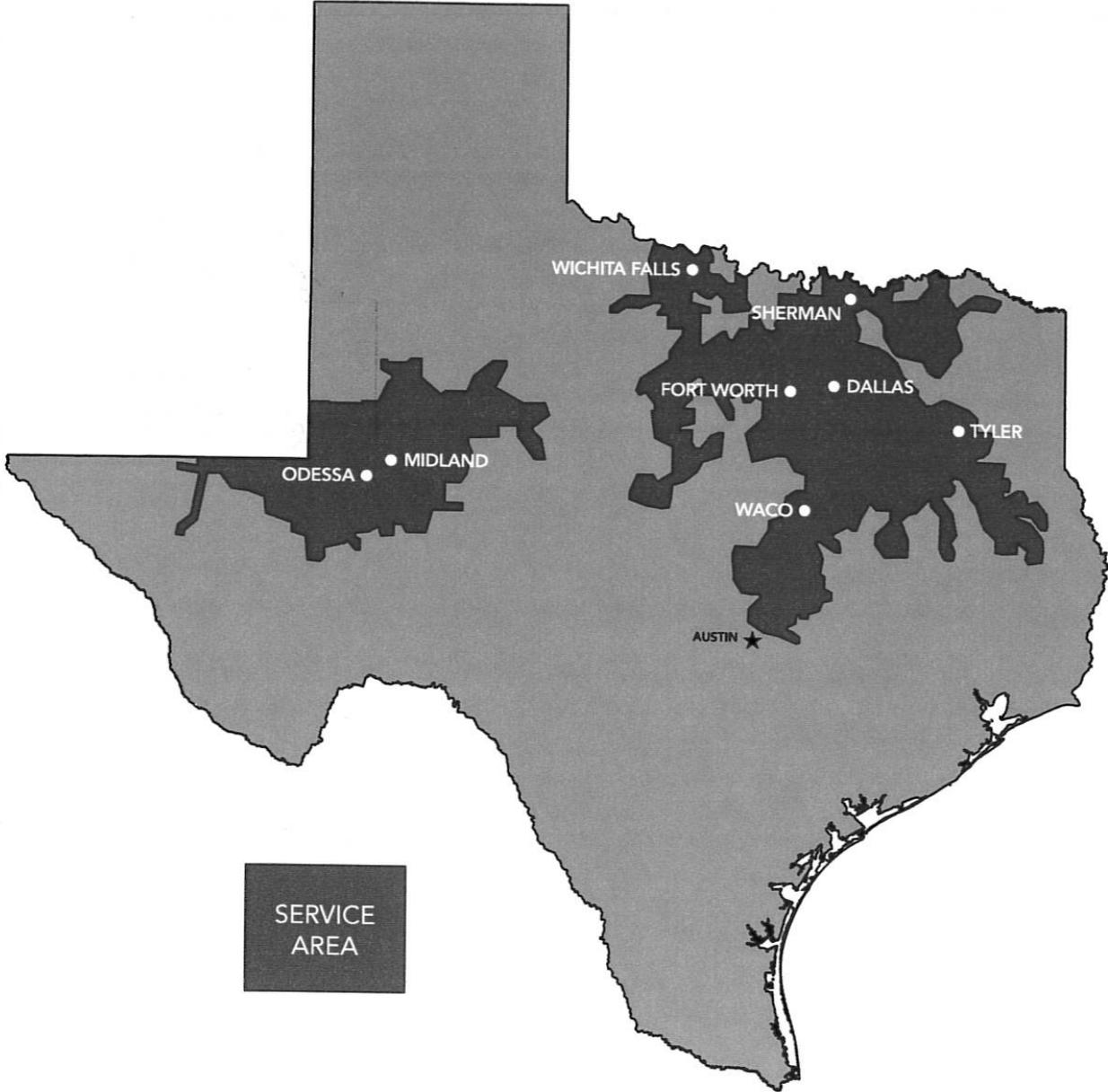
- 100.01.22 **Service Agreement**
Any commission approved agreement between Company and Customer which sets forth certain information, terms, obligations and/or conditions of delivery service pursuant to the provisions of the Tariff for Retail Delivery Service.
- 100.01.23 **Service Availability Statement**
A statement from the Company designating the acceptable location of the Customer's service entrance conductors, the proper location of meters and metering equipment, the type of service available or which will be made available to the specific location under consideration, and the capacity of the service to be provided.
- 100.01.24 **Service Drop**
Overhead conductors that extend from Company's overhead delivery system to the point of delivery (POD) where connection is made to Customer's electrical installation.
- 100.01.25 **Service Enclosure**
A connection enclosure specified, provided, owned and locked/sealed by the Company. Company provides the Service Enclosure to the Customer and it is installed by Customer for the purpose of connecting the service lateral to Customer's electrical installation. Typically installed on the exterior of a structure. See 500.08, page 40.
- 100.01.26 **Service Entrance Conductors**
Conductors provided by Customer extending from Customer's electrical equipment to the point of delivery (POD) where connection is made.
- 100.01.27 **Service Equipment**
The necessary equipment, usually consisting of (a) circuit breaker(s) or switch(es) and fuse(s) and their accessories, connected to the load end of service conductors to a building or other structure, or an otherwise designated area, and intended to constitute the main control and cutoff of the supply.
- 100.01.28 **Service Lateral**
Conductors, usually underground but sometimes in raceway above ground, that extend from Company's delivery system to the point of delivery or from Customer's electrical installation to the point of delivery.
- 100.01.29 **Service Point**
See 100.01.19, page 4 Point of Delivery; Reference NEC Handbook Article 100, Exhibit 100.15 and Exhibit 100.16 and Service Point.
- 100.01.30 **Secondary Enclosure**
A padmounted connection enclosure specified, installed, owned and locked/sealed by Company, located adjacent to Company transformer used to connect Customer's service conductors that are in excess in number and/or size, and cannot normally be accommodated by transformer. A secondary enclosure and its pad, conduits, trenching and secondary conductors from transformer to the secondary enclosure and are owned and installed by Company. A Customer payment is typically required for a secondary Enclosure installation. See 500.09, page 40.

GENERAL INFORMATION (cont'd)

- 100.01.31 **Suitable Space**
The required amount of cleared space after vegetation and other obstructions have been removed in order to access, install, operate, maintain and replace Company facilities. Contact Company for details.
- 100.01.32 **Tariff for Retail Delivery Service**
The document filed with, and approved by, the PUC pursuant to which Company provides delivery service. It is comprised of Rate Schedules, Riders, and service rules and regulations. The service rules and regulations include definitions, terms and conditions, policies, and Service Agreements.
- 100.01.33 **Transocket**
A metal enclosure which includes instrument transformers and meter socket.
- 100.01.34 **Voltage Transformer (VT, also known as PT-Potential Transformer)**
A transformer used in metering applications which reduces, by a definite ratio, the value of primary voltage to a value usable by the meter.
- 100.02 CODES GOVERNING ELECTRICAL INSTALLATIONS**
- 100.02.01 **National Electrical Safety Code**
The National Electrical Safety Code (NESC) is the code that Company follows in design and construction of electric supply lines whether overhead or underground.
- 100.02.02 **National Electrical Code**
The National Electrical Code (NEC) is published by the National Fire Protection Association (NFPA). The current edition of the NEC is the code that electrical contractors follow for wiring Customer's electrical installations.
- 100.02.03 **Inspection and Approval of Customer's Electrical Installation**
In those locations where an ordinance requires the Customer to obtain a certificate of inspection and acceptance or a permit, Customer will obtain all necessary permits and certificates of inspection covering its electrical installation. Company will not interconnect its distribution facilities with Customer's electrical installation until Company receives notification of approval of Customer's electrical installation by the proper authority. Company does not assume any duty of inspecting Customer's lines, wires, switches, grounding electrodes, or other equipment. Without limiting the foregoing sentence, Company may decline to interconnect its delivery system facilities with any of Customer's electrical installation that is known to be hazardous under applicable codes or that is of such character that satisfactory delivery service cannot be provided consistent with good utility practice, or where a known dangerous condition exists and for as long as it exists. **The providing of delivery service by Company does not indicate that Company has inspected Customer's electrical installation and pronounced it safe or adequate. If service methods other than the examples outlined in this booklet are required, the Customer is to obtain written Company approval prior to letting bids or installing equipment.**

GENERAL INFORMATION (cont'd)

100.03 COMPANY SERVICE AREA



GENERAL INFORMATION (cont'd)

100.04 SECURITY AND SAFETY

100.04.01 Radio and Television Antennas

Antennas for radio, radio transmitter (including citizen band or amateur), or televisions shall not be erected over or under Company's overhead electric lines, nor shall they be attached to Company's poles or other equipment. Antennas should be located as far as practicable from Company's lines and in a place where they may not accidentally fall into energized wires. To do otherwise may result in serious accidents, damage to property or poor radio or television reception. The attachment of antenna guying systems to poles carrying Company's conductors is prohibited. Such attachments will be removed upon discovery by Company.

100.04.02 Attachments to Company Facilities

Company does not permit any unlicensed attachments (such as wires, ropes, signs, banners, metering equipment, radio equipment, lightning arresters, alarms, etc.) to Company facilities by others except when authorized in writing by Company. Licensed attachments must comply with all requirements set forth by Company. License agreements do not allow meter equipment to be installed on Company poles if licensee utilization equipment is not on the same Company pole. See 500.04, page 36.

Company may without notice and without liability remove unauthorized attachments to Company facilities.

100.04.03 Company's Locks or Seals

It is standard practice by Company to install locks or seals on all meters, service enclosures, padmounted transformers, padmounted switchgear, unmetered service wireways, or other equipment. **Only Company agents and authorized persons shall remove a seal or lock.** See 500.02, page 35. See "Important Notice Regarding Removal of Oncor Meters to Perform work on Customer's Premise" printed inside front cover of this booklet.

100.04.04 Tampering

Tampering with a meter or metering equipment or using any method which permits the flow of unmetered energy to a premise violates the laws of the State of Texas and may lead to disconnection of service, prosecution, or both. Company shall not be liable to Customer for any injuries that result from such tampering.

100.05 STANDARD DELIVERY SERVICE

100.05.01 General

Company provides delivery service at the Company's standard voltages in accordance with Company's facilities extension policy, and not all standard voltages are available at every location. If Customer requests a voltage which is non-standard or not available for a specific load or location, such voltage may be provided by Company at the Company's discretion and at the expense of the requesting party. Company does not guarantee that facilities providing non-standard service (e.g., transformers) are readily available and extended outages may result.

GENERAL INFORMATION (cont'd)

100.05.02 Standard Secondary Voltages

Single-phase		Three-phase	
120	2W	---	---
---	---	120/208	4W, Y
120/240	3W	120/240	4W, Δ
240	2W	240	3W, Δ
240/480	3W	240/480	4W, Δ
---	---	277/480	4W, Y
480	2W	480	3W, Δ
2400*	2W	2400*	3W, Δ
---	---	2400/4160*	4W, Y
---	---	4160*	3W, Y

*See Company for metering requirements for these voltages

100.05.03 Request for Ungrounded 3-Wire, Three-Phase Service

3-wire, three-phase service at 240V, 480V and 2400V, shall be grounded unless the Customer requests, in writing, that the service be ungrounded (i.e. one service conductor is grounded at the distribution transformer **and** at the Customer's premises grounding electrode system). See 500.06.07, page 38 for meter sockets used on ungrounded services. Contact Company for details. 3-wire, three-phase service at 240V and 480V is only available from overhead transformers. 3-wire, three-phase service at 2400V is available from overhead and padmounted transformers in limited size ranges. New Customers or existing Customers adding load should check with the appropriate Company representative on availability of service at 2400V from overhead or padmounted transformers.

100.05.04 120/208 V, Single-phase, 3-wire Network Service (Non-Standard)

When and if available, Secondary Service Customers requesting 120/208V, single-phase, 3-wire service from Company Network Distribution systems in downtown Dallas and downtown Fort Worth are limited to service entrance capacity of 60 amperes. See 100.05.01, page 8 and Figure 5-I, page 54. For services greater than 60 amperes, the Customer must wire for full 4-wire, wye service.

Non-Network Secondary Service Customers requesting 120/208V, single-phase, 3-wire service from Company distribution systems may be limited based upon the existing Company facilities that must be reviewed for each location requested. If Customer load is greater than 200 amperes, Customer must wire for full 4-wire, wye service. This applies to both overhead and underground services. Refer to 100.05.01, page 8 and Figure 5-I, page 54.

GENERAL INFORMATION (cont'd)

100.05.05 **Mixed Use Customer Facilities**

Three-phase service for mixed use customer facilities (i.e. residential and commercial) shall be treated as Secondary Service. The point of delivery for such services shall be as specified in Tables 5-A & 5-B, pages 41 & 42.

100.05.06 **Point of Delivery (POD)**

Customer's electrical installation must be arranged so that the location of the point of delivery allows Company to provide safe and reliable delivery service, taking into consideration the location of existing Company facilities and construction needed to connect Customer's electric installation to Company system. Any change from the Company designated point of delivery (POD) is subject to payment by Customer based on any added costs to reach the new designated point.

100.05.07 **Easements, Rights-of-Way and Space Requirements**

Customer must grant to or secure for Company, at Customer's expense, any rights-of-way or easements on property owned or controlled by Customer necessary for Company to install delivery system facilities for the sole purpose of delivering electric power and energy to Customer. Customer must provide, without cost to Company, suitable space on Customer's premises for the installation of delivery system facilities necessary to deliver electric power and energy to Customer and for installation of Company's metering equipment and the meter. To obtain standards on suitable space requirements, contact Company. Company may inspect Customer provided space before installing electric facilities.

100.05.08 **Loads Exceeding 3000 Amperes**

Standard delivery service at 600 volts and less may be limited to 3000 amperes of load through a single Customer owned service entrance. Company may require loads exceeding 3000 amperes to be served with two or more adjacent services at one POD with totalized metering.

100.05.09 **Customer's Electrical Load**

Customer must take reasonable actions to control the use of electric power and energy so that Customer's electrical load at the point of delivery is in reasonable balance.

100.05.10 **Sensitive Equipment Protection**

Customers planning the installation of electric equipment such as computers, communication equipment, electronic control devices, motors, etc., the performance of which may be adversely affected by voltage fluctuations, distorted 60 hertz wave forms, or single-phase events are responsible for providing and installing the necessary facilities, including protective equipment, to limit these adverse effects.

100.05.11 **Three-Phase Service 4-wire, 120/240V**

Service at 120/240 volt, three-phase, 4-wire delta is available from overhead transformers. Availability of this service voltage from padmounted transformers is very limited. New Customers or existing Customers adding load should check with Company regarding availability of 4 wire, 120/240 volt, three-phase service from a padmount transformer.

SECTION 200

CLEARANCES

200.01 Texas Law & OSHA Regulations

To ensure safety and the protection of the public, Chapter 752 of the Texas Health and Safety Code makes it unlawful for unauthorized persons to move or be placed or bring any part of a tool, equipment, machine, or material within proximity of live overhead high voltage lines. OSHA Regulations also restrict the activities of unauthorized persons. See back cover for more details. Contractors and owners are legally responsible for the safety of construction workers under this law. This law carries both criminal and civil liability. The Oncor document **Safety Smart** provides additional information and may be found at website: oncor.com/EN/Pages/SafetySmart.aspx. For lines to be turned off, moved, or other arrangements, call Oncor at 1.888.313.6862

200.02 Local Codes

Some local Electrical Codes require structures to be located a safe distance away from live overhead high voltage lines as defined by the National Electrical Safety Code.

200.03 Clearances for Service Drop

See Figure 2-A, page 12.

200.04 Clearances of Swimming Pools from Overhead Facilities

Before installation of a pool, contact Company to review clearances to overhead facilities. See Figure 2-B, page 13.

200.05 Clearances of Swimming Pools from Underground Facilities

Before installation of a pool, contact Company to review clearances to underground facilities. See Figure 2-C, page 14.

200.06 Clearances of Padmounted Transformers from Buildings

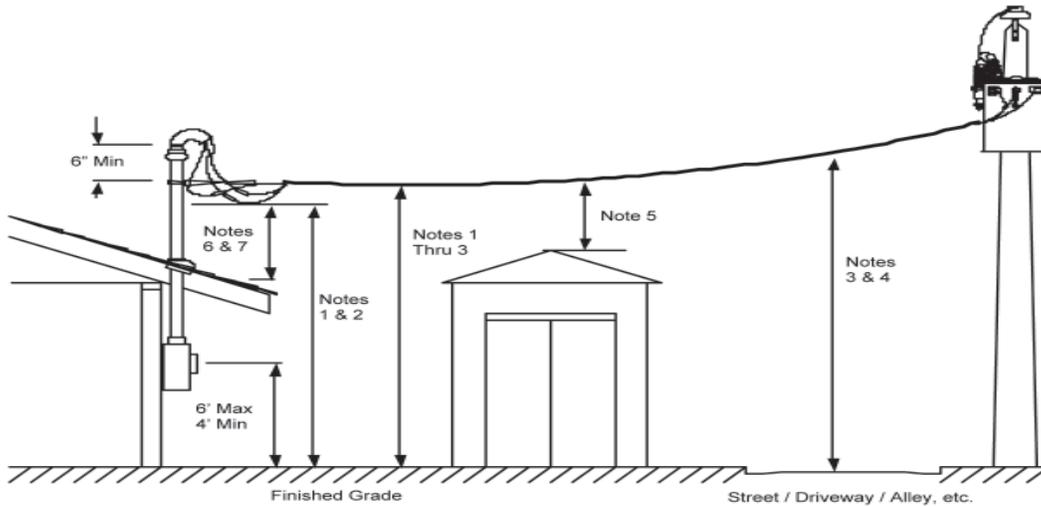
Padmounted transformers shall be installed to meet the spatial separations to buildings set forth in Figure 2-D, page 15. No transformers shall be installed within the drip line of a building unless installed in a transformer vault meeting the requirements of Article 450 of the National Electrical Code.

200.07 Screening Clearances around Padmounted Equipment

See Figure 2-E, page 16.

CLEARANCES FOR SERVICE DROP

FIGURE 2-A



CLEARANCES FOR SERVICE DROP

Clearances shall be maintained under all varying conditions of wind, temperature and ice loading. Allowance should be made for change in conductor sag due to varying temperature, wind and ice loading on the conductor. See Table 3-C, page 21 for minimum service attachment height.

VERTICAL CLEARANCES		Single Phase 120/240 208Y	240D 480Y	480D Single Phase 480
Notes:				
1.	Over spaces and ways subject to pedestrians or restricted vehicular traffic not exceeding 8 ft. in height (see Exceptions below)	12 ft.	12 ft.	12 ft.
2.	Residential Driveway (see Exceptions below)	16 ft.	16 ft.	16 ft.
3.	Alleys, commercial and apartment driveways, parking lots, and other areas subject to truck traffic.	16 ft.	16 ft.	16 ft.
4.	Streets, highways, county, or other public roads.	22 ft.	22 ft.	22 ft.
5.	Roof not readily accessible by means of a permanent ladder, doorway, ramp, or stairway (service not attached to building, i.e. passing over). *	3.5 ft.	3.5 ft.	3.5 ft.
6.	Roof within 6 ft. of mast where mast is within 4 ft. of nearest roof edge.	1.5 ft.	1.5 ft.	1.5 ft.
7.	Over roof of building service is attached to and roof is not readily accessible. *	3 ft.	3 ft.	3 ft.

HORIZONTAL CLEARANCES

-	Service drop conductors attached to a building shall not pass closer than 3 ft. from windows, wall projections, fire escapes, balconies or similar locations. *
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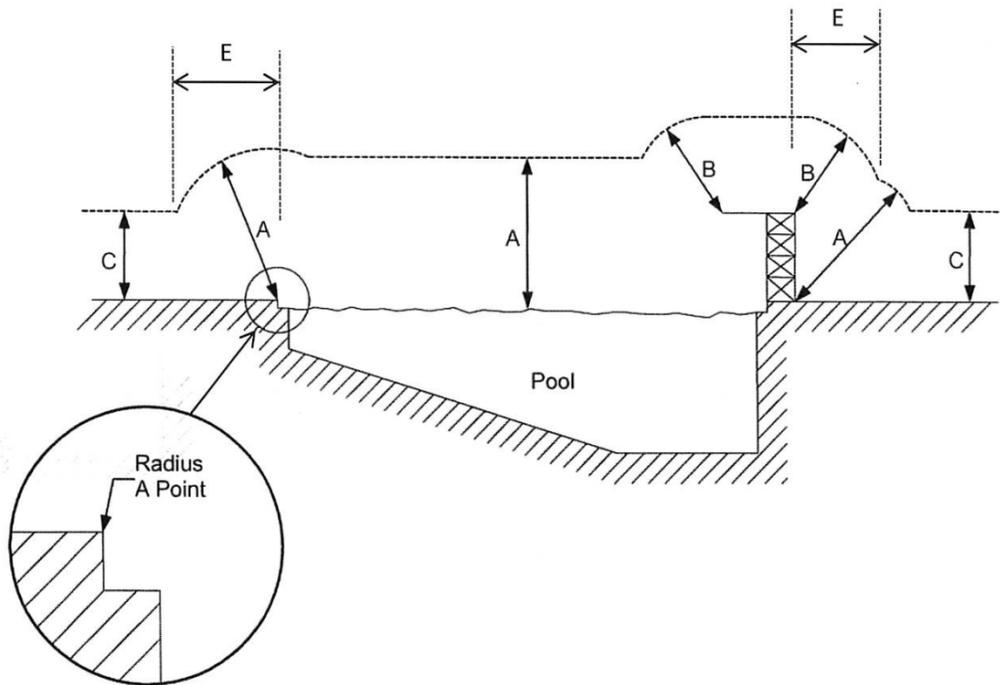
EXCEPTIONS listed below are related to Vertical Clearance Notes 1 & 2 for Insulated cables and where height of residential building does not permit above values. Prior approval by Company representative is required.

Exception	Description	120/240 208Y	240D 480Y	480D Single Phase 480
Exception 1	Over spaces and ways for residential service drops subject to pedestrians and restricted traffic not exceeding 8 ft. in height.	10 ft.	10.5 ft.	12 ft.
Exception 2	Over residential driveways only			
	• Service conductor	12 ft.	12.5 ft.	16 ft.
	• Drip loops	10 ft.	10.5 ft.	16 ft.

*A roof, balcony, or area is considered readily accessible to pedestrians if it can be casually accessed through a doorway, ramp, window, stairway, or permanently mounted ladder by a person on foot who neither exerts extraordinary physical effort nor employs tools or devices to gain entry. A permanently mounted ladder is not considered a means of access if its bottom rung is 8 ft. or more from the ground or other permanently installed accessible surface.

CLEARANCE OF SWIMMING POOLS FROM OVERHEAD FACILITIES

FIGURE 2-B



Notes:	Requirements	Overhead Guy or Neutral	Bundled or Cabled Secondary or Service	Open Wire Secondary or Service	Pole Line or Primary Conductor
A.	Clearance in any direction from water level, edge of pool, base of diving platform, or anchored raft.	27 ft.	27.5 ft.	28 ft.	30 ft.
B.	Clearance in any direction to diving platform, tower, water slide or other fixed, pool related structure.	19 ft.	19.5 ft.	20 ft.	22 ft.
C.	Vertical clearance over adjacent land which is driveways, parking lots, and alleys subject to truck traffic (any vehicle exceeding 8 ft. in height).	20.5 ft.	21 ft.	21.5 ft.	23.5 ft.
D.	Vertical clearance over adjacent land which is spaces and ways subject to pedestrians or restricted traffic only. *	14.5 ft.	17 ft.	17.5 ft.	19.5 ft.
E.	These clearances do not apply to overhead guys, neutral conductors and cabled conductor \leq 750 volts when these facilities are 10 ft. or more horizontally from the edge of the pool, diving platform, diving tower, water side, or other fixed, pool related structure.	10 ft.	-	-	-

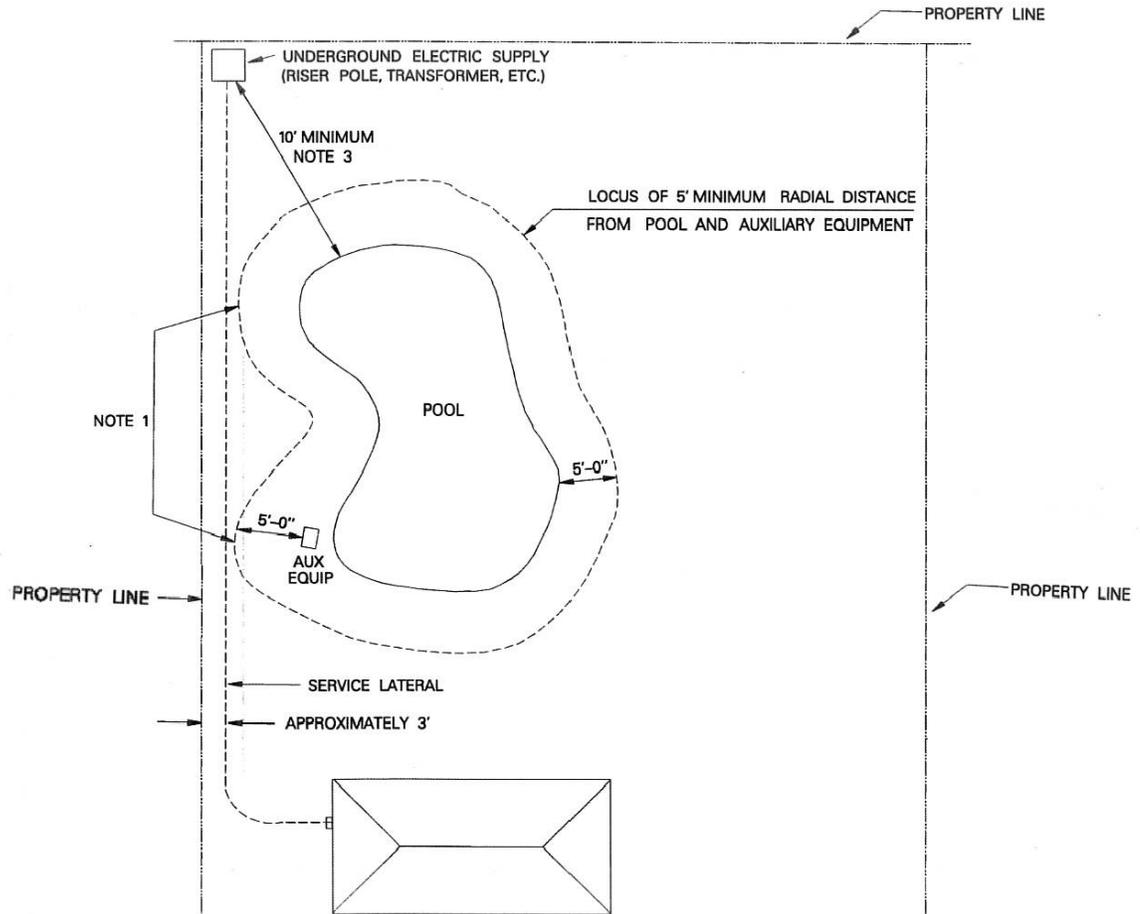
CLEARANCE OF SWIMMING POOLS FROM OVERHEAD FACILITIES

The table above contains clearance values based upon the requirements of the National Electrical Safety Code with allowances for worst case conditions. Actual clearance requirements vary with conductor size and type, ambient air temperature, and other factors. The values shown in the table are meant to be a guideline. **When clearances are less than indicated in the table, the Customer should contact Company for exact requirements based on field conditions.**

Please Note: The installation of a pool beneath overhead facilities should always be avoided.

CLEARANCE OF SWIMMING POOLS FROM UNDERGROUND FACILITIES

FIGURE 2-C

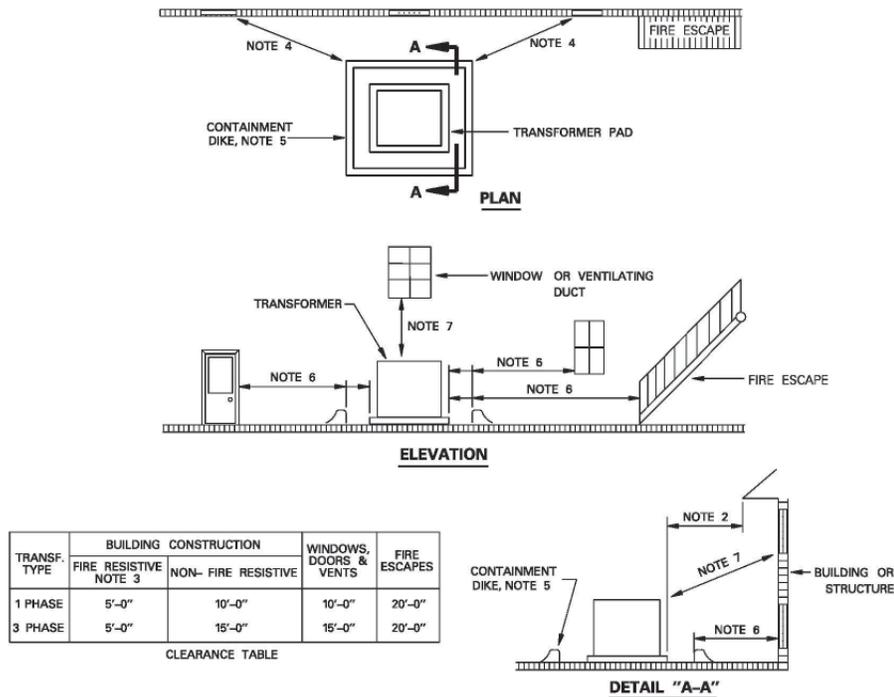


NOTES:

1. A swimming pool or its auxiliary equipment or water pipes shall not be installed within 5 ft. of direct-buried service lateral cables.
2. Where a swimming pool must be installed within 5 ft. of existing direct-buried service lateral cables, the service lateral cables shall be installed in continuous conduit from the service connection point to the meter.
3. Conduits installed for Company conductors shall be a minimum of 2 ft. from the water's edge of the swimming pool. This distance applies to new pool site conduits and to the re-routing of existing electric service laterals.
4. The swimming pool auxiliary equipment conduits, conductors, water pipes, or customer owned facilities may not be installed in the same trench as the Company service lateral.
5. Padmounted equipment shall be located 10 ft. or more from the water's edge.
6. Local requirements may require greater clearances.
7. For swimming pool clearances to overhead facilities, see Figure 2-B, page 13.
8. For additional information related to electric service laterals and swimming pools see document DDS1PR at Oncor.com.

CLEARANCES OF PADMOUNTED TRANSFORMERS FROM BUILDING

FIGURE 2-D

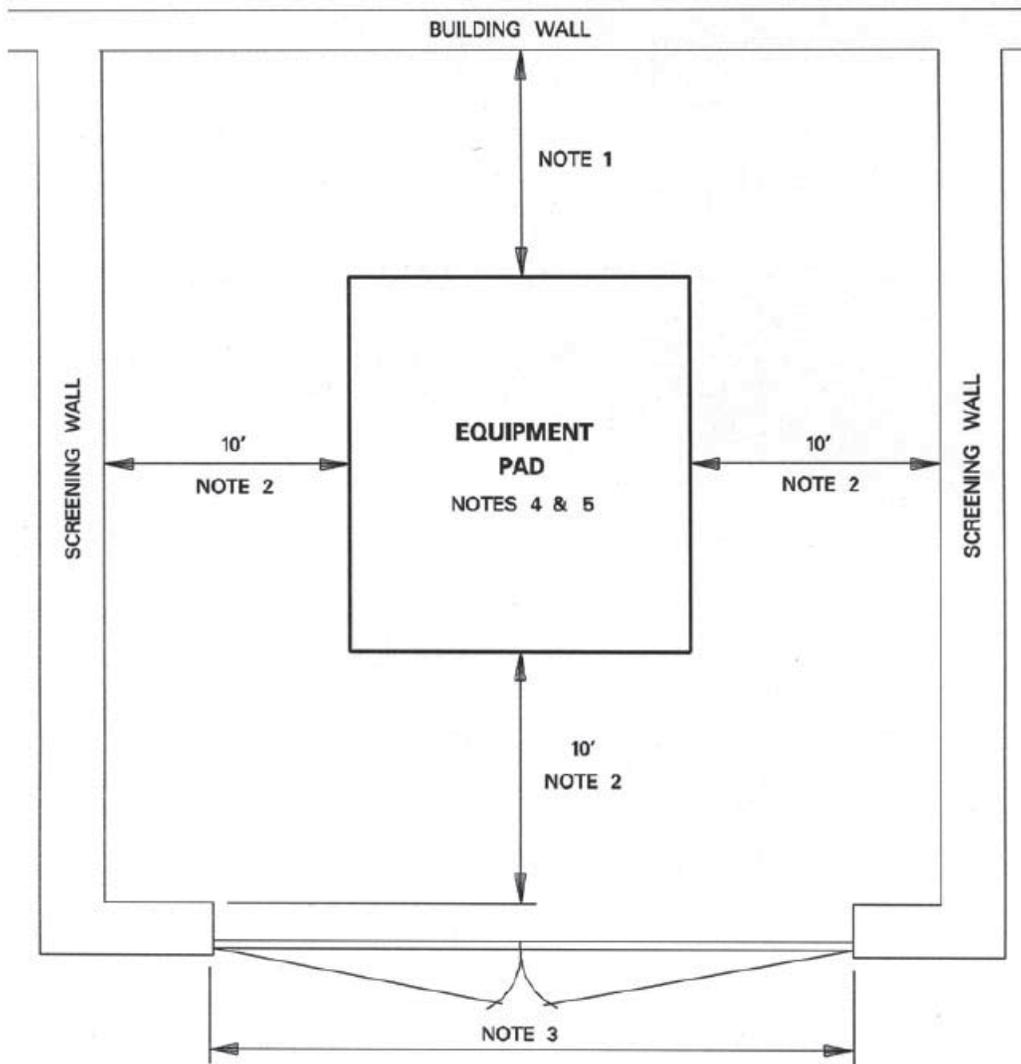


NOTES:

1. Clearance from building walls shall comply with the clearance table. All dimensions are minimal dimensions.
2. Where there are building eaves or overhangs within 25'-0" above ground, clearance shall be measured horizontally beginning from the edge of the eave or overhang.
3. Fire resistive building walls include brick and masonry structures that have a 2 hour fire rating.
4. Clearance to building doors, windows, vents and fire escapes to be measured radially.
5. Liquid flow in area surrounding transformer should be away from building. Where ground is flat or slopes toward building, a dike sufficient to contain all transformer oil for transformers 500 KVA and larger shall be provided. See Company for other oil containment options.
6. Clearances are measured from pad edge to building wall, opening, overhang or fire escape unless a containment dike is utilized. If a containment dike is utilized, clearance is measured from the dike.
7. Clearances from windows and vents above transformer are measured radially from closest point on transformer.
8. Padmounted transformers shall be positioned such that hotstick use is not required on the side facing the building. If hotstick use is required on the building side, clearances shown in Figure 2E, page 16 shall be maintained.
9. There should not be any above ground obstructions, such as shrubs, cooling towers, gas meters, fencing, etc. within 5'-0" of pad or overhangs above pad facilities. Reference Figure 2-E, page 16 for screening clearances around padmounted equipment.
10. There should not be any piping or conduit under the pad. (Exception: Mutually agreed upon communication conduits other than those entering the transformer).
11. Transformers shall not obstruct fire lane.
12. It is the owner's responsibility to comply with any insurance regulations affecting the premises.

SCREENING CLEARANCES AROUND PADMOUNTED EQUIPMENT

FIGURE 2-E



NOTES:

- Clearances to building walls shall be the greater of:
 - The clearances listed in Figure 2-D, page 15 for oil filled equipment,
 - 10 ft. if hotstick use is required on this side of equipment, or
 - 5 ft. if hotstick use is not required on this side of equipment. Contact Company for determination of hotstick usage.
- A minimum of 5 ft. clearance is allowed if hotstick use is not required at this location.
- Gate shall open outward and the width shall be no less than 10 ft.
- Where ground is flat or slopes toward building, a dike sufficient to contain all oil for transformers 500 kVA and larger shall be provided. Contact Company for details. See Company for other oil containment options.
- When transformers are installed, screening walls shall provide adequate ventilation.

SECTION 300

OVERHEAD SERVICE

- 300.01 General**
Company provides, installs, and maintains service drop to point of delivery approved by Company. Customer provides point of attachment which is acceptable to Company so that service drop meets requirements of all applicable codes.
- 300.02 Typical Permanent Service Drop**
See Figure 3-A, page 19.
- 300.03 Overhead Service Attachments**
See Figure 3-B, page 20.
- 300.04 Maximum Service Drop Length for Residential Services**
See Table 3-C, page 21.
- 300.05 Overhead Service, with Service Mast**
See Figure 3-D, page 22.
- 300.06 Overhead Service, Permanent Meter Pole**
See Figure 3-E, page 23.
- 300.07 Overhead Service, Wall Mount Meter**
See Figure 3-F, page 24.
- 300.08 Overhead Service, Two or Three Secondary Service Meters**
See Figure 3-G, page 25.
- 300.09 Overhead Service, Four or More Secondary Service Meters**
See Figure 3-H, page 26.
- 300.10 Overhead Service, Three-Wire Delta**
See Figure 3-I, page 27.

OVERHEAD SERVICE (cont'd)

300.11 Overhead Service to Mobile or Manufactured Homes

Overhead service to a mobile home shall be made in a manner as depicted in Figure 3-E, page 23 with a permanent meter pole. The meter socket shall not be mounted directly to the mobile home. Manufactured homes, if equipped with factory installed service equipment, may be connected directly if all three of the following requirements are met.

- 1) The manufactured home is secured to a permanent foundation by an approved anchoring system. Compliance with this requirement may be evidenced with one of the following:
 - a) The manufactured home structure is included in the real property deed
 - b) The foundation and anchoring system is designed by a Texas licensed engineer or Texas licensed architect, or
 - c) An affidavit from a home inspector is provided verifying that the foundation and anchoring system meets the Texas Administrative Code foundation and anchoring requirements for Manufactured Housing (TAC Title 10, Part 1, Chapter 80).
- 2) The service equipment complies with Article 230 of the National Electrical Code (NEC).
- 3) Bonding and grounding comply with Article 250 of the NEC. Manufactured home installations that meet the above requirements may be served as depicted in Figure 3-D, page 22. Service mast shall be of sufficient strength to support service drop. Contact Company prior to installation of mobile or manufactured homes to determine service method.

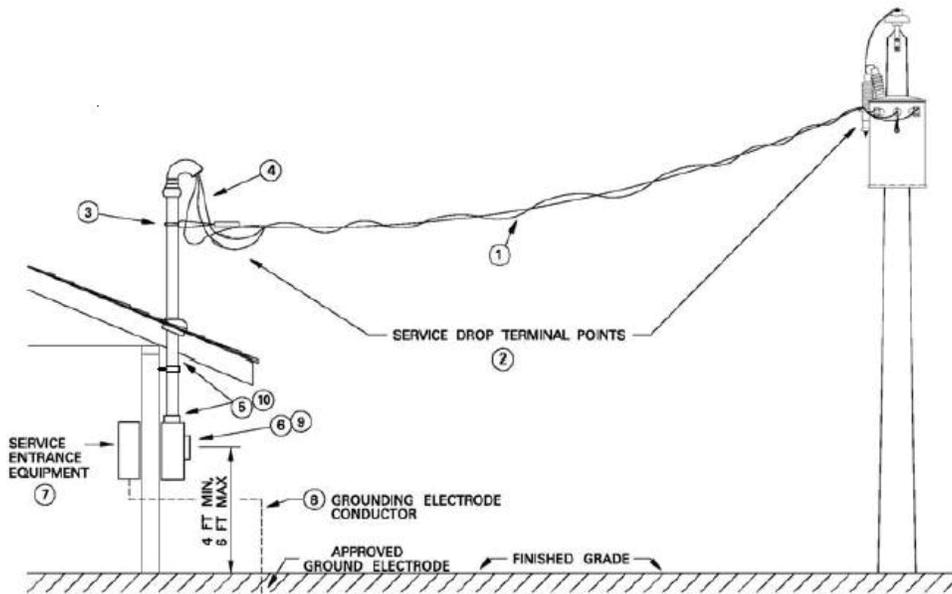
300.12 Other Overhead Services

For any situation that is not addressed, please contact Company for specific instructions.

Note: For temporary overhead service, see Section 600, page 57 and Figure 6-A, page 58.

TYPICAL PERMANENT OVERHEAD SERVICE DROP

FIGURE 3-A

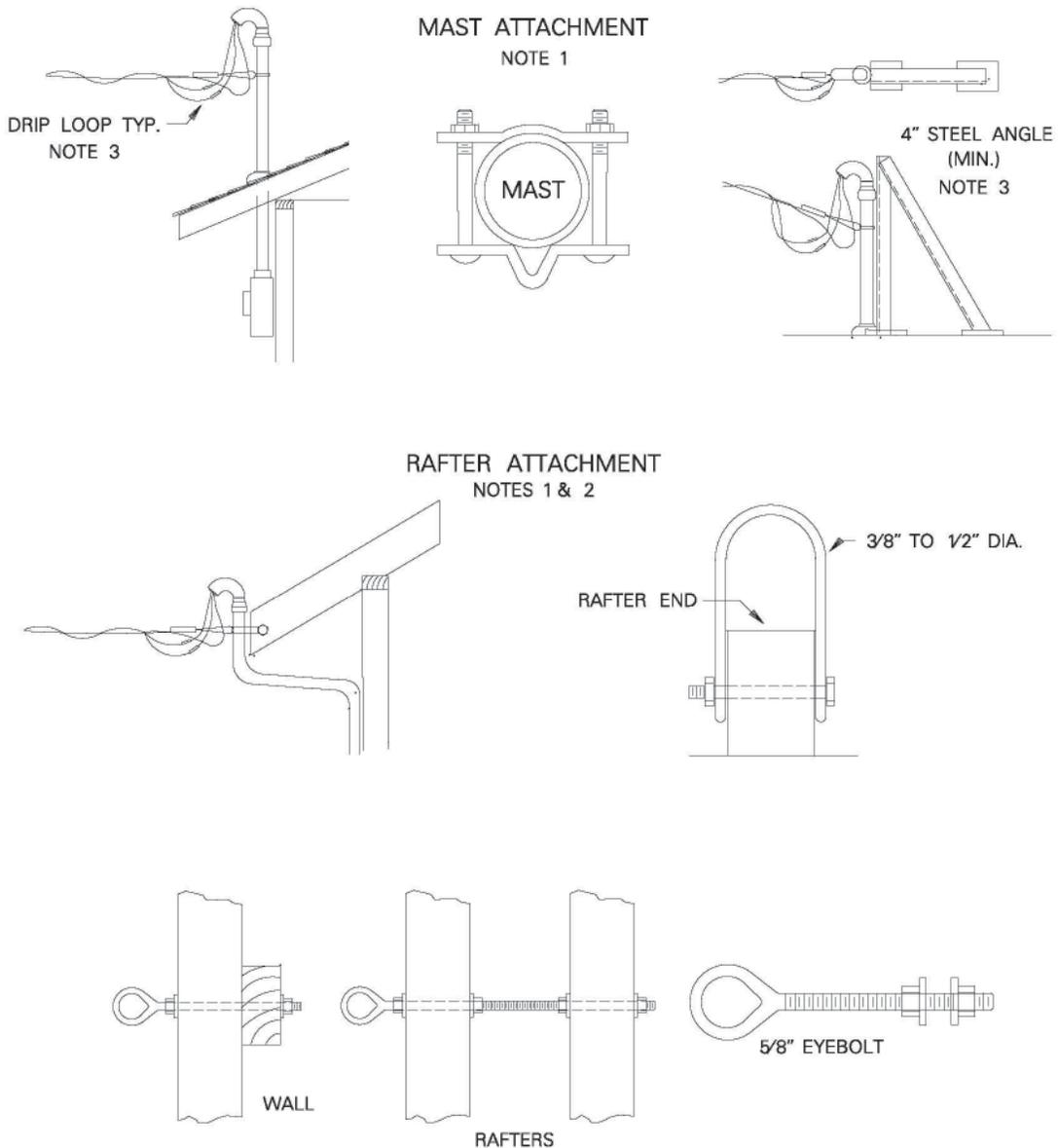


NOTES:

1. Service drop (conductors, service grips and service connectors) owned, installed and connected to service entrance conductors by Company.
2. See Table 3-C, page 21 for maximum length of residential service drop. For all other services contact Company for maximum service lengths. Reduced distance or higher attachment point may be required for large service or to maintain minimum clearances.
3. Customer installs service drop attachment of adequate strength for attachment of Company's service drop conductors. See Figure 3-B, page 20.
4. Service entrance conductors (minimum # 8 Cu or # 6 Al) provided and installed by Customer, shall extend 24" or the minimum length required by local ordinance outside the service head for connection to service drop. Phase conductors to have black insulation. Neutral conductor to be marked white or bare.
5. Service raceway and service entrance conductors to be owned, maintained, and installed by Customer.
6. Meter socket shall be provided, installed and maintained by Customer. Mounting height to Center is 4 ft. minimum and 6 ft. maximum, as measured from finished grade. See Table 5-C, pages 43-46 for list of approved meter sockets.
7. Customer's installation to meet the requirements of all applicable codes and local ordinances.
8. Customer's grounding electrode conductor (#6 Cu minimum) shall originate in the service entrance equipment and extend to an approved ground electrode. The grounding electrode conductor is permitted to be routed through the meter socket enclosure, but shall not terminate within. Company reserves the right to refuse installation of service upon observing an unsafe Customer connection.
9. Insulated conduit bushings are required for raceways terminating in the meter socket.
10. The use of flexible metallic conduit, liquid-tight flexible metallic conduit, and liquid-tight flexible non-metallic conduit for service entrance raceway is prohibited, unless approved by the local inspecting authority.
11. For 3-wire delta services, see Figure 3-I, page 27.

OVERHEAD SERVICE ATTACHMENTS

FIGURE 3-B



NOTES:

1. Customer provides and installs service drop attachment of adequate strength for attachment of Company's service drop conductors.
2. Screw-in type service attachments are not allowed.
3. Service mast supporting service drop to be minimum 2 in. rigid steel or 2 1/2 in. IMC conduit with no coupling above top conduit clamp. EMT is not acceptable for service mast.
4. See Figure 3-I, page 27 for 3-wire delta services.

MAXIMUM OVERHEAD SERVICE DROP LENGTH FOR RESIDENTIAL SERVICES
TABLE 3-C

FOR # 2 AL TRIPLEX SERVICE CABLE (Note 2)

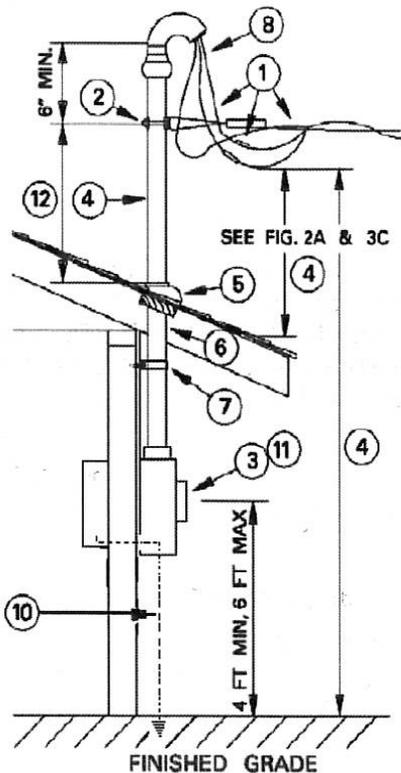
MINIMUM GROUND CLEARANCE REQUIRED (ft.)	Minimum Attachment Height and Maximum Length of Service Drop		
10 (Note 3)	ATTACHMENT HEIGHT (ft.)		
	12	11	10.5 (Notes 3 & 5)
	100 max length	95 max length	85 max length
12	ATTACHMENT HEIGHT (ft.)		
	14	13	12
	95 max length	85 max length	65 max length
16	ATTACHMENT HEIGHT (ft.)		
	18	17	16
	80 max length	70 max length	45 max length

NOTES:

1. See Figure 2-A, page 12 for required clearance for single-phase 120/240 volt service drop.
2. Distances based on #2 Al triplex service drop. Contact Company for requirements on larger or longer services.
3. Prior approval by Company is required before the exceptions on Figure 2-A, page 12 may be considered.
4. Contact Company regarding commercial services or any service over 100 ft. in length.
5. Attachment height of 10.5 ft. is based on 6 in. allowance of drip loop below attachment point and the drip loop maintaining 10 ft. clearance requirement.

OVERHEAD SERVICE MAST

FIGURE 3-D

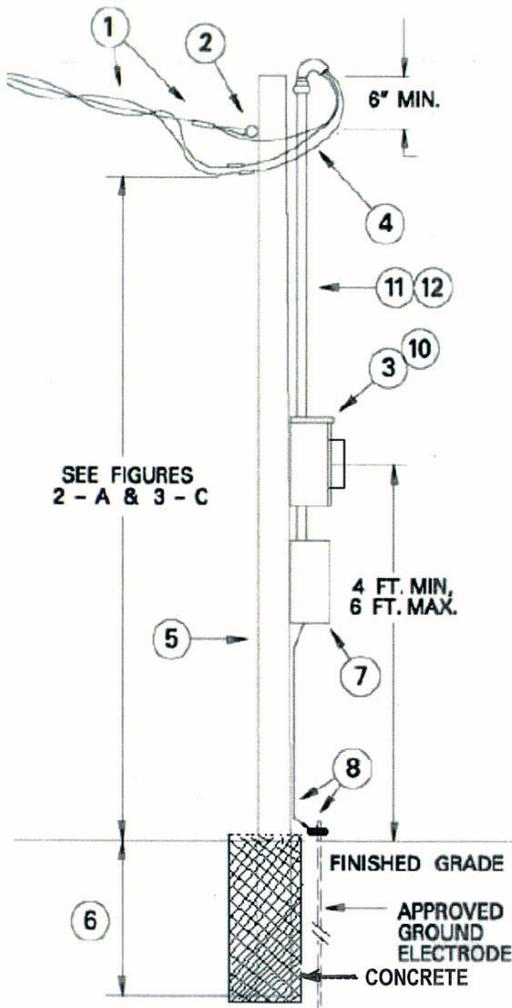


NOTES:

1. Service drop provided and installed by Company.
2. Customer installs service drop attachment of adequate strength for attachment of Company's service drop conductors. See Figure 3-B, page 20.
3. Meter socket shall be provided, installed and maintained by Customer. Transockets, when required, shall be provided by Company and installed and maintained by Customer. Socket must be securely anchored to wall.
4. Service mast shall be of sufficient height for the service drop to meet minimum clearances (see Figure 2-A, page 12). A 2" rigid steel or 2 1/2" IMC conduit minimum with no coupling above top conduit clamp is required. EMT is not acceptable for service mast. Service mast to be of sufficient strength to support service drop.
5. Mast roof kit installed by Customer.
6. Install a 2" x 6" between rafters to reinforce roof decking for additional mast support.
7. Install a conduit hanger above meter socket for mast support.
8. Service entrance conductors (minimum #8 Cu or #6 Al) provided and installed by Customer, shall extend 24" or the minimum length required by local ordinance outside of service head for connection to Company service drop. Phase conductors to have black insulation. Neutral conductor to be marked white or bare.
9. Customer's installation to meet requirements of all applicable codes and local ordinances. Typical single phase service shown here, for three phase see Figure 3-F, page 24.
10. Customer's grounding electrode conductor, #6 Cu minimum shall originate in the service entrance equipment and extend to an approved ground electrode. The grounding electrode conductor is permitted to be routed through the meter socket enclosure, but shall not terminate within. Company reserves the right to refuse installation of service upon observing an unsafe Customer connection.
11. Insulated conduit bushings are required for raceways terminating in the meter socket. See Table 5-C, pages 43-46 for list of approved meter sockets.
12. Customer shall install additional mast support (guying or other suitable support) to support the tension of the service drop cable if the service drop attachment (Note 2) is more than 5 ft. above the roof line.
13. The use of flexible metallic conduit, liquid tight flexible metallic conduit, and liquid tight flexible non-metallic conduit for service entrance raceway is prohibited, unless approved by the local inspecting authority.
14. See Figure 3-I, page 27 for 3-wire delta services.

OVERHEAD SERVICE, PERMANENT METER POLE

FIGURE 3-E



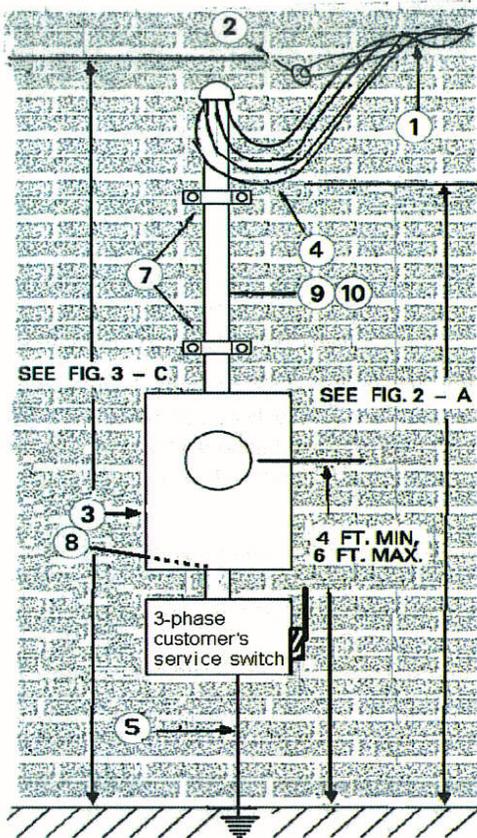
NOTES:

1. Service drop provided and installed by Company.
2. Customer installs service drop attachment of adequate strength for attachment of Company's service drop conductors. See Figure 3-B, page 20.
3. Meter socket shall be provided, installed and maintained by Customer. Transockets, when required, shall be provided by Company and installed and maintained by Customer. Socket must be securely anchored.
4. Service entrance conductors (minimum #8 Cu or #6 Al) and service raceway provided and installed by Customer, shall extend 24" or the minimum length required by local ordinance outside service head for connection to Company service drop. Phase conductors to have black insulation. Neutral conductor to be marked white or bare. Customer will bond 480 volt neutral conductor to all metal service entrance raceways.
5. Customer to provide and install support for service attachment and meter socket. Creosote pole, or equal to be 5" minimum diameter at top. Steel pipe to be 4.5" minimum outside diameter and a minimum thickness of 0.237". Steel tube to be 4" square and a minimum thickness of 0.25". Support to be sufficient height for the service drop to meet minimum clearances. See Figure 2-A, page 12.
6. Wood pole to be set in 4 Ft. of concrete where soil conditions are less than rock. Steel pipe or tube to be set in 4 Ft. of concrete. Pole foam back-fill may be used, if approved by Company.
7. Weatherproof service switch or breaker panel is required for all permanent meter pole installations and is provided and installed by Customer.
8. Customer's grounding electrode conductor, #6 Cu minimum shall originate in the service entrance equipment and extend to an approved ground electrode. The grounding electrode conductor is permitted to be routed through the meter socket enclosure, but shall not terminate within. Company reserves the right to refuse installation of service upon observing an unsafe Customer connection.
9. Customer's installation to meet the requirements of all applicable codes and local ordinances.
10. Insulated conduit bushings are required for raceways terminating in the meter socket. See Table 5-C, pages 43-46 for list of approved meter sockets.
11. The use of flexible metallic conduit, liquid tight flexible metallic conduit, and liquid tight flexible non-metallic conduit for service entrance raceway is prohibited unless approved by the local inspecting authority. The service raceway may not contain any LB or other open connections.
12. The use of Schedule 40 or 80 PVC for service mast not supporting service drop is allowed unless prohibited by the local inspecting authority.
13. For overhead service to mobile homes, see 300.11, page 18.
14. **For 3-wire delta services, see Figure 3-I, page 27.**

OVERHEAD SECONDARY SERVICE, WALL MOUNTED METER

NON-RESIDENTIAL-SINGLE OCCUPANCY STRUCTURES

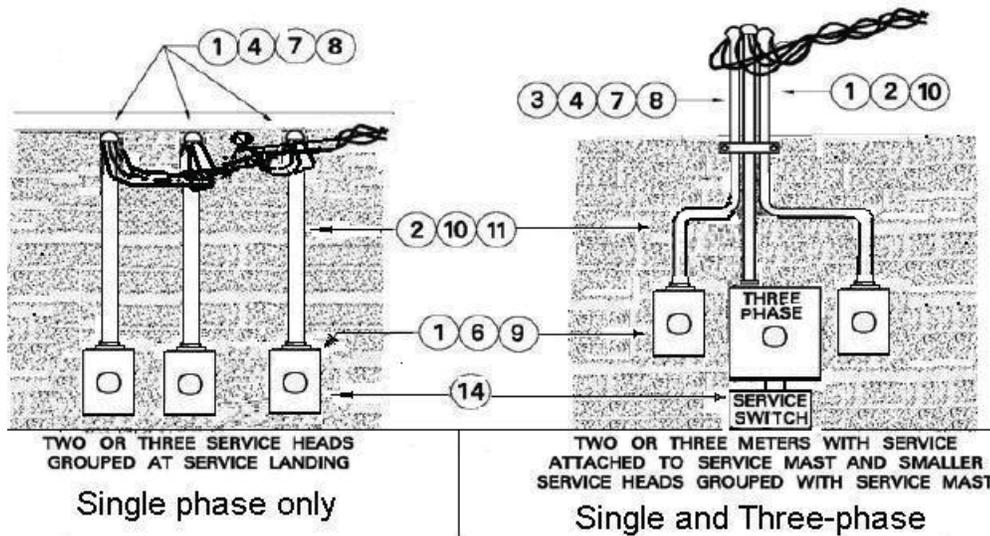
FIGURE 3-F



NOTES:

1. Service drop provided and installed by Company.
2. Customer installs service drop attachment of adequate strength for attachment of Company's service drop conductors. See Figure 3-B, page 20.
3. Meter socket shall be provided, installed and maintained by Customer. Transockets, when required, shall be provided by Company and installed and maintained by Customer. Socket must be securely anchored to wall.
4. Service entrance conductors (minimum #8 Cu or #6 Al) and service raceway provided and installed by Customer, shall extend 24" or the minimum length required by local ordinance outside service head for connection to service drop. Phase conductors to have black insulation. Neutral conductor to be marked white or bare.
5. Customer's grounding electrode conductor (#6 Cu min.) shall originate in the service entrance equipment and extend to an approved grounding electrode. The grounding electrode conductor is permitted to be routed through the meter socket enclosure, but shall not terminate within. Company reserves the right to refuse installation of service upon observing an unsafe Customer connection.
6. Customer's installation to meet all requirements of all applicable codes and local ordinances.
7. Two or more conduit straps shall be provided to support conduit. Socket must be securely anchored to wall. The service raceway may not contain any LB or other open connections.
8. Insulated conduit bushings are required for raceways terminating in meter socket.
9. The use of flexible metallic conduit, liquid tight flexible metallic conduit, and liquid tight flexible non-metallic conduit for service entrance raceway is prohibited, unless approved by the local inspecting authority. The service raceway may not contain any LB or other open connections.
10. The use of Schedule 40 or 80 PVC for service mast not supporting service drop is allowed unless prohibited by the local inspecting authority.
11. **Not for 3-wire delta services**, see Figure 3-I, page 27.
12. If an existing single-occupancy structure customer requests that one or more additional three-phase meters be installed to convert to a multi-metered structure, then the customer must install a disconnecting means on the load side of each existing three-phase meter installation on the structure and on each newly installed three-phase meter installation, unless prohibited by local governing authority.
13. Any new three-phase service to a non-residential structure must be equipped with a disconnecting means installed on the load-side of the three-phase metering equipment where the metering equipment is installed on a customer structure, unless prohibited by local governing authority.
14. Single-phase services that utilize transockets for the metering equipment require a disconnecting means to be installed on the load side of the transocket. See Figure 5-D, pages 47-49 for instrument rated/transocket details.
15. Service disconnect switches and breakers are both acceptable for use as the disconnecting means. The disconnecting means must have provision for a Company lock. The disconnecting means must be readily accessible by Company and within close proximity of the meter. A 4 in. minimum clearance from the service disconnect switch operating lever is required. Customer must receive Company approval of electrical design and/or nonstandard equipment or locations prior to installation of equipment.

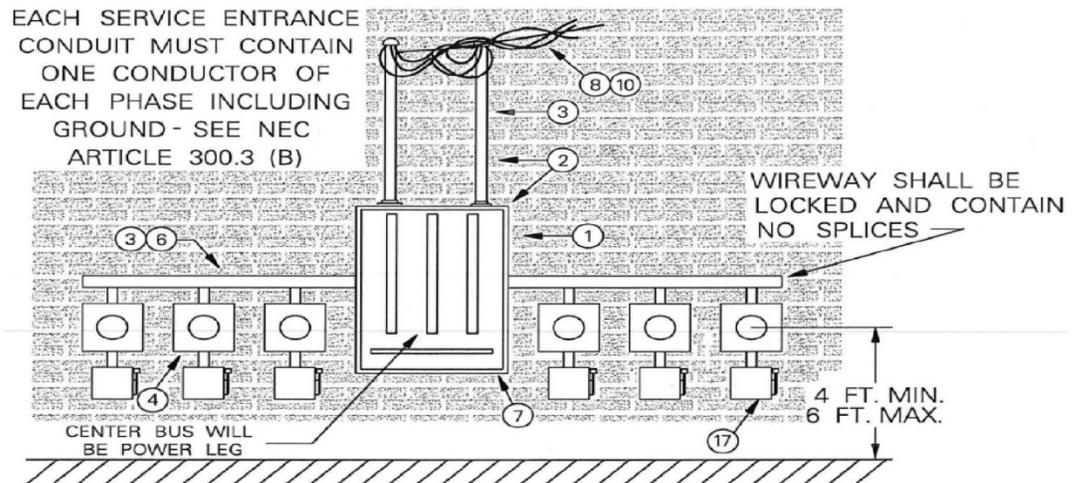
OVERHEAD TWO OR THREE SECONDARY SERVICE NON-RESIDENTIAL METERS FIGURE 3-G



NOTES:

1. Meter sockets shall be provided, installed and maintained by the Customer. Transockets, when required, shall be provided by Company and installed and maintained by Customer. Sockets must be securely attached to wall. See 500.11, page 36 for marking sockets and 500.04 for installation location. Customer installs service drop attachment of adequate strength for attachment of Company's service drop conductors. See Figure 3-B, page 20. Service landing must meet service drop clearances required per Figure 2-A, page 12. For Duplex and other multifamily installations, see Figure 5-F, page 51.
2. Service head, service raceway and service entrance conductors provided, installed and maintained by Customer. The service raceway may not contain any LB or other open connections.
3. Two inch rigid steel conduit minimum, for service mast supporting service drop. No coupling in the mast may be at or above the roof line. Service mast shall be of sufficient strength to support the service conductors.
4. Service entrance conductors to extend from weatherhead to service landing, but in no case less than 36 in. minimum. Service head shall be located within 3 ft. of service landing attachment.
5. It is Customer's responsibility to meet requirements of all applicable codes and ordinances.
6. For 240 volt four wire delta services, the "power leg" must be connected to the right-hand terminals in meter sockets and be identified by orange insulation or painted orange at the weatherhead and in meter sockets.
7. Service heads must be grouped for service drop.
8. No more than three meter sockets (with a maximum of six service masts total) will be served in this manner. See Figure 3-H, page 26 for installations exceeding these requirements.
9. Insulated conduit bushings are required for raceways terminating in the meter base.
10. The use of flexible metallic conduit, liquid tight flexible metallic conduit, and liquid tight flexible non-metallic conduit for service entrance raceway is prohibited unless approved by the local inspecting authority.
11. Schedule 40 or 80 PVC for service mast not supporting service drop is allowed unless prohibited by local inspecting authority.
12. Each socket must be clearly and permanently marked as indicated in 500.11, page 40.
13. ~~Not for 3 wire delta services. See Figure 3-I, page 27.~~ **Not for 3 wire delta services. See Figure 3-I, page 27.** must be equipped with a disconnecting means installed on the load-side of the three-phase metering equipment where the metering equipment is installed on a customer structure, unless prohibited by local governing authority
15. Service disconnect switches and breakers are both acceptable for use as the disconnecting means. The disconnecting means must have provision for a Company lock. The disconnecting means must be readily accessible by Company and within close proximity of the meter. A 4 in. minimum clearance from the service disconnect switch operating lever is required. Customer must receive Company approval of electrical design and/or nonstandard equipment or locations prior to installation of equipment.

OVERHEAD SERVICE, FOUR OR MORE SECONDARY SERVICE NON-RESIDENTIAL METERS FIGURE 3-H

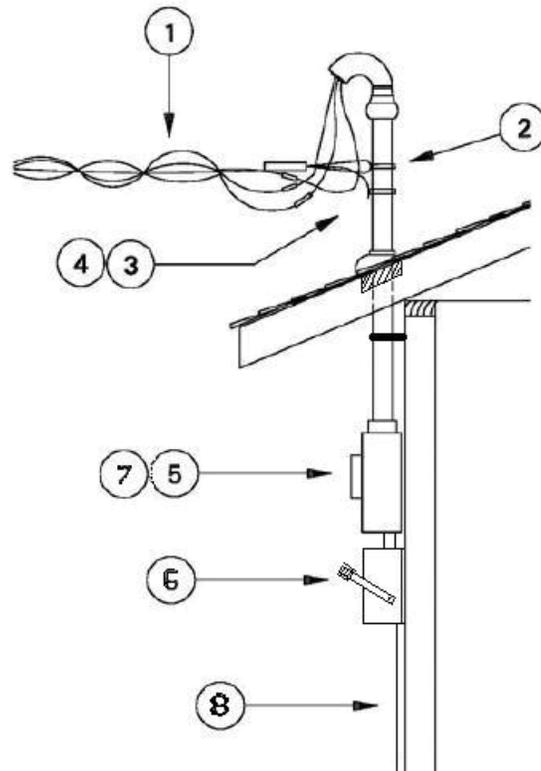


NOTES:

1. A service enclosure (see 500.08, page 40) installed by Customer on outside wall of building, is required for Secondary Service installations through 2500 amperes with four or more meter sockets. See Figure 3-G, page 25 for installations of less than four meter sockets. Contact Company for determination of service enclosure requirements. For multifamily installations, see Figure 5-F, page 51. **Not for 3 wire delta services. See Figure 3-I, page 27**
2. Service head, service raceway and main service entrance conductors provided, installed and maintained by Customer. The service raceway may not contain any LB or other open connections. Line-side conductors from weatherheads are to contact the center of bus bars. Load conductors to meter sockets to be connected equally on both ends of bus bars to obtain full current rating.
3. Conductors and raceways provided, installed and maintained by Customer.
4. Meter sockets shall be provided, installed and maintained by Customer. Transockets, when required, shall be provided by Company and installed and maintained by Customer. See Figure 5-D, pages 47-49 for instrument rated/transocket details.
5. For use on service voltages through 480V.
6. Service entrance conductors to be continuous from meter sockets to service enclosure. Service enclosure, meter socket and wireways shall be locked.
7. Customer provides all connectors and makes all connections in the enclosure. Approved connectors, plated 3/8 in. minimum diameter bolts, Belleville washers, and oxide inhibitor are required for connections to plated aluminum bus.
8. See Figure 2-A, page 12 for service drop clearances.
9. Service switches, when installed near the service enclosure, should not interfere with service to an occupancy.
10. Service entrance conductors to extend from weatherhead to service landing, but in no case less than 36 in. minimum. Service head(s) shall be located within 3 ft. of service landing attachment. No more than six service masts allowed without prior Company approval.
11. Customer installs service drop attachment of adequate strength for Company's service drop conductors. See Figure 3-B, page 20.
12. Insulated conduit bushings are required for raceways terminating in the meter base.
13. The use of flexible metallic conduit, liquid tight flexible metallic conduit, and liquid tight flexible non-metallic conduit for service entrance raceway is prohibited unless approved by the local inspecting authority.
14. Each socket must be clearly and permanently marked as indicated in 500.11, page 40, before a meter can be set or installed.
15. The use of Schedule 40 or 80 PVC for service mast not supporting service drop is allowed unless prohibited by the local inspecting authority.
16. Three-phase service to a non-residential structure must be equipped with a disconnecting means installed on the load-side of the three-phase metering equipment where the metering equipment is installed on a customer structure, unless prohibited by local governing authority. Service disconnect switches and breakers are both acceptable for use as the disconnecting means. The disconnecting means must have provision for a Company lock. The disconnecting means must be readily accessible by Company and within close proximity of the meter. A 4 in. minimum clearance from the service disconnect switch operating lever is required. Customer must receive Company approval of electrical design and/or nonstandard equipment or locations prior to installation of equipment.

OVERHEAD SERVICE, THREE-WIRE DELTA

FIGURE 3-I



NOTES:

1. Service drop conductor (quadruplex) provided, installed, and connected by Company.
2. Customer installs service drop attachment of adequate strength for attachment of Company's service drop conductors. See Figure 3-B, page 20.
3. Service mast shall be of sufficient height for the service drop to meet minimum clearances (see Figure 2-A, page 12). A 2 in. rigid steel or 2-½ in. IMC conduit minimum with no coupling is required. EMT is not acceptable for service mast. Service mast to be of sufficient strength to support service drop. The service mast may not contain any LB or other open connections.
4. Customer to install conduit grounding clamp for bonding service drop messenger to service raceway. Company shall connect service messenger to the neutral at the transformer pole, ground at every intermediate pole, and connect to the conduit grounding clamp at the service raceway.
5. Meter socket enclosure and service raceways shall be connected to the grounded system conductor or to the grounding electrode conductor as per the NEC. See 500.04, pages 36 for location of meter.
6. Three-phase service to a non-residential structure must be equipped with a disconnecting means installed on the load-side of the three-phase metering equipment where the metering equipment is installed on a customer structure, unless prohibited by local governing authority. Service disconnect switches and breakers are both acceptable for use as the disconnecting means. The disconnecting means must have provision for a Company lock. The disconnecting means must be readily accessible by Company and within close proximity of the meter. A 4 in. minimum clearance from the service disconnect switch operating lever is required. Customer must receive Company approval of electrical design and/or nonstandard equipment or locations prior to installation of equipment.
7. Meter socket shall be provided, installed and maintained by Customer. See Table 5-C, pages 43-46 for list of approved meter sockets. Transockets, when required, shall be provided by Company and installed by Customer. Customer will maintain Customer connections in the transocket. Meter sockets and Transockets shall be securely mounted to the structure. The mounting height as measured to the center of meter socket is 4 ft. to 6 ft. from final grade.
8. Customer's grounding electrode conductor, #6 Cu minimum shall originate in the service entrance equipment and extend to an approved grounding electrode. The grounding electrode conductor is permitted to be routed through the meter socket enclosure, but shall not terminate within. Company reserves the right to refuse installation of service upon observing an unsafe Customer connection.

SECTION 400

UNDERGROUND SERVICE

400.01 General

Underground service is provided to Customer who meets Company requirements set out herein and pays to Company any amount due. Cash payments or other arrangements satisfactory to Company are made by Customer prior to Company's beginning construction. All underground facilities included in the cost estimates are provided, installed, owned and maintained by Company.

Where Company provides delivery service underground, Company retains the right to limit delivery service to such underground, network, and/or dual feed distribution systems.

400.02 **Underground Service Lateral for Underground Residential Customers and Non-Residential Service Customers served from Overhead Transformation**

The Company owns and maintains the service lateral conductor and raceway to the Point of Delivery, see Service Point 100.01.29, page 5. The Company installs the service lateral conductor. The Customer has the option of installing the raceway connecting the Company's distribution system to Customer's point of delivery, reference Tables 5A & 5B, pages 41 & 42. Where Customer installs or plans to install obstructions (e.g., asphalt or concrete walk, driveway, retaining wall, paved parking lot, etc.) in the path of Company's service lateral, Company will require Customer to provide and install raceway for Company's service lateral to Company specifications. Should Customer not install necessary raceway for service lateral prior to the installation of obstructions or should Customer's service route change after the installation of obstructions where no raceway exists for new service lateral location, Customer must make the necessary raceway installations prior to service lateral installations. Contact Company for details.

Customer is to establish final grade before service lateral can be installed. Any change in final grade which results in the lowering or raising of service lateral raceway or associated equipment is at the expense of the Customer. When installed by Company, service lateral will be run in a straight line. A clear path wide enough to permit passage of excavation equipment is required. It is the Customer's responsibility to clear all obstructions before service lateral installation starts. Customer is also responsible for marking or exposing any plumbing. The Company will not be responsible for damaging private plumbing.

Company owned service lateral raceways are to be located on the exterior of the building.

400.03 **Underground Services to Non-Residential Service Customers Fed from Padmounted Transformers, Handholes, or Service Pedestals for all three-phase and single-phase greater than or equal to 20 kW**

Secondary Service Customers fed from padmounted transformers, handholes, or service pedestals are to furnish, install, own and maintain the service lateral conductors including raceway(s) to the device terminals. Customer will furnish and Company will install physical connections at POD. Conductor size limits are based on equipment terminal configurations. For single-phase padmounted transformers the maximum size secondary service conductors is 500 kcmil. For Service Enclosures maximum conductor sizes refer to Typical Service Enclosures, Figure 5-E, page 50. Where fed from three-phase padmounted transformers 3-wire or 4-wire delta service is not available. For three-phase transformers and Secondary Enclosures the Customer conductor size shall be limited to 1000 kcmil. See Tables 5-A & 5-B, pages 41 & 42 for Company-Customer responsibility.

UNDERGROUND SERVICE (cont'd)

400.04 **Underground Services to Multimetered Apartments**

For apartments served single-phase, 120/240V, Company provides and installs conduit and conductors from padmounted or pole-mounted transformer to POD. Customer may provide and install conduit with approval from Company and per Company specifications. Apartments served single-phase, 120/208V, Customer provides and installs conductors and conduit from Company padmounted transformer to metering equipment located on structures. If Company transformers are pole-mounted, the Company will provide and install conduit and conductors to the POD. If the number of conductors exceeds the padmounted transformer secondary terminal limitations, the Company may require a padmounted secondary enclosure. See 100.01.30, page 5 and 500.09, page 40.

400.05 **Underground Service, Self-contained Meter Wiring**

See Figure 4-A, page 30.

400.06 **Underground Service Meter for One Residential or One Non-Residential (One Secondary) Service**

See Figure 4-B, page 31.

400.07 **Underground Service, Two or More Non-Residential Service Meters with Service Enclosure**

See Figure 4-C page 32.

400.08 **Underground Service, Two or More Non-Residential Service Meters with Meterpack**

See Figure 4-D, page 33.

400.09 **Underground Service, Meter Rack (see figure for reference to Meter Pedestal)**

See Figure 4-E, page 34.

400.10 **Underground Service to Mobile or Manufactured Homes**

Underground service to a mobile home shall be made in a manner as depicted in Figure 4-E, page 34. The meter socket shall not be mounted directly to the mobile home. Manufactured homes, if equipped with factory-installed service equipment, may be connected as depicted in Figure 4-B, page 31 if all three of the following requirements are met.

1. The manufactured home is secured to a permanent foundation by an approved anchoring system. Compliance with this requirement may be evidenced with one of the following:
 - a. the manufactured home structure is included in the real property deed,
 - b. the foundation and anchoring system is designed by a Texas licensed engineer or Texas licensed architect, or
 - c. an affidavit from a home inspector is provided verifying that the foundation and anchoring system meets the Texas Administrative Code Foundation and anchoring requirements for Manufactured Housing (TAC Title 10, Part 1, Chapter 80).
2. The service equipment complies with Article 230 of the National Electrical Code (NEC).
3. Bonding and grounding comply with Article 250 of the NEC. Contact Company prior to installation of mobile or manufactured homes to determine service method.

400.11 **Other Underground Services**

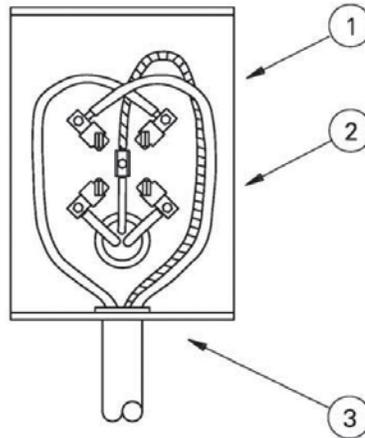
For any situation that is not addressed, please contact Company for specific instructions.

Notes:

1. For temporary underground service, see Section 600, page 57 and Figure 6-B, page 59.
2. For underground utility cable locating service - Call 811 - before you dig.

UNDERGROUND SINGLE PHASE SERVICE, SELF-CONTAINED METER WIRING, SINGLE OCCUPANCY STRUCTURES

FIGURE 4-A



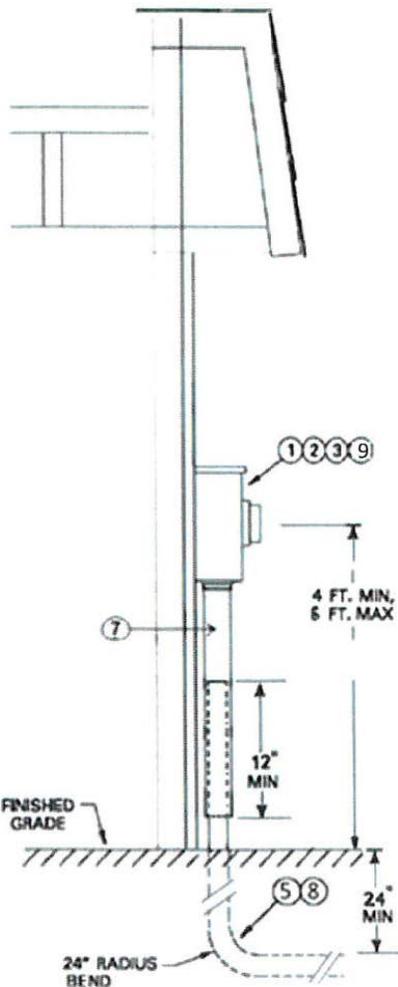
NOTES:

1. Company owned service lateral conductors are installed by Company and line-side (top) connections made up by Company. Customer's service conductors are installed and connected in socket by Customer. **Customer's load conductors for self-contained meter sockets may not exit top half of meter socket enclosure.**
2. Meter socket shall be provided, installed, and maintained by the customer. See Table 5-C, pages 43-46 for list of approved meter sockets.
3. An insulated conduit bushing is required for raceways terminating in the meter socket. The service raceway may not contain any LB or other open connections. See Figure 4-B, page 31 for oversized PVC conduit/raceway fitting details.
4. Customer's grounding electrode conductor, #6 Cu minimum shall originate in the service entrance equipment and extend to an approved ground electrode. The grounding electrode conductor is permitted to be routed through the meter socket enclosure, but shall not terminate within. Company reserves the right to refuse installation of service contingent upon inspection of Customer's grounding connections.
5. Reference 400.02, page 28 for *Company* or Customer responsibility for service lateral raceway installation. Schedule 80 PVC or Schedule 40 PVC (if permitted by local code) is required for underground service lateral raceway. **Rigid steel, IMC, or EMC is not allowed.**
6. The use of flexible metallic conduit, liquid tight flexible metallic conduit, and liquid tight flexible non-metallic conduit for service entrance raceway is prohibited, unless approved by the local inspecting authority.
7. Company service lateral conductors must enter from the **BOTTOM** of the meter socket, not from the side and not from the top.
8. Customer to provide and install an oversized PVC conduit/raceway fitting that slips over the service lateral conduit. This fitting prevents exposure of conductors due to conduit/raceway movement due to soil expansion and contraction. Conduit inserted a minimum of 12 in. into the fitting. See Figure 4-B, page 31 for illustration. Approved oversized PVC conduit/raceway fitting manufacturers and part numbers:

Conduit size	MFR	MFR #
2"	Carlon	E954JXX
2"	Cantex	5144028
2"	Heritage	610407
3"	Carlon	E954LXX
3"	Cantex	5144043
3"	Heritage	610409

UNDERGROUND SINGLE PHASE SERVICE METER FOR ONE RESIDENTIAL OR ONE NON-RESIDENTIAL (ONE SECONDARY) SERVICE

FIGURE 4-B



NOTES:

1. See Tables 5-A & 5-B, pages 41 & 42 for Company-Customer responsibility of source and load conductors and connection of these conductors.
2. Meter socket shall be provided, installed, and maintained by Customer. See Table 5-C, pages 43-46 for list of approved meter sockets. Transockets, when required, shall be provided by Company and installed and maintained by Customer. All meter sockets (excluding transockets) require the line-side conductors to be connected to the top meter socket terminals. **Customer load conductors may not exit top half of meter socket.**
3. An insulated conduit bushing is required for raceways terminating in the meter socket. The service raceway may not contain any LB or other open connections.
4. Customer's grounding electrode conductor, #6 Cu minimum shall originate in the service entrance equipment and extend to an approved ground electrode. The grounding electrode conductor is permitted to be routed through the meter socket enclosure, but shall not terminate within. Company reserves the right to refuse installation of service contingent upon inspection of Customer's grounding connections.
5. Reference 400.02, page 28 and 400.03, page 28 for Company or Customer responsibility for service lateral raceway installation. Schedule 80 PVC is required for Company owned underground service lateral raceways. **Rigid steel, IMC, or EMT is not allowed.** Contact Company prior to installation to determine service lateral raceway size, 2 in. is minimum.
6. The use of flexible metallic conduit, liquid tight flexible metallic conduit, and liquid tight flexible non-metallic conduit for service entrance raceway is prohibited, unless approved by the local inspecting authority.
7. Customer to provide and install an oversized PVC conduit/raceway fitting that slips over the service lateral conduit. This fitting prevents exposure of conductors due to conduit/raceway movement due to soil expansion and contraction. Conduit inserted a minimum of 12 in. into the fitting.

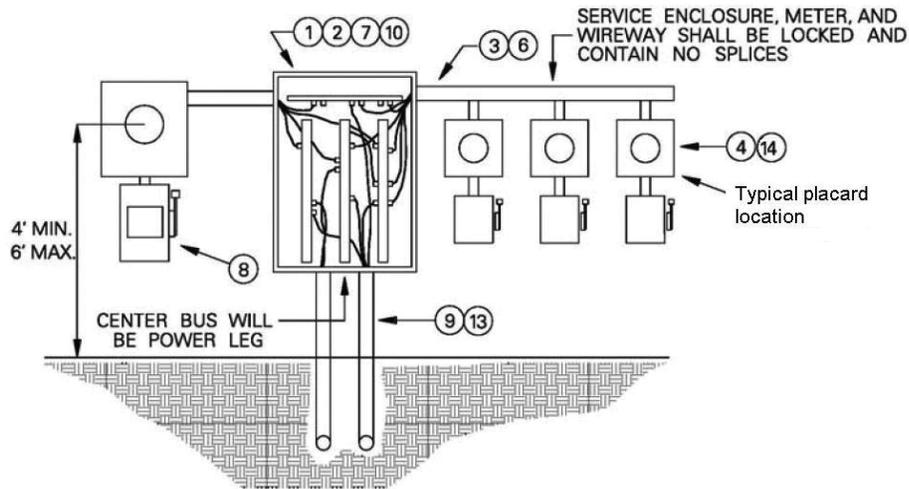
Approved PVC conduit/raceway fitting manufacturers and part numbers:

Conduit size	MFR	MFR #
2"	Carlton	E954JXX
2"	Cantex	5144028
2"	Heritage	610407
3"	Carlton	E954LXX
3"	Cantex	5144043
3"	Heritage	610409
4"	Carlton	E954NXX
4"	Cantex	5144027
4"	Heritage	610410

8. Service lateral conductor must enter from the BOTTOM of the meter socket, not from the side and not from the top.
9. Company owned service lateral conductors are installed by Company and line-side (top) connections made up by Company. Customer's service conductors are installed and connected in socket by Customer.

UNDERGROUND SERVICE METERS, TWO OR MORE NON-RESIDENTIAL WITH SERVICE ENCLOSURE

FIGURE 4-C

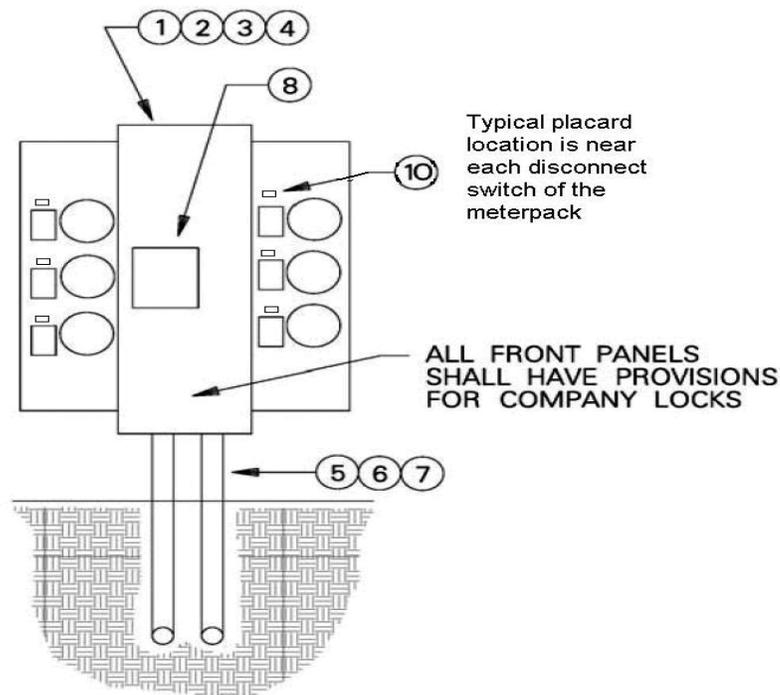


NOTES:

1. A service enclosure (see 500.08, page 40) for Secondary Service installations through 2500 amperes and two or more meter sockets are required. Service enclosure shall be installed by Customer on outside wall of building. Contact Company for determination of service enclosure requirements. For Duplex and multifamily installations, see Figure 5-F, page 51.
2. Load conductors to meter sockets to be connected equally on both ends of bus bars to obtain full current rating of bus bars. Line conductors shall be connected to center of bus bars.
3. Conductors, gutters and raceways provided, installed and maintained by Customer. Company locks or seals may be required.
4. Meter sockets shall be provided, installed and maintained by Customer. Transockets, when required, shall be provided by Company and installed by Customer. Company locks or seals will be installed at each meter socket. See Table 5-C, pages 43-46 for list of approved meter sockets.
5. For use on service voltages through 480V.
6. Service entrance conductors to be continuous from meter sockets to service enclosure.
7. Refer to Tables 5-A & 5-B, pages 41 & 42 for connector/conductor responsibility in service enclosures. Approved connectors, plated 3/8 in. minimum diameter bolts, Belleville washers, and oxide inhibitor are required for connections to plated aluminum bus.
8. Three-phase service to a non-residential structure must be equipped with a disconnecting means installed on the load-side of the three-phase metering equipment where the metering equipment is installed on a customer structure, unless prohibited by local governing authority. Service disconnect switches and breakers are both acceptable for use as the disconnecting means. The disconnecting means must have provision for a Company lock. The disconnecting means must be readily accessible by Company and within close proximity of the meter. A 4" minimum clearance from the service disconnect switch operating lever is required. Customer must receive Company approval of electrical design and/or nonstandard equipment or locations prior to installation of equipment.
9. For service lateral installation refer to 400.02, page 28. The service raceway may not contain any LB or other open connections.
10. For underground services, the bottom section of the enclosure shall be reserved for the line-side conductors. Load side conductors are not permitted to exit bottom.
11. Insulated conduit bushings are required for raceways terminating in the meter socket.
12. The use of flexible metallic conduit, liquid tight flexible metallic conduit, and liquid tight flexible non-metallic conduit for service entrance raceway is prohibited unless approved by the local inspecting authority.
13. Schedule 80 PVC is required for Company owned underground service lateral raceways. **Rigid steel, IMC, or EMT is not allowed.**
14. Each socket must be clearly and permanently marked as indicated in 500.11, page 40.

UNDERGROUND SERVICE, METERPACK

FIGURE 4-D

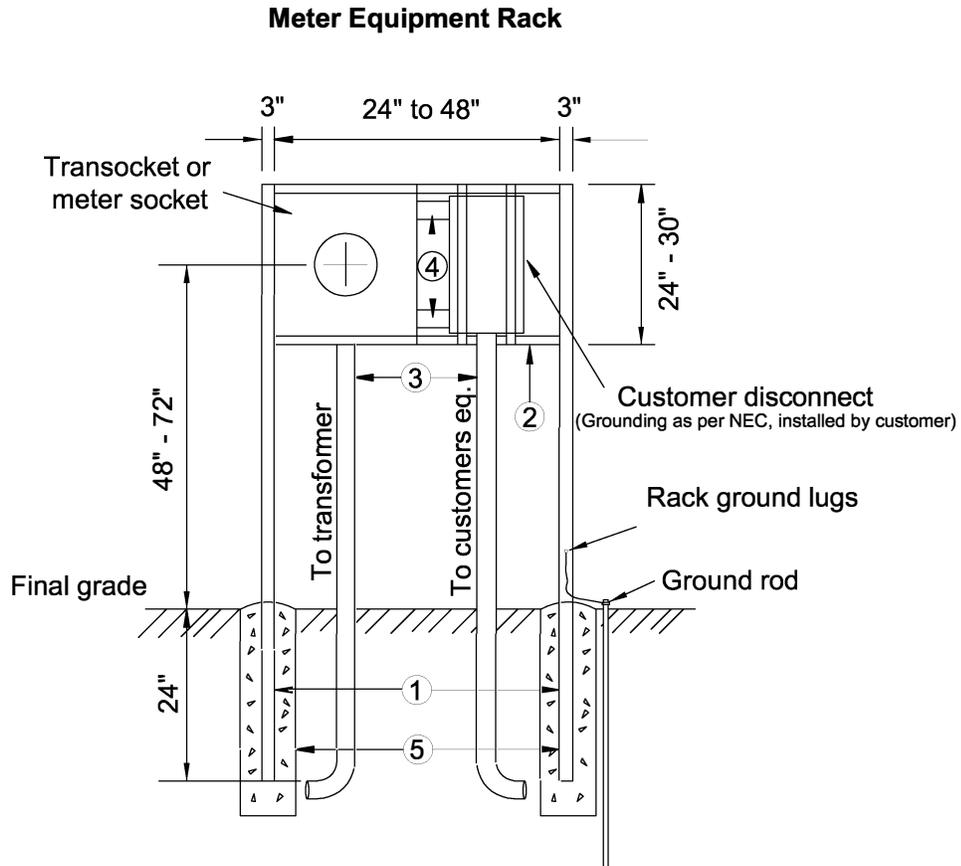


NOTES:

1. A meterpack, installed by Customer on outside wall of building for Secondary Service installations for two or more meter sockets, may be installed in lieu of a service enclosure. **Contact Company for approval of meterpacks prior to letting bids and installing equipment.** For multifamily installations, see Figure 5-F, page 51.
2. Meterpacks provided, installed, and maintained by Customer.
3. Refer to Tables 5-A & 5-B, pages 41 & 42 for connector/conductor responsibility in meterpack.
4. When utilizing meterpacks to serve Secondary Service Customers, lever-operated bypass mechanisms are required for each individual meter socket.
5. For service lateral installation refer to 400.02, page 28. The service raceway may not contain any LB or other open connections.
6. The use of flexible metallic conduit, liquid tight flexible metallic conduit, and liquid tight flexible non-metallic conduit for service entrance raceway is prohibited unless approved by the local inspecting authority. The service raceway may not contain any LB or other open connections.
7. Schedule 80 PVC is required for Company owned underground service lateral raceways. **Rigid steel, IMC, or EMT is not allowed.**
8. Meterpacks with meter stacks up to 5 meters tall will be permitted under certain conditions. Maximum mounting height is 72 in. to the center of the top meter socket. For meter stacks that have 5 vertical positions, a permanent hard surface extending a minimum of 24 in. in front of the meterpack and the width of the meterpack is required. Contact Company for details.
9. **It is the Customer's responsibility to determine local code requirements concerning meterpacks with main switches or main circuit breakers prior to installing equipment.**
10. Each socket must be clearly and permanently marked as indicated in 500.11, page 40. Apartment or Location placards may be mounted on meterpack adjacent to the tenant breaker, as an alternate mounting position. Screws and rivets are not allowed to attach placards.

UNDERGROUND SERVICE, METER RACK

FIGURE 4-E



Item	Qty	Description
1	2	Angle Iron, 3" x 3" x $\frac{1}{8}$ " x 8'-0", galv. (or unitrust)
2	2	Angle Iron, 2 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " x $\frac{3}{8}$ " x 36", galv. (or unistrut)
3	2	Conduit, Sch. 80 PVC, as required
4	1	Conduit, nipple, as required (lowered for meter socket - upper for transocket)
5		Concrete, as required

NOTES:

1. Company owned service lateral conductors are installed by Company and line-side (top) connections made up by Company. Customer service conductors are installed and connected in socket by Customer.
2. Meter socket, rack and conduit/risers provided, installed and maintained by Customer. A 4" minimum clearance from the disconnect switch operating-lever is required. See Table 5-C, pages 43-46 for list of approved meter sockets.
3. Service lateral or source conductors provided and installed as per 400.02, page 28. The service raceway to transformer (source) may not contain any LB or other open connections.
4. A 4 Ft. clearance is required from meter side of meter rack assembly to any obstruction or structure.
5. Customer service equipment may be installed on meter rack assembly in accordance with all applicable codes.
6. Customer provides, installs and maintains the grounding electrode conductor, #6 Cu minimum and connection to an approved ground electrode. Company reserves the right to refuse installation of service contingent upon observing an unsafe Customer connection.
7. Alternate Design- Customer shall obtain Company approval of any alternate design prior to installation. A Meter Pedestal is an acceptable alternate design, and it must follow Company Standard Drawing 212-305. See Company for details.

SECTION 500

METERING AND ASSOCIATED EQUIPMENT

500.01 General

Meter sockets shall be provided, installed and maintained by Customer. When the ratings of meter sockets are exceeded, transockets shall be used. Transockets, when required, shall be provided by Company and installed and maintained by Customer. See Tables 5-A & 5-B, pages 41 & 42 for conductor, connector and connection details.

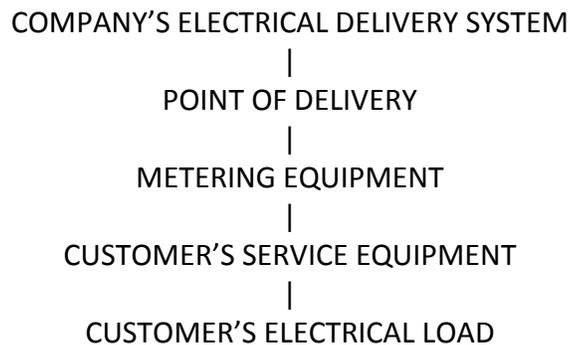
500.02 Work on Meter Installations

Only qualified electrical workers are permitted to remove meter seals and work inside meter enclosures. These qualified electrical workers must contact the Company Electrician Contact line: 1.800.518.2374 and provide information as indicated inside the front cover BEFORE removing self-contained meters and disconnecting power*. Failure to call BEFORE performing work may result in fees applied to install new Company seal(s) and to inspect Company metering equipment. See 100.04.03, page 8.

***NOTE: Only Oncor may remove 480 V self-contained meters or disconnect power to transockets. See 500.06.11, page 39.**

500.03 Sequence of Connecting Facilities

The standard sequence for connecting equipment to Company's existing delivery system facilities is as follows:



A sequence of facilities other than illustrated here may be done only with prior written approval of the Company.

METERING AND ASSOCIATED EQUIPMENT (cont'd)

500.04 Location of Meter

Consistent with good utility practice, a meter and its associated equipment shall be installed in a location that facilitates the provision of safe and reliable delivery service and accurate measurement and that provides clear working space on all sides. **The center of the socket opening shall be not less than four feet and not more than six feet above the finished grade.** All meter locations should be as near as possible to the point of delivery. The Company shall have direct, unobstructed access to all meter locations. Meter locations likely to become obstructed in the future shall be avoided. **The Company's electrical delivery system and the metering equipment shall be located outside the building.** If the Customer requires a location other than outside the building or if service conductor and conduit must pass under permanent structures, foundations or structure slabs, the Customer shall install and own the electric service conductors from a Company designated point of delivery outside of the building (either secondary transformer terminals or service enclosure) to the metering equipment location. See Tables 5-A & 5-B, page 41 & 42 for typical Point of Delivery (POD) locations. Metering equipment locations other than outside the building are nonstandard and require Company approval prior to installation of the meter. Transockets and unlicensed meter sockets are not to be installed on Company poles. This applies to both overhead and underground services. See 100.04.02, page 8. License agreements do not allow metering equipment to be installed on Company poles if licensee utilization equipment is not on the same Company pole.

500.05 Meter Work Space

Sufficient space in front of, above, below and on each side of meter sockets, service enclosures, meterpacks and transockets is necessary for work space for connecting and the reading of meters. No obstruction shall be within four feet in front of the meter. See NEC Article 110.26 for working spaces.

500.06 Meter Sockets

The Customer will provide, install, and maintain self-contained meter sockets. Transockets, when required, will be provided by Company and installed and maintained by Customer. These sockets are to be used exclusively for metering. The Company reserves the right to refuse service if the incorrect socket is installed or if the socket is not wired correctly. **Each connector provided in the meter socket is rated for a single aluminum or copper conductor. The number of Customer conductors shall not exceed the number of connectors (shall not double lug).** See Table 5-C, pages 43-46 for list of approved meter sockets. Aluminum conductors require wire brushing to remove oxide film and an application of oxide inhibitor immediately before installation. **Customer must permanently mark EACH meter socket at multimeter locations as per 500.11, page 40.**

METERING AND ASSOCIATED EQUIPMENT (cont'd)

500.06.01 **Meter Socket Ratings**

Meter sockets are specified by their continuous current rating and are designed for short term (three hours or less) overloads of 125%. Electrical panels are specified by their maximum rating and any continuous loads (three hours or more) are limited to 80% of this maximum. A 320 ampere meter socket has a continuous rating of 320 amperes and a maximum rating of 400 amperes. A 400 ampere panel has a maximum rating of 400 amperes and a continuous rating of 320 amperes. Even though these two items are referred to by different numbers, their capabilities are identical and a 320 ampere socket is adequate to serve a 400 ampere panel.

500.06.02 **Ganged Meter Socket Assemblies**

Ganged meter socket assemblies are for multi-family residential installations and are 120/240 volt, three-wire, single-phase. Each of the ganged meter socket assemblies must be clearly and permanently marked to indicate each location to be served prior to the connection of service. See 500.11, page 40. For typical dimensions, examples of layouts, and terminal configurations, refer to Table 5-C, pages 43-46 and Figure 5-F, page 51.

500.06.03 **Meterpacks**

Meterpacks for multi-family residential and Secondary Service installations will be subject to approval by Company. Where the Company owns the service lateral conductors to main circuit breaker meterpacks, Company will only connect to those main circuit breakers with external connectors and not directly to main circuit breakers. Each meter socket must be clearly and permanently marked prior to connection of service as indicated in 500.11, page 40. **Contact Company for approval of meterpacks prior to letting bids and installing equipment.** It is the Customer's responsibility to determine local code requirements concerning meterpacks with main switches or main circuit breakers prior to installing equipment. **All front panels shall have provisions for Company locks. See Figure 4-D, page 33.**

500.06.04 **Line-side (Source) Connections**

All self-contained meter sockets require the line-side conductors to be connected to the top meter socket terminals. Load-side conductors always connect to the bottom meter socket terminals and must exit below the meter through the lower sides, back or bottom. For overhead services the line-side conductors must enter from the top half of the socket. Approved sockets for underground services provide additional width to allow the line-side conductors to enter the bottom of the socket and to be routed to the top terminals. For transocket connections, see 500.06.11, page 39.

METERING AND ASSOCIATED EQUIPMENT (cont'd)

- 500.06.05 **Meter Sockets – Secondary Service Less than 200 Amperes**
200 ampere meter sockets specified for use on Secondary Service Customers are equipped with a lever operated bypass mechanism to permit installation and removal of meters without causing interruption of service. Use of this socket is primarily intended to prevent disruption of service to loads typically found in many Secondary Service accounts. However in special cases, a non-lever bypass socket (similar to Company number 301399 and 301401) may be substituted instead. **Contact Company prior to acquiring and installing meter socket. For more information see Table 5-C, pages 43-46 for list of approved meter sockets.** When utilizing meterpacks to serve Secondary Service Customers, lever operated bypass mechanisms are required for each individual meter socket. **Contact Company for approval of meterpacks prior to letting bids and installing equipment.**
- 500.06.06 **Power Leg for 240 Volt Delta Service**
The phase that is commonly called the Power Leg (“high leg”, “freak leg”, or “wild phase”) shall always be connected to the right-hand meter socket terminals including prewired transockets and shall be effectively identified in accordance with NEC 230.56 (marked by orange tape or paint). In other locations, such as service enclosures, disconnects, etc., the Power Leg is connected to the center terminal. See Figure 5-K, page 56.
- 500.06.07 **Ungrounded Delta – Meter Socket & Transocket Case Ground Requirements**
In addition to grounding requirements established by the National Electrical Code and local ordinances, the metal enclosures of meter sockets and transockets shall be connected to an eight foot auxiliary ground rod located within sight of and as close as practicable to the meter socket. These additional grounding requirements are the responsibility of the Customer. Customer must remove any ground jumpers or ground straps on center (unmetered) phase of meter socket or transocket to ensure the service remains ungrounded. See Table 5-C, pages 43-46.
- 500.06.08 **Company – Customer Responsibility**
See Tables 5-A & 5-B, pages 41 & 42.
- 500.06.09 **Meter and Socket Application Guide**
See Table 5-C, pages 43-46 or visit: oncor.com/EN/Pages/Commercial-Metering.aspx
- 500.06.10 **Meter Socket Connections and Voltages**
See Figure 5-G, page 52; Figure 5-H, page 53; Figure 5-I, page 54; Figure 5-J, page 55; and Figure 5-K, page 56 for details.

METERING AND ASSOCIATED EQUIPMENT (cont'd)

500.06.11 Transockets

When the voltage and/or current limitations of a self-contained meter socket are exceeded, the transocket is standard equipment for installations 480 volt and less (see Table 5-C, pages 43-46 for maximum socket ampacity). Transockets are not interchangeable; it is critical that the correct transocket be installed for each application. **Factory installed lugs are NOT to be replaced or removed. Damaged lugs may require replacement of Transocket (See Company for details).** Company will determine the need for a transocket and will provide the correct transocket. Customer will install transocket and maintain Customer connections in the transocket. Transocket can be wired for top or bottom feed. If service is underground, the line conductors must enter the bottom of the transocket and connect to the bottom terminals. For overhead service, the line conductors will enter the top of the transocket and connect to the top terminals. Load conductors will always exit opposite the line conductors; no conductors will be allowed to cross inside the transocket. The conductor entrance and exit location notes of Figure 5-D, page 49 must be followed. Any meter wiring modifications necessary to accommodate source location will be performed by Company prior to the meter installation. **Only Company authorized personnel may remove a meter from a transocket. See inside the front cover for more details.**

Caution: removing the meter from a transocket does not disconnect the service.

500.06.12 Transocket Configurations and Connection Details

See Figure 5-D, pages 47-49.

500.07 Instrument Transformers (IT, CT & VT)

For installations requiring instrument transformers (IT), the standard methods of metering are (1) the transocket or (2) metering at the pad transformer with the IT installed in the pad transformer. When the Customer's service requirements exceed the capacity of the transocket and metering at the pad transformer is not feasible, the preferred metering method is to use IT installed in a Company approved enclosure. Company will provide the IT and, when necessary, the enclosure. Customer may be required to install the enclosure and IT. If IT should need to be replaced, Customer may be required to install the Company provided replacement IT. Where IT's are installed in Customer owned switchgear, the Customer shall be responsible for having the switchgear manufacturer install acceptable IT's. Customer must contact Company to determine ratio, burden, and accuracy of requirements and must provide certified test reports of IT performance.

METERING AND ASSOCIATED EQUIPMENT (cont'd)

- 500.08 Service Enclosures (Distribution Can, Terminal Box, Tap Can, Connection Box)**
Company may require the use of service enclosures for certain configurations of multiple meters. Company will specify the appropriate enclosure. Use of gutters or troughs as connection enclosures is not allowed. Service enclosures will be provided by Company and installed by Customer. **All metering equipment and service switches are installed on the load side of service enclosures.** Customer will install service enclosure and maintain Customer connections in the service enclosure. Refer to definition 100.01.25, page 5. For details see: Figure 3-H, page 26; Figure 4-C, page 32; Figure 5-E & Table 5-E, pages 50 & 51; and Figure 5-F, page 52.
- 500.09 Padmounted Secondary Enclosures (Connection Enclosures: 36" x 36" x 36" see Company TSN 463082 & 54" x 54" x 54" see Company TSN 463081)**
Company shall require the use of secondary enclosures for installations where the Customer is installing a number of conduits and conductors in excess of the maximum quantity allowed for the transformer per Construction Standard 209-420. Company will specify the appropriate enclosure. Contact Company for additional design options. For reference see Tables 5-A & 5-B, pages 41 & 42 and Oncor Distribution Design Specification DDS-4 at www.oncor.com. All metering equipment and service switches are installed on the load-side of secondary enclosures. See definition 100.01.30, page 5.
- 500.10 Totalizing Multiple Points of Delivery (POD)**
Meters serving installations not considered a single point of delivery shall not be totalized.
- 500.11 Meter Socket Identification at Multimetered Locations**
Meter sockets to multi-metered locations shall be clearly and permanently marked on both the exterior and interior of the meter socket to indicate each apartment number or location served.
- Exterior:** Placards engraved or stamped, 12 gauge (2.0 mm) minimum thickness stainless steel, aluminum or brass placards shall be used on the exterior of the meter socket. Each placard shall be permanently affixed with an exterior rated adhesive to the lower front of the meter socket. Screws and rivets may not be used to attach placards to meter sockets. Placards may vary in size; the minimum is ¼ inch tall letters/numbers.
- Interior:** Permanent marker or other acceptable method shall be used to mark the apartment number or location on the inside of the meter socket (at a location other than the cover) where it can be easily read. See Figure 4-D, page 33.

COMPANY - CUSTOMER RESPONSIBILITY

TABLE 5-A

SINGLE METER SOCKET LOCATIONS					
Type of Service	Reference Figure	P.O.D. Location (Note 1)	Conductor from Source to P.O.D. Location (Note 2)	Party Providing Connectors at P.O.D. Location (Notes 3 & 4)	Party Installing Connectors at P.O.D. Location (Notes 3 & 4)
Overhead Service					
Single-Phase Secondary Service less than 20 kW or Residential	3-D, 3-E 3-F, 3-I	Service Head	Company	Company	Company
Single-Phase or Three-Phase Secondary Service greater than or equal to 20 kW	3-D, 3-E 3-F, 3-I	Service Head	Company	Company	Company
Underground Service from Overhead Secondary or Overhead Transformation					
Single-Phase Secondary Service less than 20 kW or Residential	4-B	Source Terminals of Meter Socket or Load Terminals of Transocket	Company	Customer	Customer
Single-Phase or Three-Phase Secondary Service greater than or equal to 20 kW	4-B	Source Terminals of Meter Socket or Load Terminals of Transocket	Company	Customer	Customer
Underground Service from Underground Secondary or Padmounted Transformation					
Single-Phase Secondary Service less than 20 kW or Residential	4-B	Source Terminals of Meter Socket or Load Terminals of Transocket	Company	Customer	Customer
Single-Phase or Three-Phase Secondary Service greater than or equal to 20 kW	4-B	Load-side Terminals of Secondary Enclosure	Company	Customer	Company
		Secondary Terminals of Padmounted Transformer	Company	Customer	Company
Overhead and Underground Primary Voltage Service					
Overhead Primary Service	---	Location of Primary Metering Equipment at: Dead End Insulator Attachment Point (overhead), or Cable Termination (terminal pole)	Company	Customer	Customer on Customer Conductors and Company on Company Conductors
Underground Primary Service	---	Location of Primary Metering Equipment at: Load Side Bushing (padmounted), or Cable Termination (terminal pole)	Company	Customer	Customer on Customer Conductors and Company on Company Conductors

NOTES:

1. The Point of Delivery (P.O.D.) is the point at which electric power and energy leaves the Company delivery system; see 100.01.19, page 4. P.O.D. locations other than those indicated may be designated by Company. In such cases, ownership of service conductors shall be permanently marked.
2. Customer installed raceway is permitted or required as specified in 400.02, page 28.
3. The Customer is responsible for making all physical connections on the load side of the P.O.D. All conductors and connectors on the load side of the P.O.D. are provided, installed, and maintained by the Customer. See Appendix A, (NEMA 2-hole) page 60 or Appendix B, (NEMA 1-hole) page 61 for specification of approved connectors installed in Company metering and Company connection enclosures and in Company padmounted equipment.
4. The Company shall make all physical connections at the source side terminals at the P.O.D. All connectors placed on Company conductors are to be supplied and installed by Company. Customer provides and installs terminations on Customer conductors. For Overhead Primary Metering - Company will attach the Customer conductors to Company Dead End Insulator and install jumper from Primary Metering Equipment. For Underground Padmounted Primary Metering -Customer provides and installs terminations on Customer conductors. Company attaches terminations to Company equipment and energizes the conductors.

COMPANY - CUSTOMER RESPONSIBILITY (cont'd)

TABLE 5-B

MULTIPLE METER LOCATIONS					
Type of Service	Reference Figure	P.O.D. Location (Note 1)	Conductor from Source to P.O.D. Location (Note 2)	Party Providing Connectors at P.O.D. Location (Notes 5 & 6)	Party Installing Connectors at P.O.D. Location (Notes 5 & 6)
Overhead Service					
Residential Service, 3 meters or less per Service Lateral	3-G	Service Head	Company	Company	Company
Residential Service, 4 meters or more per Service Enclosure	---	Service Head	Company	Company	Company
Residential Service, 4 meters or more per Service Enclosure	3-G, 3-H	Service Head	Company	Company	Company
Underground Service to Multi-Family Residential					
Residential, 6 meters or less without Service Enclosure	5-F	Source Terminals of Ganged Meter Socket or Meterpack (Note 3)	Company	N/A	N/A
Residential, 7 meters or more with Service Enclosure	5-F	Load Terminals of Enclosure or Source Terminals of Meterpack (Note 3)	Company	Customer	Customer
Underground Secondary (Non-Residential) Service					
Three-Phase served from Overhead Transformer or Single-Phase less than 20 kW	4-C, 4-D, 5-E	Source Terminals of Meterpack (Note 3) or Load Terminals of Service Enclosure	Company	Customer	Customer
Three-Phase service from Padmounted Transformer or served from Underground Secondary -- and/or -- Single-Phase service greater than or equal to 20 kW served from Padmounted Transformer or from Underground Secondary	4-C, 5-E	Load-side Terminals of Secondary Enclosure	Company	Customer	Company (Note 5)
	---	Secondary Terminals of Padmounted Transformer	N/A	Customer	Company (Note 6)

NOTES:

1. The Point of Delivery (P.O.D.) is the point at which electric power and energy leaves the Company delivery system; see 100.01.19, page 4. P.O.D. locations other than those indicated may be designated by Company. In such cases, ownership of service conductors shall be permanently marked.
2. Customer installed raceway is permitted or required as specified in 400.02, page 28.
3. Contact Company for approval of meterpacks prior to letting bids and installing equipment.
4. If 7 meters or more are served, a service enclosure may be used or Company may run multiple service laterals, if permitted by local code.
5. The Customer is responsible for making all physical connections on the load side of the P.O.D. All conductors and connectors on the load side of the P.O.D. are provided, installed, and maintained by the Customer. See Appendix A, (NEMA 2-hole) page 60 and Appendix B, (NEMA 1-hole) page 61 for approved connector specifications for use with metering and connection enclosures and in padmounted equipment.
6. The Company shall make all physical connections at the source side terminals at the P.O.D. All connectors placed on Company conductors are to be supplied and installed by Company.

METER AND SOCKET APPLICATION GUIDE

TABLE 5-C *

APPLICATION				METER SOCKET				MAX # CONDUCTORS MIN/MAX CONDUCTORS SIZES, TYPICAL DIMENSIONS **		
WIRES	PHASE	VOLTS	SERVICE TYPE	MAX AMPS	INSTALLATION TYPE	STOCK NO.	MANUFACTURER *		PART NUMBER	MAX HUB SIZE
2	1	120 or 240	Secondary Service or Temporary	0 - 60	Self-Contained OH Only	312720	Brooks Utility Milbank	603-3185-E AP2300-03	One 1"	Source: One #12 - #1/0 Load: One #12 - #1/0 Size: 7" Diameter (Round)
2	1	120 or 240	Residential or Secondary Service	0 - 150	Self-Contained OH Only	301399	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Talon/Siemens Square D by Schneider Electric	UT-RS502B-CH UT-RS502B UAT314-OG UT-RS502B-MEP U7262-RL SUAT314-OG UT-RS502B-SQD	One 2.75"	Source: One #2 - 250 Load: One #2 - 250 Size: 8.5" x 12.5" x 3.25" Note: 2W Service is Limited to 100 A
2	1	480	Secondary Service	0 - 200	Mini Transocket OH or UG	320797	Durham	105777A	One 3"	Source: One #6 - 250 Load: One #6 - 250 Size: 13" x 24" x 9"
3	1	120/240	Secondary Service or Temporary	0 - 60	Self-Contained OH Only	312720	Brooks Utility Milbank	603-3185-E AP2300-03	One 1"	Source: One #12 - #1/0 Load: One #12 - #1/0 Size: 7" Diameter (Round)
3	1	120/240	Residential	0 - 150	Self-Contained OH Only	301399	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Talon/Siemens Square D by Schneider Electric	UT-RS502B-CH UT-RS502B UAT314-OG UT-RS502B-MEP U7262-RL SUAT314-OG UT-RS502B-SQD	One 2.75"	Source: One #2 - 250 Load: One #2 - 250 Size: 8.5" x 12.5" x 3.25"
3	1	120/240	Secondary Service	60 - 200	Self-Contained OH or UG	312727	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Talon/Siemens Square D by Schneider Electric	UT-H4213B-CH UT-H4213B 40404-025 UT-H4213B-MEP U9801-XL 540404-025 UT-H4213B-SQD	One 2.75"	Source: One #2 - 350 Load: One #2 - 350 Size: 13" x 19" x 5" Note: Equipped with Lever Bypass
3	1	120/240	Residential	150 - 200	Self-Contained OH or UG	301401	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Talon/Siemens Square D by Schneider Electric	UT-RS212B-CH UT-RS212B UAT417-XG UT-RS212B-MEP U7040-XL SUAT417-XG UT-RS212B-SQD	One 2.75"	Source: One #2 - 250 Load: One #2 - 250 Size: 11" x 14" x 5"
3	1	120/240	Residential	0 - 200	Self-Contained OH or UG	323754	Eaton Cutler-Hammer Durham Midwest Electric Square D by Schneider Electric	UT-RS213-8B-CH UT-RS213-8B UT-RS213-8B-MEP UT-RS213-8B-SQD	One 2.75"	Source: One #1/0 - 350 Load: One #1/0 - 250 Size: 11" x 15" x 5"
3	1	120/240	Residential or Secondary Service	200 - 320	Self-Contained OH or UG	301402	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Talon/Siemens Square D by Schneider Electric	UT-H4336-9T-CH UT-H4336-9T 48104-02 UT-H4336-9T-MEP UJ797-O-K3L-K2L U4363-R S48104-02 UT-H4336-9T-SQD	One 4"	Source: One #2 - 600 Load: One #6 - 350 Size: 15" x 37" x 6" Note: Equipped with Lever Bypass

*Manufacturer name and part number subject to change without notice.

** Actual dimensions will vary

METER AND SOCKET APPLICATION GUIDE (cont'd)

TABLE 5-C *

APPLICATION				METER SOCKET				MAX HUB SIZE	MAX # CONDUCTORS MIN/MAX CONDUCTORS SIZES, TYPICAL DIMENSIONS **
WIRES	PHASE	VOLTS	SERVICE TYPE	MAX AMPS	INSTALLATION TYPE	STOCK NO.	MANUFACTURER*		
3	1	120/240	Residential or Secondary Service	320 - 600	Med - Transocket OH or UG	301417	Milbank Durham	S2690-XT 1004790A	Source: Two #2 - 600 Load: Two #2 - 600 Size: 18" x 30" x 12"
3	1	120/240	Residential or Secondary Service	600 - 1600	Maxi - Transocket OH or UG	302775	Milbank Durham	S3487-4X 1005014A	Source: Four #2 - 600 Load: Four #2 - 600 Size: 30" x 42" x 14"
3	1	120/240	Mobile Home Single Position	0 - 200	Self-Contained UG Only	307392	Milbank	U8567-0	Source: One #6 - 250 Load: One #6 - 250 Size: 12" x 42" x 8" Note: Use with Base TSN 310447
3	1	120/240	Mobile Home 2 Gang Vertical	0 - 200	Self-Contained OH or UG	307393	Milbank	U8667-0	Source: One #6 - 250 Load: One #6 - 250 Size: 12" x 42" x 8" Note: Use with Base TSN 310447
3	1	120/240	Apartment 2 Gang Horizontal	0 - 150	Self-Contained OH or UG	301408	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Talon/Siemens Square D by Schneider Electric	UT-2R5332B-CH UT-2R5332B UA2313-OG UT-2R5332B-MEP U1252-X SUA2313-OG UT-2R332B-SQD	Source: One #2 - 350 Load: One #2 - 250 Per Position Size: 25" x 14" x 6"
3	1	120/240	Apartment 3 Gang Horizontal	0 - 150	Self-Contained OH or UG	301403	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Milbank Talon/Siemens Square D by Schneider Electric	UT-3R5632B-CH UT-3R5632B UA3313-OG UT-3R5632B-MEP U9353-XL U1253-XL SUA3313-OG UT-3R5632B-SQD	Source: One #2 - 350 Load: One #2 - 250 Per Position Size: 33" x 14" x 5"
3	1	120/240	Apartment 4 Gang Horizontal	0 - 150	Self-Contained OH or UG	301404	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Milbank Talon/Siemens Square D by Schneider Electric	UT-4R5632B-CH UT-4R5632B UA4313-OG UT-4R5632B-MEP U9354-XL U1254-XL SUA4313-OG UT-4R5632B-SQD	Source: One #2 - 350 Load: One #2 - 250 Per Position Size: 41" x 14" x 5"
3	1	120/240	Apartment 5 Gang Horizontal	0 - 150	Self-Contained OH or UG	301405	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Talon/Siemens Square D by Schneider Electric	UT-5R5632B-CH UT-5R5632B UA5719-KPQG UT-5R5632B-MEP U1255-X SUA5719-KPQG UT-5R632B-SQD	Source: One #2 - 350 Load: One #2 - 250 Per Position Size: 49" x 14" x 5"
3	1	120/240	Apartment 6 Gang Horizontal	0 - 150	Self-Contained OH or UG	301406	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Talon/Siemens Square D by Schneider Electric	UT-6S352U-CH UIT-6R5352U UA6719-KPQG UIT-6R5352U-MEP U1256-X SUA6719-KPQG UIT-6R5352U-SQD	Source: One #2 - 350 Load: One #2 - 250 Per Position Size: 57" x 14" x 5"

*Manufacturer name and part number subject to change without notice.

** Actual dimensions will vary

METER AND SOCKET APPLICATION GUIDE (cont'd)

TABLE 5-C *

APPLICATION				METER SOCKET					MAX HUB SIZE	MAX # CONDUCTORS MIN/MAX CONDUCTORS SIZES, TYPICAL DIMENSIONS **
WIRES	PHASE	VOLTS	SERVICE TYPE	MAX AMPS	INSTALLATION TYPE	STOCK NO.	MANUFACTURER*	PART NUMBER		
3	1	240/480	Secondary Service	0 - 200	Mini - Transocket OH or UG	320797	Durham	105777A	Source: One #6 - 250 Load: One #6 - 250 Size: 13" x 24" x 9"	
3	Network	120/208	Residential or Secondary Service	0 - 200	Self-Contained OH or UG	301392	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Talon/Siemens Square D by Schneider Electric	UT-H5213B-ND-CH UT-H5213B-ND 9804-8592 UT-H5213B-ND-MEP U9581-XL S9804-8592 UT-H5213B-ND-SQD	Source: One #2 - 350 Load: One #2 - 350 Size: 13" x 19" x 5" Note: Equipped with Lever Bypass	
3	3Δ	240	Secondary Service	0 - 200	Self-Contained OH or UG	301392	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Talon/Siemens Square D by Schneider Electric	UT-H5213B-ND-CH UT-H5213B-ND 9804-8592 UT-H5213B-ND-MEP U9581-XL S9804-8592 UT-H5213B-ND-SQD	Source: One #2 - 350 Load: One #2 - 350 Size: 13" x 19" x 5" Note: Equipped with Lever Bypass	
3	3Δ	240	Secondary Service	200-600	Med - Transocket OH or UG	301417	Milbank Durham	S2690-XT 1004790A	Source: Two #2 - 600 Load: Two #2 - 600 Size: 18" x 30" x 12"	
3	3Δ	240	Secondary Service	600 - 1600	Maxi - Transocket OH or UG	302775	Milbank Durham	S3487-4X 1005014A	Source: Two #2 - 600 Load: Two #2 - 600 Size: 30" x 42" x 14"	
3	3Δ	480	Oil Field Only	0 - 200	Self-Contained OH or UG	301392	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Talon/Siemens Square D by Schneider Electric	UT-H5213B-ND-CH UT-H5213B-ND 9804-8592 UT-H5213B-ND-MEP U9581-XL S9804-8592 UT-H5213B-ND-SQD	Source: One #2 - 350 Load: One #2 - 350 Size: 13" x 19" x 5" Note: Equipped with Lever Bypass	
3	3Δ	480	Secondary Service	0 - 200	Mini - Transocket OH or UG	312125	Milbank Durham	S3228-DL 1004941B	Source: One #6 - 250 Load: One #6 - 250 Size: 13" x 24" x 9"	
3	3Δ	480	Secondary Service	200 - 600	Med - Transocket OH or UG	301419	Milbank Durham	S3184-XT 1004786C	Source: Two #2 - 600 Load: Two #2 - 600 Size: 18" x 30" x 12"	
4	3Δ	120/240	Residential or Secondary Service	0 - 200	Self-Contained OH or UG	301394	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Talon/Siemens Square D by Schneider Electric	UT-H7213T-HL-CH UT-H7213T-HL 40407-02FL UT-H7213T-HL-MEP U9701-RXL S40407-025FL UT-H7213T-HL-SQD	Source: One #6 - 350 Load: One #6 - 350 Size: 13" x 19" x 5" Note: Equipped with Lever Bypass	
4	3Δ	120/240	Residential or Secondary Service	200 - 320	Self-Contained OH or UG	312883	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Talon/Siemens Square D by Schneider Electric	UT-H7306-9T-HL-CH UT-H7306-9T-HL 47707-02FL UT-H7306-9T-HL-MEP U3936-R 47707-02FL UT-H7306-9T-HL-SQD	Source: One #2 - 600 or Two #2 - 350 Load: Two #2 - 350 Size: 15" x 35" x 5" Note: Equipment with Lever Bypass	

*Manufacturer name and part number subject to change without notice.

** Actual dimensions will vary

METER AND SOCKET APPLICATION GUIDE (cont'd)

TABLE 5-C *

APPLICATION				METER SOCKET				MAX # CONDUCTORS MIN/MAX CONDUCTORS SIZES, TYPICAL DIMENSIONS **		
WIRES	PHASE	VOLTS	SERVICE TYPE	MAX AMPS	INSTALLATION TYPE	STOCK NO.	MANUFACTURER*		PART NUMBER	MAX HUB SIZE
4	3Δ	120/240	Residential or Secondary Service	200 - 320	Self-Contained OH or UG	397389	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Talon/Siemens Square D by Schneider Electric	UT-H7336-9T-HL-CH UT-H7336-9T-HL-CH 44707-02FL UT-H7336-9T-HL-MEP U40I3-X S44707-02FL UT-H7336-9T-HL-SQD	One 4"	Source: One #2 - 600 or Two #2 - 350 Load: Two #2 - 350 Size: 20" x 40" x 7" Note: Equipment with Lever Bypass
4	3Δ	120/240	Residential or Secondary Service	320 - 600	Med- Transocket OH or UG	301418	Milbank Durham	S2674-XT 1004785A	Two 4"	Source: Two #2 - 600 Load: Two #2 - 600 Size: 18" x 30" x 12"
4	3Δ	120/240	Residential or Secondary Service	600 - 1600	Maxi- Transocket OH or UG	901728	Durham	1011714	Six 4"	Source: Six #2 - 600 Load: Six #2 - 600 Size: 33" x 42" x 15"
4	3Y	120/208	Residential or Secondary Service	0 - 200	Self-Contained OH or UG	301394	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Talon/Siemens Square D by Schneider Electric	UT-H7213T-HL-CH UT-H7213T-HL-CH 40407-02FL UT-H7213T-HL-MEP U9701-X S40407-02FL UT-H7213T-HL-SQD	One 4"	Source: One #6 - 350 Load: One #6 - 350 Size: 13" x 19" x 5" Note: Equipment with Lever Bypass
4	3Y	120/208	Residential or Secondary Service	200 - 320	Self-Contained OH or UG	312883	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Talon/Siemens Square D by Schneider Electric	UT-H7306-9T-HL-CH UT-H7306-9T-HL-CH 47707-02FL UT-H7306-9T-HL-MEP U9396-R 47707-02FL UT-H7306-9T-HL-SQD	One 4"	Source: One #2 - 600 or Two #2 - 350 Load: Two #2 - 350 Size: 15" x 35" x 5" Note: Equipment with Lever Bypass
4	3Y	120/208	Residential or Secondary Service	200 - 320	Self-Contained OH or UG	397389	Eaton Cutler-Hammer Durham Talon/Landis & Gyr Midwest Electric Milbank Talon/Siemens Square D by Schneider Electric	UT-H7336-9T-HL-CH UT-H7336-9T-HL-CH 44707-02FL UT-H7336-9T-HL-MEP U40I3-X S44707-02FL UT-H7336-9T-HL-SQD	One 4"	Source: One #2 - 600 or Two #2 - 350 Load: Two #2 - 350 Size: 20" x 40" x 7" Note: Equipment with Lever Bypass
4	3Y	120/208	Residential or Secondary Service	320 - 600	Med- Transocket OH or UG	301418	Milbank Durham	S2674-XT 1004785A	Two 4"	Source: Two #2 - 600 Load: Two #2 - 600 Size: 18" x 30" x 12"
4	3Y	120/208	Residential or Secondary Service	600 - 1600	Maxi-Transocket OH or UG	901728	Durham	1011714	Six 4"	Source: Six #2 - 600 Load: Six#2 - 600 Size: 33" x 42" x 15"
4	3Y	277/480	Residential or Secondary Service	0 - 200	Mini-Transocket OH or UG	901553	Durham	1011607	One 3"	Source: One #6 - 250 Load: One #6 - 250 Size: 13" x 30.5" x 9.75"
4	3Y	277/480	Residential or Secondary Service	200 - 600	Med- Transocket OH or UG	901552	Durham	1011606	Two 4"	Source: Two #2 - 600 Load: Two #2 - 600 Size: 18" x 35" x 12.56"
4	3Y	277/480	Residential or Secondary Service	600 - 1600	Maxi-Transocket OH or UG	901554	Durham	1011630	Six 4"	Source: Six #2 - 600 Load: Six #2 - 600 Size: 33" x 42" x 15"
ANY APPLICATION				>1600	CONSULT COMPANY FOR SERVICE ENCLOSURE AND/OR INSTRUMENT TRANSFORMER ENCLOSURE OPTIONS					

*Manufacturer name and part number subject to change without notice.

** Actual dimensions will vary

TRANSOCKET CONFIGURATIONS AND CONNECTION DETAILS

FIGURE 5-D

GENERAL INFORMATION

The basic wiring configurations for transockets are shown in the following figures. Transockets are available in three ampacity ranges:

- a. Up to 200 amps - "MINI", with "Lay in" type connectors and Wall Mounted
- b. 201- 600 amps - "MEDIUM", with Double barrel, set-screw type connectors and Wall Mounted
- c. 601-1600 amps - "MAXI", with Double barrel, set-screw type connectors Wall Mounted or Padmounted

Note: See Table 5-C, pages 43-46 for connector specifications, the TSN, and other selection data.



APPLICATION - MEDIUM (201-600 amps)

Nominal size: 18x30x12

120/240 V, 3-wire, 1 \emptyset

120/208 V, 3-wire, network

240 V, 3-wire, delta



APPLICATION - MEDIUM (201-600 amps)

Nominal size: 18x30x12

120/208 V, 4-wire, 3 \emptyset wye

120/240 V, 4-wire, 3 \emptyset delta

"Power Leg" of 4-wire delta shall connect to right-hand CT and be identified by an outer finish that is orange in color.

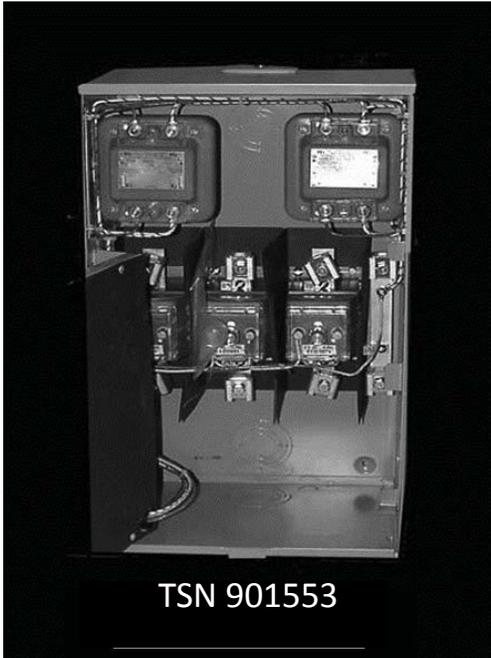
TRANSOCKET CONFIGURATIONS AND CONNECTION DETAILS (Cont'd)

FIGURE 5-D

APPLICATION - MINI (200 amp max.)

Nominal size: 13x30x10

277/480 V, 4-wire, 3 ϕ wye only



TSN 901553

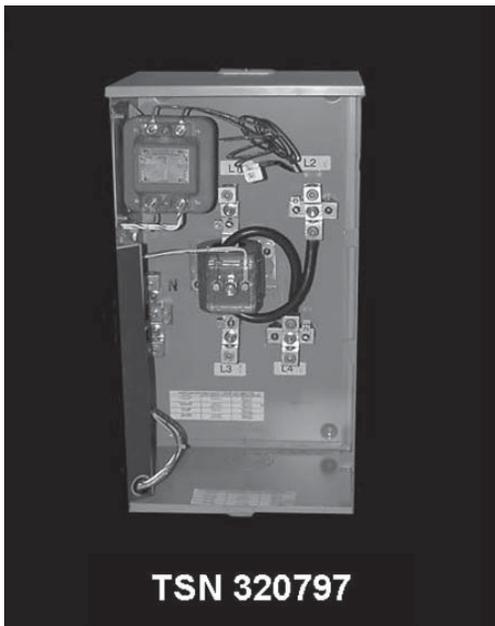
APPLICATION - MINI (200 amp max)

Nominal size: 13x24x9 - 480 V, 3-wire, 3 ϕ delta

only For ungrounded service see 100.05.03, page 9 and 500.06.07, page 38.



TSN 312125



TSN 320797

APPLICATION - MINI (200 amp max)

Nominal size: 13x24x9

480 V, 2-wire, 1 ϕ

240/480 V, 3-wire, 1 ϕ



TSN 901554

APPLICATION - MAXI (600 - 1600 amp max)

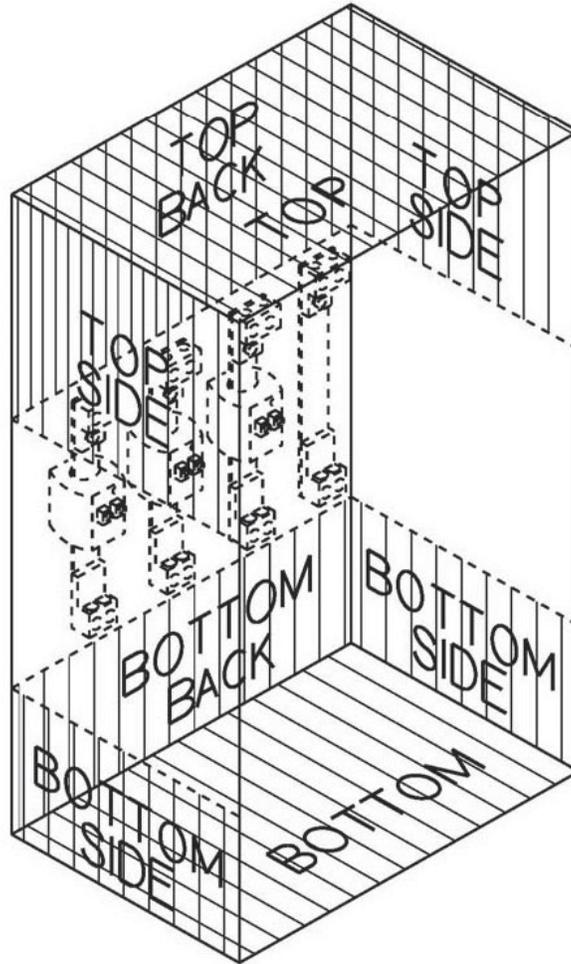
Nominal size: 33X42X15

277/480 V, 4-wire, 3 ϕ

TRANSOCKET CONFIGURATIONS AND CONNECTION DETAILS (Cont'd)

FIGURE 5-D

Permissible Entrance and Exit Locations for Transocket Conductors



Integrity of Connections – When installing conductors in transockets, it is the responsibility of the installer to ensure that all line and load connections are tight, including the connections between the CT bus bar and the connector.

Transocket - Overhead Service

1. For overhead installations, line conductors must enter the transocket top, top back, or top sides and connect to transocket top terminals.
2. Load conductors must connect to the transocket bottom terminals and exit through the transocket bottom, bottom back, or bottom sides.

Transocket - Underground Service

1. For underground installations, line conductors must enter through the transocket bottom, bottom back, or bottom sides and connect to the transocket bottom terminals.
2. Load conductors must connect to the transocket top terminals and exit through the top, top back, or top sides.
3. Reserve adequate space beneath the transocket for service raceway.

TYPICAL SERVICE ENCLOSURES

FIGURE 5-E



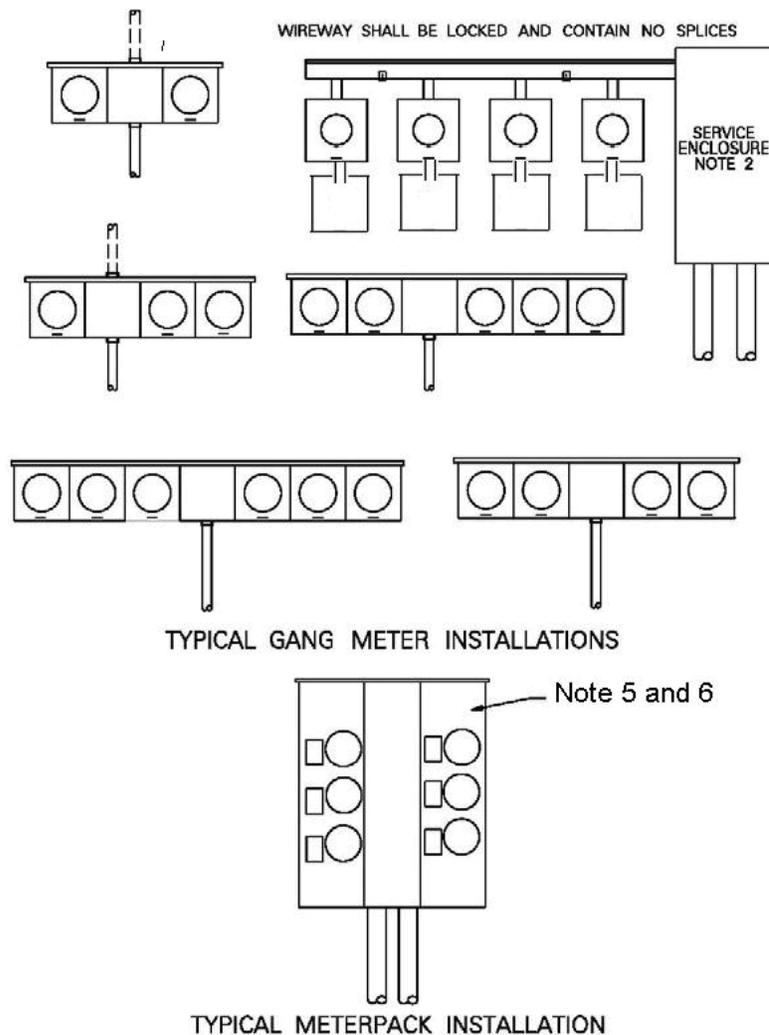
AMPACITY	APPLICATION	BUS ARRANGEMENT	HUB OPENINGS 4" MAX (Order hubs separately)	TYPICAL WxHxD (Inches)	COMPANY STOCK NUMBER (TSN)
600	3 wire, 1 phase	Accommodates two-600 kcmil (line) and four-250 kcmil (load) conductors per phase	ONE	16x24x6	312726
1100	3 wire, 1 phase Wall mount	3 Horizontal connector bus bars with eight #10-350 kcmil integrated, set screw connectors per bus. Add extra connector bar (TSN 320781) to convert to 4 wire, 3 phase	TWO	12x50x8	312723
1200 (Note: 1)	4 wire, 3 phase Wall mount	3 Vertical connector bus bars, one horizontal with twenty-four #10-350 kcmil integrated set screw connectors per bus. Each bar also has 11 sets of 2 hole NEMA spaced holes/bar.	FOUR	30x42x14	310935
2500 (Notes: 1&2)	4 wire, 3 phase Padmount	4 Horizontal tin-plated aluminum bus bars with thirty integral #10-250 kcmil set screw connectors/bar. Each bar also has 18 pair 2-hole NEMA spaced holes/bar.	SIX	44x54x24	300313

NOTES:

1. Source conductors must connect in the center of bus bars for full ampacity rating.
2. 1200-Amp Enclosure (Company TSN 310935) maximum conductor size is 500 kcmil when using 2-hole NEMA connectors/spades. See Appendix A, (NEMA 2-hole) page 60 for connector specifications.

GANG METER SOCKETS MULTIFAMILY TYPICAL LAYOUTS

FIGURE 5-F



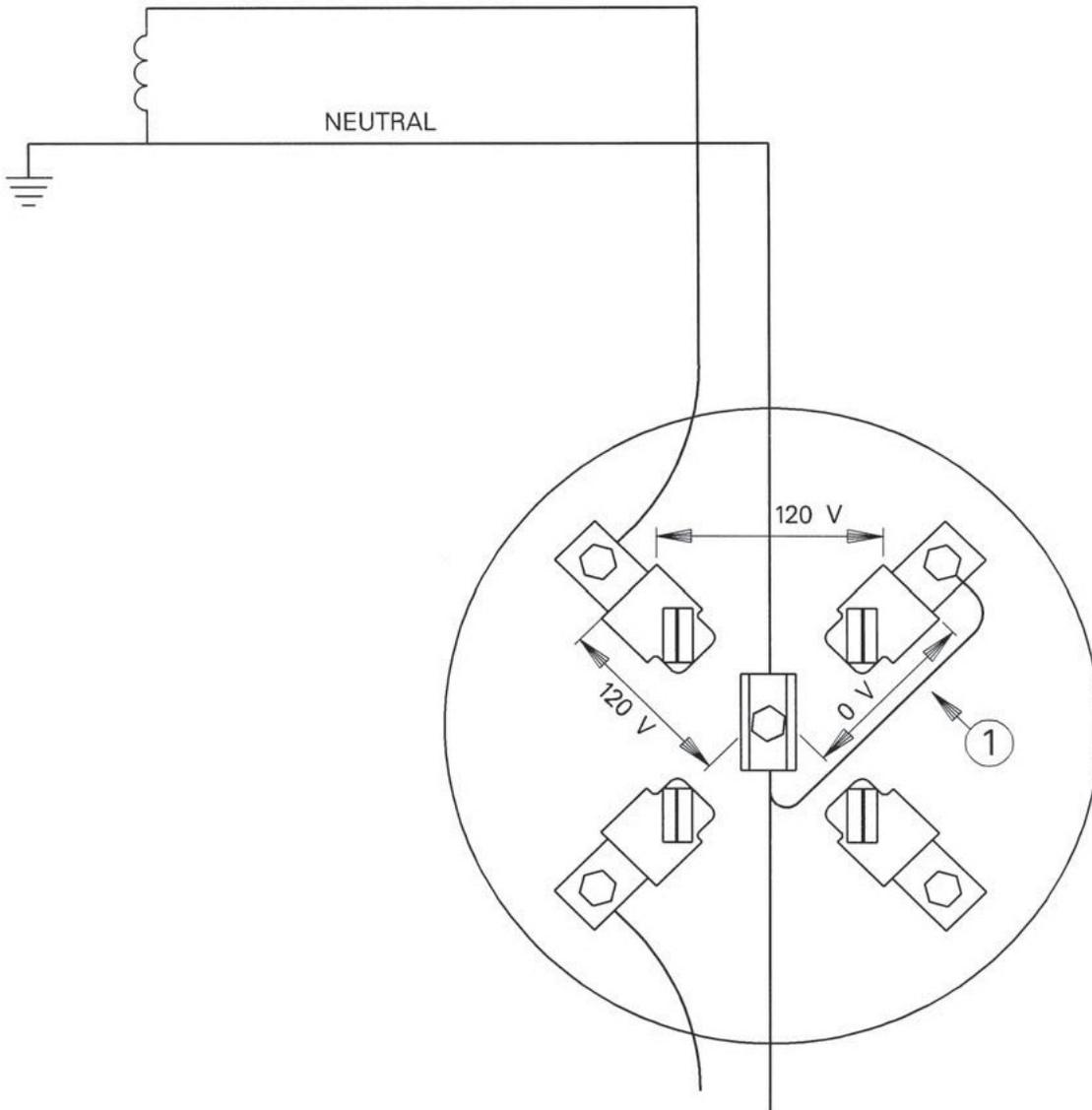
NOTES:

1. Each socket must be clearly and permanently marked as indicated in Section 500.11, page 40.
2. Meter sockets shall be provided, installed and maintained by Customer. Transockets, when required, shall be provided by Company and installed by Customer. Company locks or seals will be installed at each meter socket. See Table 5-C, pages 43-46 for list of approved meter sockets. Service enclosure (when required) to be provided by Company and installed by Customer. See 500.08, page 40. Company locks and or seals will be installed as needed.
3. **Contact Company for approval of layouts other than those shown above prior to installation.**
4. **Contact Company for approval of meterpacks prior to letting bids and installing equipment. See 500.06.03, page 37 for details.**
5. It is the Customer's responsibility to determine local code requirements concerning meterpacks with main switches or main circuit breakers prior to installing equipment.
6. Meterpacks with meter stacks up to 5 will be permitted under certain conditions. Maximum mounting height is 6 ft. to the center of the top meter socket. For meter stacks that have 5 vertical positions, a permanent hard surface extending a minimum 24 in. in front of the meterpack and the width of the meterpack is required. Contact Company for details.

METER SOCKET CONNECTIONS AND VOLTAGES

FIGURE 5-G

APPLICATION: 2-WIRE, 120 VOLT, 1Ø SELF-CONTAINED, FORM 1



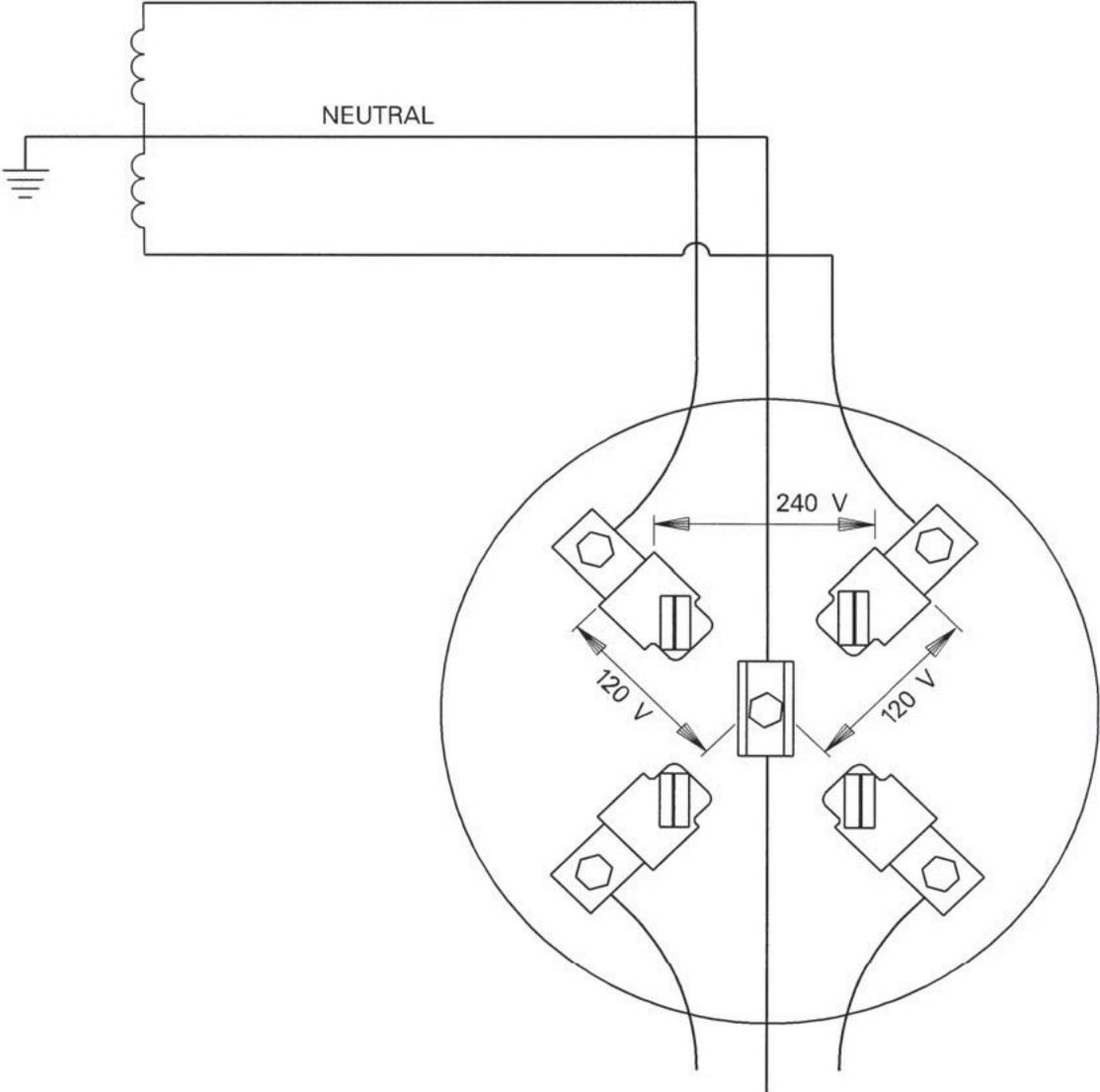
NOTE:

1. Jumper must be installed between neutral connector and upper right terminal.

METER SOCKET CONNECTIONS AND VOLTAGES (cont'd)

FIGURE 5-H

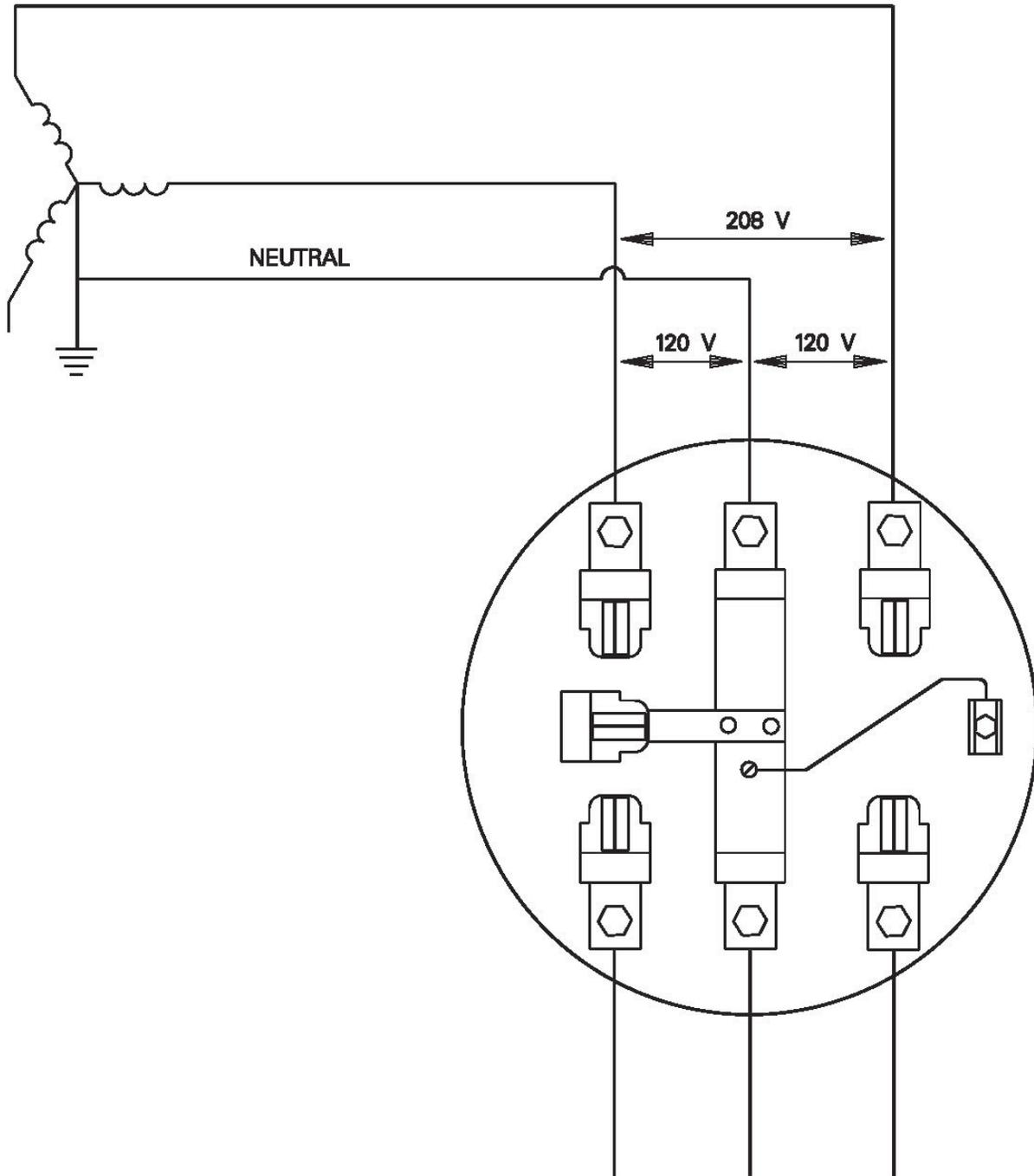
APPLICATION: 3-WIRE, 120/240 VOLT, 1Ø SELF-CONTAINED, FORM 2



METER SOCKET CONNECTIONS AND VOLTAGES (cont'd)

FIGURE 5-I

APPLICATION: 3-WIRE NETWORK 120/208 VOLT, 1Ø SELF-CONTAINED NON-STANDARD, FORM 12



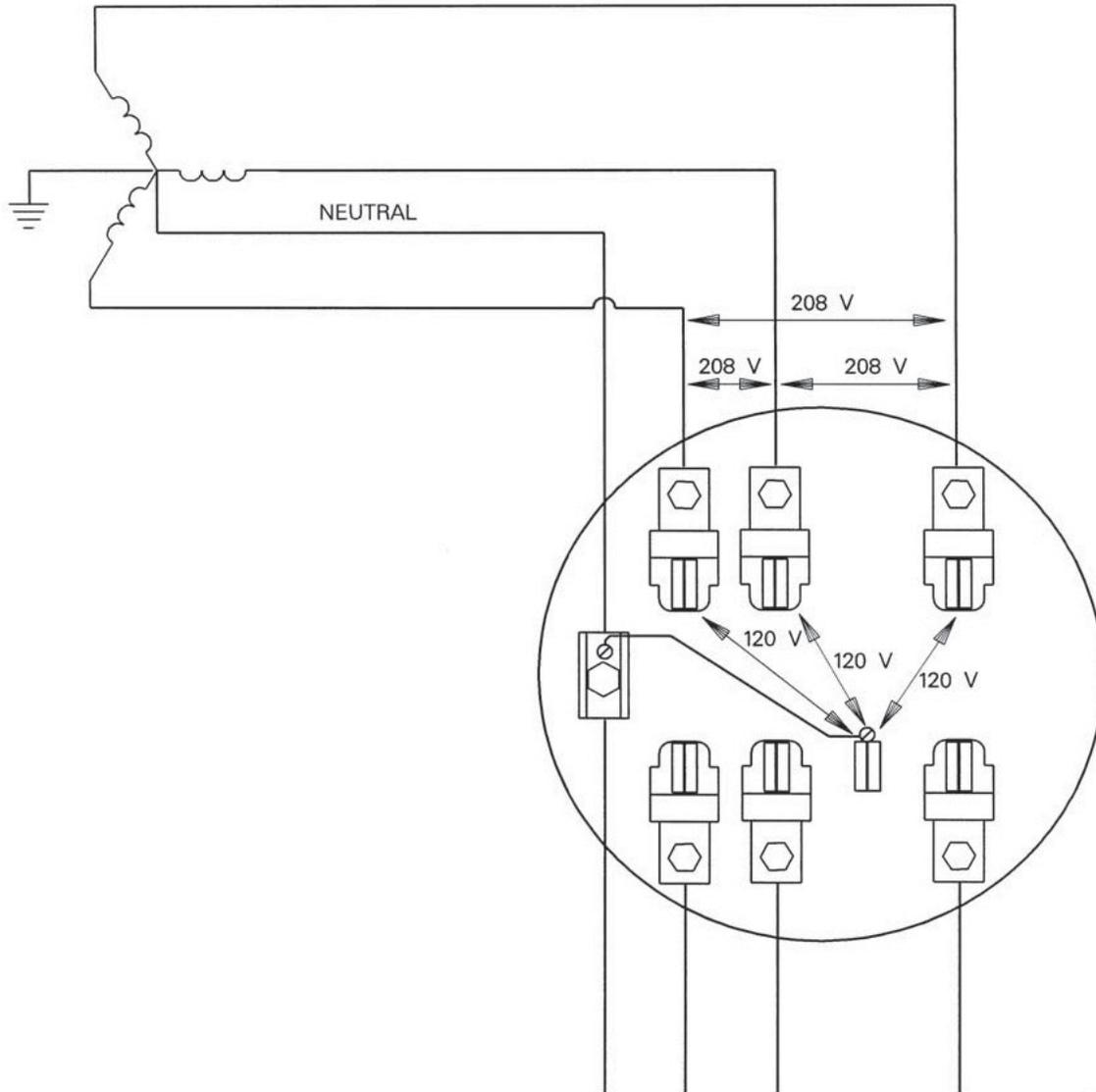
NOTE:

See 100.05.04, page 9 for application, availability and limitations. Network Secondary Service Customers not to exceed 60 amperes. Non-network Secondary Service Customers not to exceed 200 amperes.

METER SOCKET CONNECTIONS AND VOLTAGES (cont'd)

FIGURE 5-J

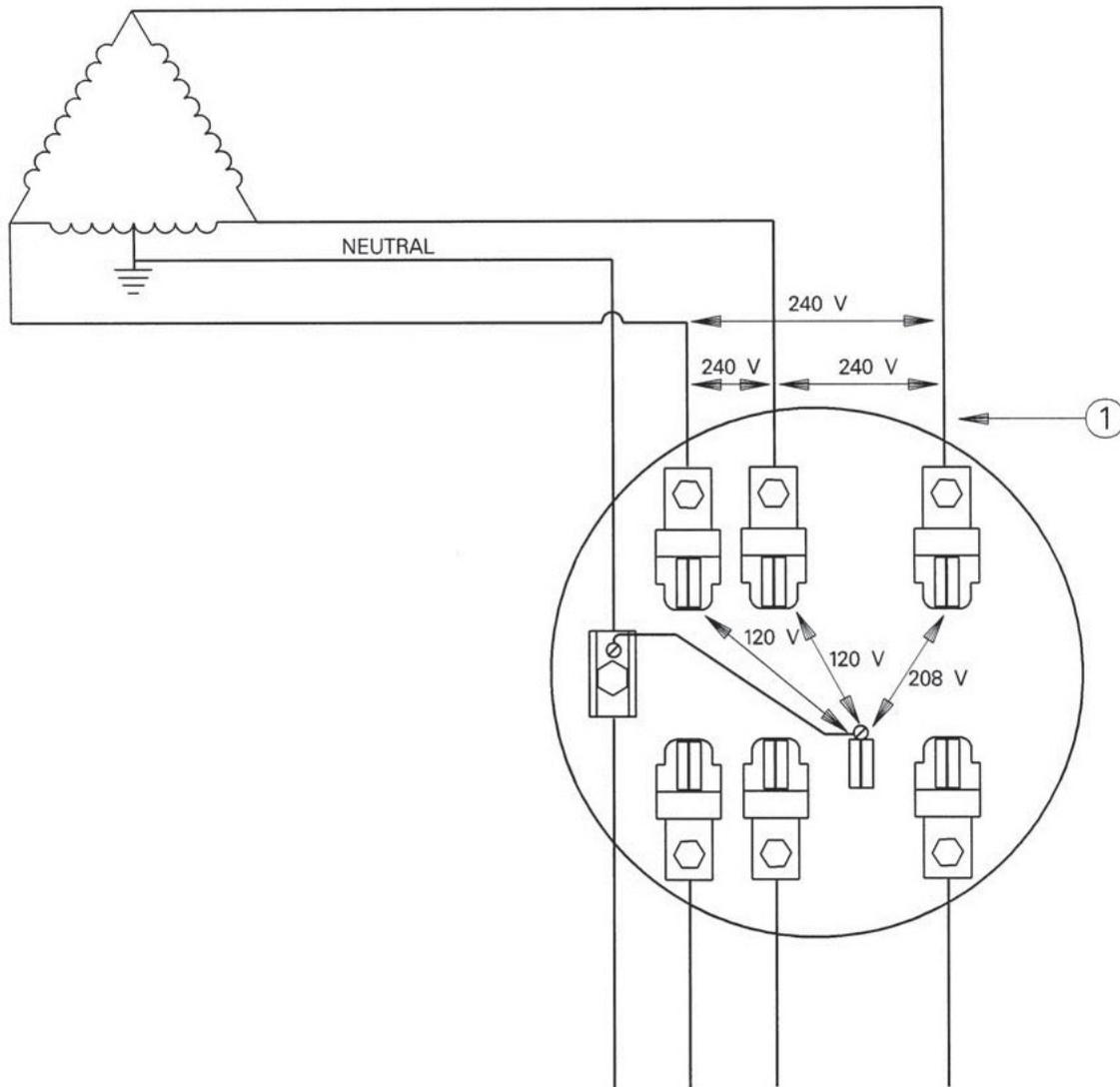
APPLICATION: 4-WIRE, WYE 120/208, 3Ø SELF-CONTAINED, FORM 16



METER SOCKET CONNECTIONS AND VOLTAGES (cont'd)

FIGURE 5-K

APPLICATION: 4-WIRE, DELTA 120/240 VOLT, 3Ø SELF-CONTAINED, FORM 16



NOTES:

1. On a 4-wire delta connection, the phase having the highest voltage to ground (Power leg, high leg, wild leg, or freak leg) must be connected to right-hand terminals of the meter socket. In other locations such as service enclosures, disconnects, etc., the "Power Leg" is connected to the center terminal.

SECTION 600

TEMPORARY SERVICE INSTALLATION

600.01 General

To initiate temporary service for construction or other purposes, contact Oncor at 1.888.222.8045. Customer must choose a Retail Electric Provider in order to have a meter installed for temporary service to be delivered (energized). To view a list of approved Retail Electric Provider's in Texas, Customers may research information posted at: www.powertochoose.com

600.02 Temporary Service from Overhead Secondary

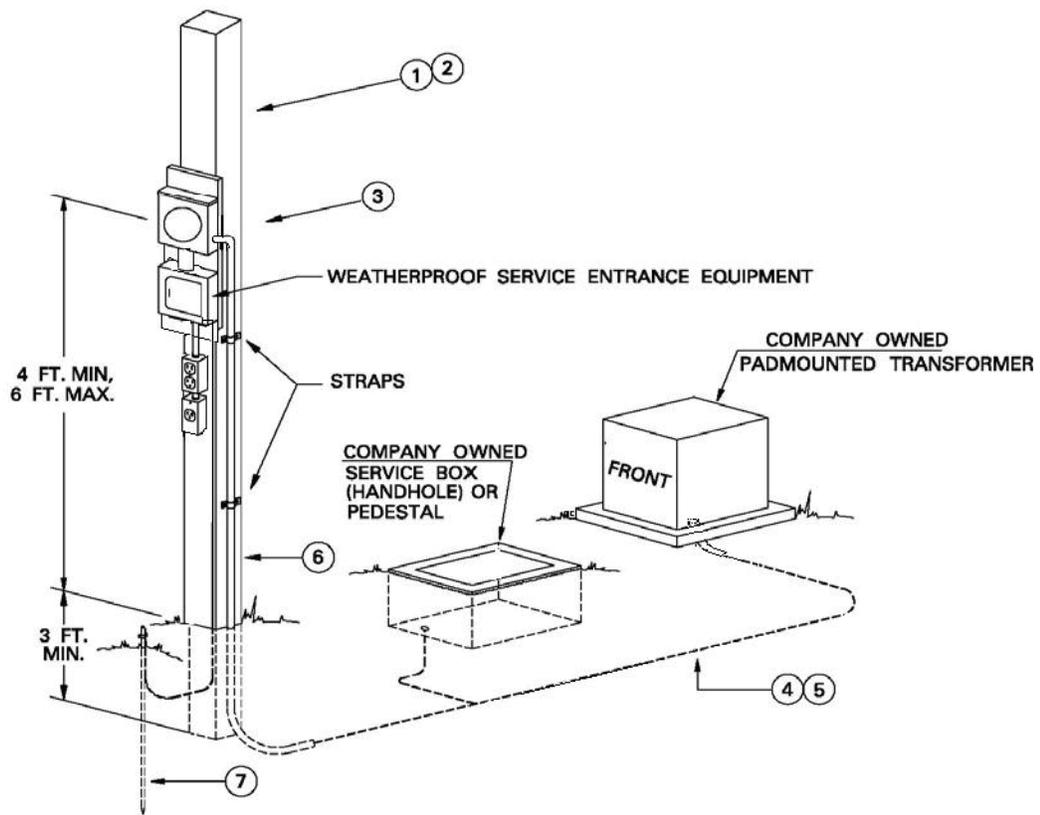
See Figure 6-A, page 58.

600.03 Temporary Service from Underground Secondary

See Figure 6-B, page 59.

TEMPORARY SERVICE POLE FROM UNDERGROUND SECONDARY

FIGURE 6-B



NOTES:

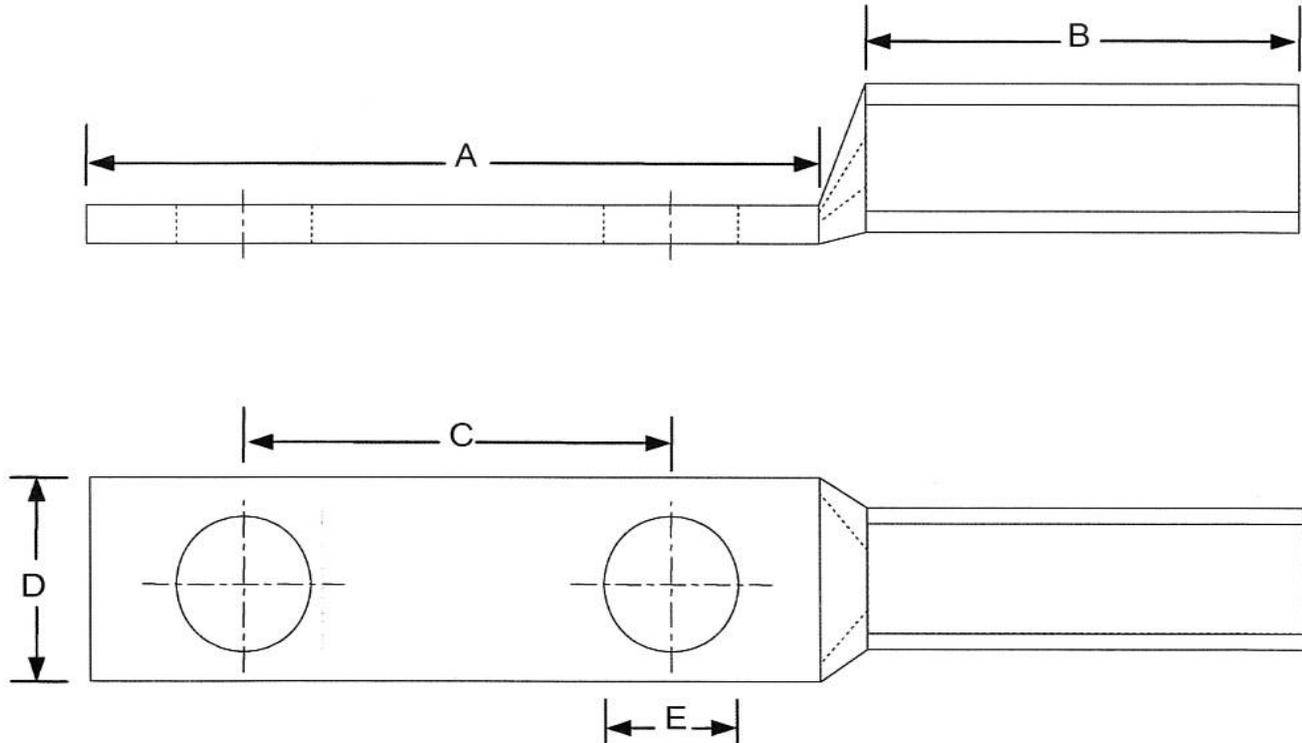
1. Service support to be 4 in. X 4 in. minimum wood pole, unspliced and set a minimum 3 ft. deep. Pole should be installed 6 ft. from any alley, sidewalk, or drive.
2. Customer shall not allow pole to be moved or tampered with as long as Company's service conductors are attached.
3. Service entrance equipment and pole will be provided, installed, and maintained by the Customer. Customer shall provide, install, and maintain meter socket. Customer must mark meter socket with correct 911 address.
4. Conduit and wire will be furnished by Customer from line-side meter terminals to the point of connections at the transformer pad, pedestal, or handhole. Customer will trench within 2 ft. of right front side of transformer pad or within 2 ft. of pedestal or handhole. Company will make final trenching and connections.
5. Customer furnished wiring from line-side terminals of meter socket to connections at pad transformer, pedestal or handhole may be direct buried where installed with 2 ft. minimum of earth cover.
6. Where exposed above ground, conductors shall be installed in rigid metallic or flexible metallic conduit.
7. Customer's grounding electrode conductor shall originate from service entrance equipment and shall not terminate in the meter socket. Customer's grounding electrode conductor shall be #6 Cu minimum and connected to an approved ground electrode (pole butt-wrap is not an approved ground electrode). Company reserves the right to refuse installation of service contingent upon observing an unsafe Customer connection.

APPENDIX A

TWO HOLE COMPRESSION LUGS FOR TERMINAL CONNECTIONS

Reference: Tables 5-A & 5-B, Pages 41-42 for Company-Customer Responsibility. When required, the Customer is to furnish the connectors that meet the following specifications at padmounted transformers and connection enclosures for connection of Customer's conductors at the point of delivery.

Mechanical/bolt type connections are not acceptable.



Measurements for Two-hole Compression Connectors

- A – Sufficient for two-hole configuration
- B – Long Barrel designation per manufacturer specification
- C – NEMA two-hole spacing - 1.75 in. ONLY
- D – Maximum tongue width 1.75 in. NO EXCEPTIONS
- E – 9/16 in. bolt-hole inside-diameter ONLY

ALL Two-hole Compression Connectors must meet these specifications:

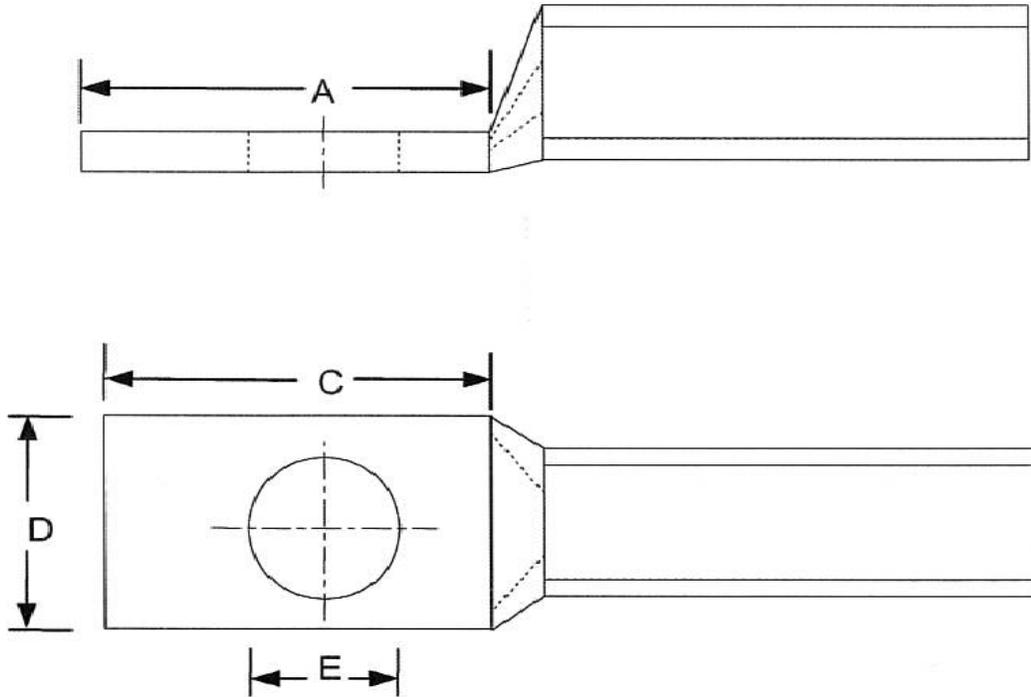
1. Manufacturer STAMPED for conductor size (cable range)
2. Manufacturer STAMPED for conductor type (Al or Cu or dual rated)
3. Tin plated
4. No Inspection window
5. Two-hole NEMA spacing of 1.75 in. bolt pattern
6. Long barrel; length as per manufacturer
7. Requires use of one-half inch diameter bolts
8. DIE-INDEX stamped by manufacturer on connector
9. Factory pre-applied oxide inhibitor within each aluminum connector
10. Rated at 90°C

APPENDIX B

ONE HOLE COMPRESSION LUGS FOR SUBMERSIBLE CONNECTIONS

Reference: Tables 5-A & 5-B, Pages 41-42 for Company-Customer Responsibility. When required, the Customer is to furnish the connectors that meet the following specifications at subsurface secondary/service boxes for connection of Customer's conductors at the point of delivery.

Mechanical/bolt type connections are not acceptable.



Measurements for One-hole Compression Connectors

- A – Sufficient for one-hole configuration
- B – Long Barrel designation per manufacturer specification
- C – NEMA one-hole spacing
- D – Maximum tongue width 1.75 in. NO EXCEPTIONS
- E – 9/16 in. bolt-hole inside-diameter ONLY

ALL One-hole Compression Connectors must meet these specifications:

1. Manufacturer STAMPED for conductor size (cable range)
2. Manufacturer STAMPED for conductor type (Al or Cu or dual rated)
3. Tin plated
4. No Inspection window
5. Long barrel; length as per manufacturer
6. Requires use of one-half inch diameter bolts
7. DIE-INDEX stamped by manufacturer on connector
8. Factory pre-applied oxide inhibitor within each aluminum connector
9. Rated at 90°C

APPENDIX C

PRIMARY METERING EQUIPMENT STANDARDS

CROSSARM CONSTRUCTION LOAD LESS THAN 150 A.....Page 63

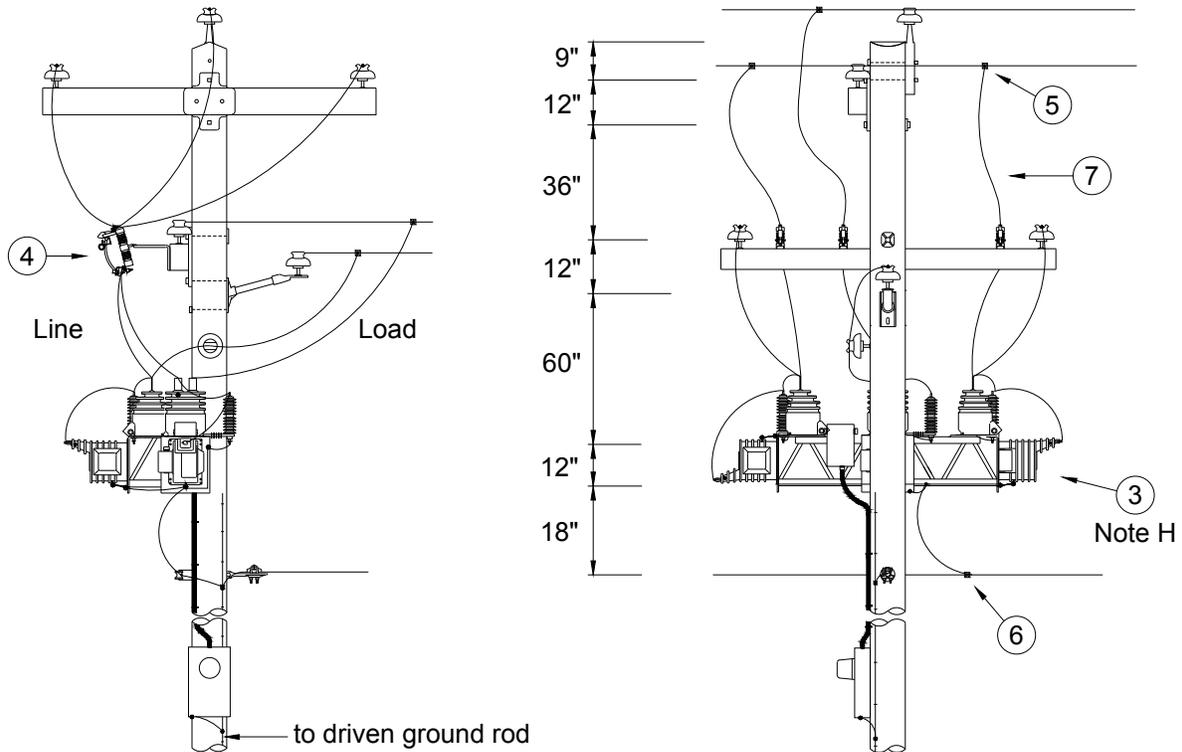
CROSSARM CONSTRUCTION LOAD GREATER THAN 150 A.....Page 64

SHIELDED CONSTRUCTION LOAD LESS THAN 150 A.....Page 65

SHIELDED CONSTRUCTION LOAD GREATER THAN 150 A.....Page 66

Primary Metering Equipment Crossarm Construction Load Less Than 150 A

115 - 505
06 - 18



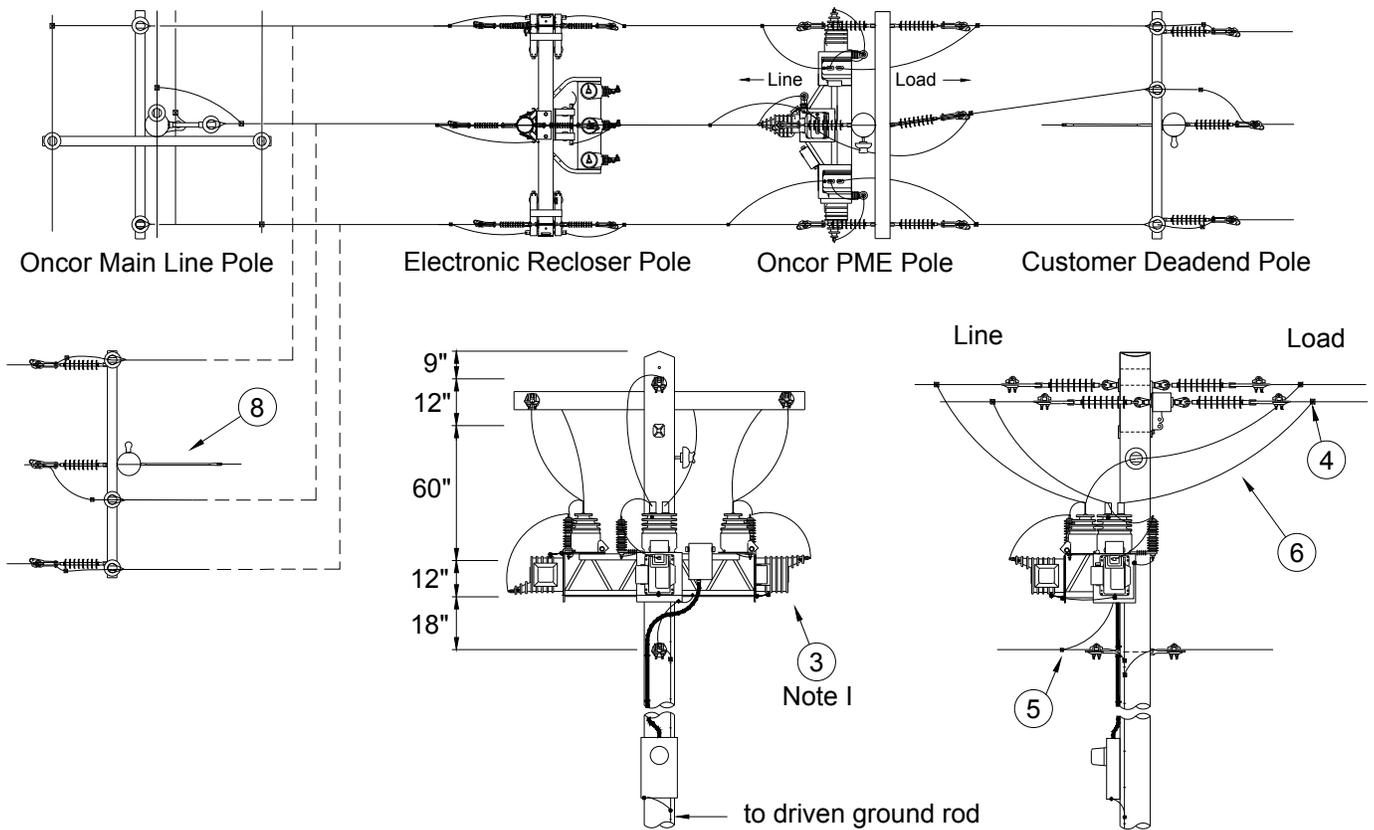
Notes:

- A. PME may be installed on separate pole between customer pole and Oncor main line pole if an easement is available.
- B. Contact Distribution Planning for fuse coordination.
- C. A recloser is required if future load growth is anticipated to exceed 150 A.
- D. Customer must properly deadend and guy their pole.
- E. Customer must match Oncor's construction framing and pole height.
- F. Customer must provide sufficient length conductor to be slacked to PME pole.
- G. Oncor will attach customer conductor to PME pole.
- H. See Section 804 of the metering handbook for PME details.

Item	Qty.	Description	TSN/Ref.	CU	MU
1	1	Pole, class 3	106	PWO _ _ _ _	PW _ _ _ _
2	As Req.	Pole stabilization, foam, polyurethane	106	BF	
3	1	Primary Metering Equipment	804		
4	3	Fuse cutout	111		
5	6	Connector, wedge, primary	109	PWC _ _ _ _	
6	9	Connector, parallel, groove	109	PGC _ _ _ _	
7	9	Jumper, primary		PRIJUMP _ _	
8	1	Driven ground	105	GDR16365	

Primary Metering Equipment Crossarm Construction Load Greater Than 150 A

115 - 510
06 - 18



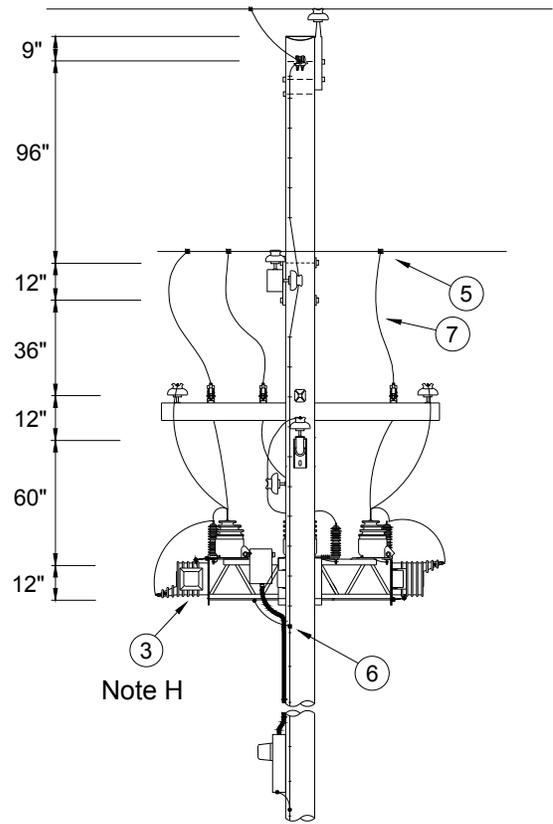
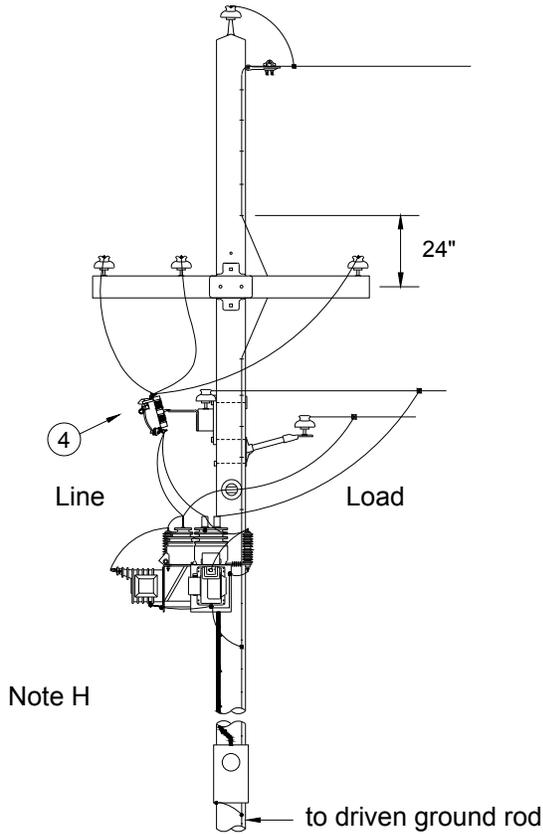
Notes:

- A. Oncor must install PME pole separate from main line via slack span.
- B. Recloser pole to be installed directly between main line and PME pole.
- C. Maximum span length between any two poles is 50 feet.
- D. Customer must properly deadend and guy their pole.
- E. Customer must match Oncor's construction framing and pole height.
- F. Customer must provide sufficient length conductor to be slacked to PME pole.
- G. Customer must provide required connectors to be attached to deadend insulators on PME pole.
- H. Oncor will attach customer conductor to PME pole.
- I. See Section 804 of the metering handbook for PME details.

Item	Qty.	Description	TSN/Ref.	CU	MU
1	1	Pole, class 3	106	PWO ___	PW ___
2	As Req.	Pole stabilization, foam, polyurethane	106	BF	
3	1	Primary Metering Equipment	804		
4	6	Connector, wedge, primary	109	PWC ___	
5	9	Connector, parallel, groove	109	PGC ___	
6	6	Jumper, primary		PRIJUMP __	
7	1	Driven ground	105	GDR16365	
8	As Req.	Guy, primary	107		

Primary Metering Equipment Shielded Construction Load Less Than 150 A

115 - 515
06 - 18



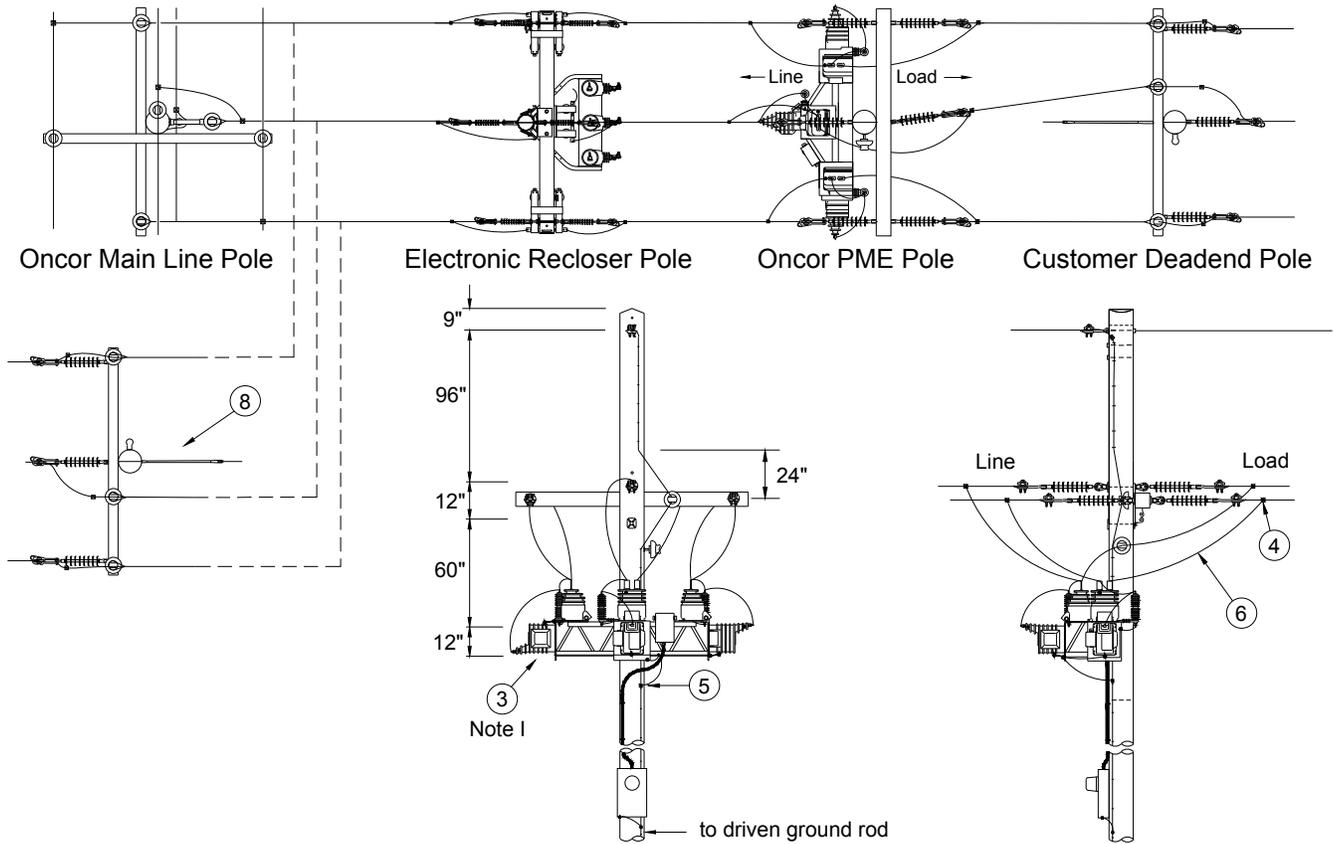
Notes:

- A. PME may be installed on separate pole between customer pole and Oncor main line pole if an easement is available.
- B. Contact Distribution Planning for fuse coordination.
- C. A recloser is required if future load growth is anticipated to exceed 150 A.
- D. Customer must properly deadend and guy their pole.
- E. Customer must match Oncor's construction framing and pole height.
- F. Customer must provide sufficient length conductor to be slacked to PME pole.
- G. Oncor will attach customer conductor to PME pole.
- H. See Section 804 of the metering handbook for PME details.

Item	Qty.	Description	TSN/Ref.	CU	MU
1	1	Pole, class 3	106	PWO ___	PW ___
2	As Req.	Pole stabilization, foam, polyurethane	106	BF	
3	1	Primary Metering Equipment	804		
4	3	Fuse cutout	111		
5	6	Connector, wedge, primary	109	PWC ___	
6	9	Connector, parallel, groove	109	PGC ___	
7	9	Jumper, primary		PRIJUMP __	
8	1	Driven ground	105	GDR16365	

Primary Metering Equipment Shielded Construction Load Greater Than 150 A

115 - 520
06 - 18



Notes:

- A. Oncor must install PME pole separate from main line via slack span.
- B. Recloser pole to be installed directly between main line and PME pole.
- C. Maximum span length between any two poles is 50 feet.
- D. Customer must properly deadend and guy their pole.
- E. Customer must match Oncor's construction framing and pole height.
- F. Customer must provide sufficient length conductor to be slacked to PME pole.
- G. Customer must provide required connectors to be attached to deadend insulators on PME pole.
- H. Oncor will attach customer conductor to PME pole.
- I. See Section 804 of the metering handbook for PME details.

Item	Qty.	Description	TSN/Ref.	CU	MU
1	1	Pole, class 3	106	PWO ___	PW ___
2	As Req.	Pole stabilization, foam, polyurethane	106	BF	
3	1	Primary Metering Equipment	804		
4	6	Connector, wedge, primary	109	PWC ___	
5	9	Connector, parallel, groove	109	PGC ___	
6	6	Jumper, primary		PRIJUMP __	
7	1	Driven ground	105	GDR16365	
8	As Req.	Guy, primary	107		

Summary of 2017 Amendments (page 1 of 6)

CONTENTS: Revised page numbers.

FOREWORD: Revised publish date (May 1, 2017).

SECTION 100 - GENERAL INFORMATION

- **100.01.18, page 4 - added:** "Customer shall permanently mark each meter socket at multi-metered locations as per 500.11, page 40, before a meter can be set."
- **100.01.25, page 5 - Service Enclosure:** Definition revised for clarity.
- **100.01.29, page 5 - Service Point:** Definition revised for clarity and added reference to NEC Article 100.
- **100.01.30, page 5 - Secondary Enclosure:** Definition revised for clarity.
- **100.04.02, page 8 - Attachments to Company Facilities:** Revised page # "See 500.04, page 36".
- **100.04.03, page 8 - Company's Locks or Seals:** Revised page # "See 500.02, page 35".
- **100.05.02, page 9 - Standard Secondary Voltages:** Revised appearance presentation of voltage information.
- **100.05.03, page 9 - Request for Undergrounded 3-Wire, Three-Phase Service:** Revised page # "See 500.06.07, page 38."
- **100.05.04, page 9 - 120/208V...Network...Non-Network Service:** Revised page # and Figure # "100.05.01, page 8 and Figure 5-I, page 54".
- **100.05.05, page 10 - Mixed Use Customer Facilities:** Revised reference "Tables 5-A & 5-B, pages 41 & 42".

SECTION 200 - CLEARANCES

- **Figure 2-A, page 12 - CLEARANCES FOR SERVICE DROP:** Revised appearance presentation of clearance information.
- **Figure 2-B, page 13 - CLEARANCES FOR SWIMMING POOLS FROM OVERHEAD FACILITIES:** Revised for clarity.
- **Figure 2-C, page 14 - CLEARANCES FOR SWIMMING POOLS FROM UNDERGROUND FACILITIES:**
 - **Notes 1 & 2:** Revised for clarity;
 - **(OLD) Notes 3, 4 & 5:** Moved to (NEW) Notes 5, 6 & 7 for flow of information and clarity;
 - **Note 3:** (NEW) include minimum distance for conduits that contain Company conductors;
 - **Note 4:** (NEW) added statement regarding use of trench for Company service lateral only;
 - **Note 8:** (NEW) see DDS1PR at Oncor.com regarding re-routing existing underground service lateral conductors when installing a swimming pool.

SECTION 300 – OVERHEAD SERVICES

- **Figure 3-A, page 19 - TYPICAL PERMANENT SERVICE DROP**
 - **Note 6:** Revised for clarity. Meter mounting height is measured from final grade. Figure shows a conduit strap around the service raceway under the roof and above the meter socket for stabilizing the service raceway.
 - **Note 11:** Revised for clarity.
- **Figure 3-B, page 20 – OVERHEAD SERVICE ATTACHMENT**
 - **Note 1:** Added Customer "provides"; revised for clarity.
- **Table 3-C, page 21 – MAXIMUM OVERHEAD SERVICE DROP LENGTH FOR RESIDENTIAL SERVICES**

Revised for clarity; actual table not a figure.
- **Figure 3-D, page 22 – OVERHEAD SERVICE MAST**
 - **Note 4:** Revised for clarity and to emphasize need for continuous Service Mast and no open connections above the meter socket.
 - **Note 9:** Added "Typical single-phase service shown here, for three-phase see Figure 3-F, page 24."
 - **Note 10:** Added graphically grounding conductor to drawing to match description on Note 10.
 - **Note 11:** Added reference "See Table 5-C, page 43-46 for list of approved meter sockets."
- **Figure 3-E, page 23 – OVERHEAD SERVICE, PERMANENT METER POLE**
 - **Note 4:** Added "Customer will bond 480 volt neutral conductor to all metal service entrance raceways."
 - **Note 5:** Revised for clarity.
 - **Note 6:** Added "Pole foam back-fill may be used, if approved by Company" and graphically added shaded area at bottom of pole in drawing to match description in Note 6 for emphasis.
 - **Note 10:** Added reference "See Table 5-C, page 43-46 for list of approved meter sockets."
 - **Note 11:** Added "The service raceway may not contain any LB or other open connections."

Summary of 2017 Amendments (page 2 of 6)

SECTION 300 – OVERHEAD SERVICES (cont'd)

- **Figure 3-F, page 24 – OVERHEAD SERVICE, WALL MOUNTED METER, SECONDARY SERVICE (NON-RESIDENTIAL) SINGLE OCCUPANCY**
 - **Note 7:** Added “The service raceway may not contain any LB or other open connections.”
 - **Note 9:** Added “The service raceway may not contain any LB or other open connections.”
 - **Note 12:** New - Clarifies need for external mounted service disconnect switch when converting a single-metered structure to multiple-metered structure for three-phase service.
 - **Note 13:** New - Clarifies the requirement for an external mounted service disconnect switch for three-phase service. Graphic/drawing revised to show a customer three-phase service switch under the metering equipment.
 - **Note 14:** New - Clarifies that single-phase service with SELF-CONTAINED metering equipment does not require an external service disconnect switch. If Instrument-rated single-phase metering is deemed necessary, an external service disconnect switch will be required.
- **Figure 3-G, page 25 - OVERHEAD SERVICE, TWO OR THREE SECONDARY SERVICE (NON-RESIDENTIAL) METERS**

Drawing revised graphically to show difference in single-phase and three-phase service disconnect requirements.

 - **Note 1:** Revised for clarity and added reference to section 500.11, page 40 for marking sockets.
 - **Note 2:** Added “The service raceway may not contain any LB or other open connections.”
 - **Note 14:** Clarifies requirement for an external mounted service disconnect switch for three-phase service adjacent to and on the load-side of metering equipment. All instrument-rated metering equipment, regardless of single-phase or three-phase, requires that an externally mounted service disconnect be installed on the load-side of metering equipment.
- **Figure 3-H, page 29 - OVERHEAD SERVICE, FOUR OR MORE SECONDARY SERVICE (NON-RESIDENTIAL) METERS**
 - **Note 1:** Revised Figure # and page # “see Figure 5-F, page 51”.
 - **Note 2:** Added “The service raceway may not contain any LB or other open connections.”
 - **Note 14:** Revised page # “500.11, page 40”.
 - **Note 17:** Revised to clarify the requirement for an external mounted service disconnect switch for three-phase service adjacent to and on the load-side of metering equipment. To clearly state that all instrument-rated metering equipment, regardless of single-phase or three-phase, requires that an externally mounted service disconnect be installed on load-side of metering equipment.
- **Figure 3-I, page 30 – OVERHEAD SERVICE, THREE-WIRE DELTA**
 - **Note 3:** Added “The service raceway may not contain any LB or other open connections.”
 - **Note 5:** Revised page # and removed parenthesis “500.04, page 36”.
 - **Note 6:** Revised to clarify the requirement for an external mounted service disconnect switch for three-wire, delta service must be installed adjacent to and on the load-side of metering equipment.
 - **Note 7:** Revised for clarity and added reference to Table 5-C, pages 43-46 for list of approved meter sockets.
 - **Note 8:** New - Clarifies Customer’s grounding electrode conductor and what is permitted to be routed through the meter socket enclosure. Company reserves the right to refuse installation of service upon observing an unsafe Customer connection.

SECTION 400 – UNDERGROUND SERVICE

- **400.02, page 28 - Underground Service Lateral for UG Residential Customers and Non-residential Service Customers served from Overhead Transformation**

Revised first sentence to add - “... to the Point of Delivery, see Service Point 100.01.29, page 5.”

Also revised last sentence from “reference Figure 5-A, pages 42 & 43” to “reference Tables 5-A & 5-B, pages 41 & 42”.
- **400.03, page 28 - Underground Services to Non-Residential Service Customers Fed from Padmounted Transformers, Handholes, or Service Pedestals for all three-phase and single-phase greater than or equal to 20 kW**

Revised 400.03, page # from 29 to 28. Also revised fifth sentence reference from “Figure 5-D, page 51” to “Figure 5-E, page 50”. Also revised third sentence from “See Figure 5-A, pages 42 & 43” to “See Tables 5-A & 5-B, pages 41 & 42”.
- **400.04, page 29 - Underground Services to Multi-metered Apartments**

New - Clarifies Company/Customer responsibility for underground service to apartments. Included a paragraph regarding - 120/208V, single-phase service to apartments, in order to clarify Company-Customer responsibility, and a reference to section 100.01.30, page 5 and 500.09, page 40.

Summary of 2017 Amendments (page 3 of 6)

SECTION 400 – UNDERGROUND SERVICE (cont'd)

- **400.05, page 29 - Underground Service, Self-contained Meter Wiring**
Revised from 400.04 to 400.05. And revised reference page# “See Figure 4-A, page 30”.
- **400.06, page 29 - Underground Service Meter for One Residential or One Non-Residential (One Secondary) Service**
Revised to combine Old 400.05 to 400.06 and reflect the new Figure 4-B on page 31 (Old Figure 4-B and 4-C were combined).
- **400.07, page 29 - Underground Service, Two or More Non-Residential Service Meters with Service Enclosure**
Revised Figure # and page # “see Figure 4-C, page 32”.
- **400.08, page 29 - Underground Service, Two or More Non-Residential Service Meters with Meter Pack**
Revised Figure # and page # “see Figure 4-D, page 33”.
- **400.09, page 29 - Underground Service, Meter Rack (see Figure for reference to Meter Pedestal)**
Revised the Figure 4-E title to - “Underground Service, Meter Rack”, the 2014 ESG referred to the “meter pedestal design” as the preferred option. Note added to Figure 4-E, page 34 regarding continued acceptance of meter pedestal design by following the Company Standard Construction Drawing 212-305, see Company for details.
- **400.10, page 29 - Underground Service to Mobile or Manufactured Homes**
Revised Figure # and page # in first sentence - “Figure 4-E, page 34”. Also revised reference Figure page # in third sentence “Figure 4-B, pages 31”.
- **400.11, page 29 – Other Underground Services**
Revised reference “Section 600, page 57” and “Figure 6-B, pages 59”.
- **Figure 4-A, page 30 – UNDERGROUND SINGLE PHASE SERVICE, SELF-CONTAINED METER WIRING, SINGLE OCCUPANCY STRUCTURES**
 - **Note 2:** Added reference to “See Table 5-C, pages 43-46 for list of approved meter sockets.”
 - **Note 3:** Revised to add “The service raceway may not contain any LB or other open connections.” And a reference to “See Figure 4-B, page 31 for oversized PVC conduit/raceway fitting details.”
 - **Note 7:** Removed “Two 2-hole straps may be required by the inspecting authority”
New - “Company service lateral conductors must enter from the BOTTOM of meter socket, not from the side and not from the top.”
 - **Note 8:** New - Describes oversized PVC conduit/raceway fitting and lists approved sources, it was added to address the separation of conduit and vertical raceway, due to various soil conditions.
- **Figure 4-B, page 31 - UNDERGROUND SINGLE PHASE SERVICE FOR ONE RESIDENTIAL OR ONE NON-RESIDENTIAL (ONE SECONDARY) SERVICE**
NEW Figure 4-B (2016 ESG): Combined Titles and Notes of Old (2014 ESG) Figure 4-B and Old (2014 ESG) Figure 4-C.
 - **Note 1:** Moved Note 1 of Old Figure 4-B to Note 9 of New Figure 4-B. Note 1 of Old Figure 4-C was moved to Note 1 of New Figure 4-B and revised to reference “Tables 5-A & 5-B, pages 41 & 42” for approved meter socket locations.
 - **Note 2:** Revised for clarity and added reference to “Table 5-C, pages 43-46” for list of approved meter sockets.
 - **Note 3:** Revised to add “The service raceway may not contain any LB or other open connections.”
 - **Note 5:** Revised “Note 5 of Old Figure 4-B” for clarity. Combined “Note 5 & Note 6 of Old Figure 4-C” to New Note 5 of Figure 4-B.
 - **Note 6:** “Note 6 of Old Figure 4-B is the same as that of New Figure 4-B.” Moved “Note 7 of Old Figure 4-C” to New Note 6 of New Figure 4-B.
 - **Note 7:** Removed “Note 7 of Old Figure 4-B and Note 8 of Old Figure 4-C.” New Note 7 of New Figure 4-B describes an oversized PFC conduit/raceway fitting and lists approved Mfg. sources and part numbers to address the separation and movement of conduit and vertical raceway due to various soil conditions.
 - **Note 8:** New - “Company service lateral conductors must enter from the BOTTOM of meter socket, not from the side and not from the top.”
 - **Note 9:** New - Moved Note 1 of Old Figure 4-B to Note 9 of New Figure 4-B. “Company owned service lateral conductors are installed by Company and line-side (top) connections made up by Company. Customer’s service conductors are installed and connected in socket by Customer.”

Summary of 2017 Amendments (page 4 of 6)

SECTION 400 – UNDERGROUND SERVICE (cont'd)

• **Figure 4-C, page 32 – UNDERGROUND SERVICE METERS, TWO OR MORE NON-RESIDENTIAL SERVICE METERS WITH SERVICE ENCLOSURE**

NEW Figure 4-C (2016 ESG) was Old (2014 ESG) Figure 4-D.

- **Note 1:** Revised to correct reference page numbers.
 - **Note 3:** Revised for clarity Customer to “provide” and added “Company locks or seals may be required”.
 - **Note 4:** Revised to add “Company locks or seals will be installed at each meter socket. See Table 5-C, pages 43-46 for list of approved meter sockets.”
 - **Note 7:** Revised reference in first sentence from “Figure 5-A, pages 42 & 43” to “Tables 5-A & 5-B, pages 41 & 42.”
 - **Note 8:** Clarifies the requirement for an external mounted service disconnect switch for three-phase service adjacent to and on the load-side of metering equipment, unless prohibited by local authority. A service disconnect switch is not required for self-contained single-phase metering equipment. All instrument-rated metering equipment, regardless of single-phase or three-phase, requires that a service disconnect be installed on the load-side of metering equipment.
 - **Note 9:** Revised to add “The service raceway may not contain any LB or other open connections.”
 - **Note 14:** Revised to correct reference page number “500.11, page 40”.
- #### • **Figure 4-D, page 33 – UNDERGROUND SERVICE, METERPACK**
- NEW Figure 4-D (2016 ESG) was Old (2014 ESG) Figure 4-E. Also drawing modified graphically to match Note 10 showing typical placard placement on meterpack.
- **Note 1:** Revised to correct reference “Figure 5-E, page 51”.
 - **Note 3:** Revised reference from “Figure 5-A, pages 42 & 43” to “Tables 5-A & 5-B, pages 41 & 42.”
 - **Note 5:** Revised to add “The service raceway may not contain any LB or other open connections.”
 - **Note 6:** Revised to add “The service raceway may not contain any LB or other open connections.”
 - **Note 8:** Revised to clarify that meter stacks that have 5 or more vertical positions, a permanent hard-surface is required, etc. Also added that a maximum mounting height to the center of the top meter socket is 6 feet.
 - **Note 10:** Revised to correct reference page number “500.11, page 40”.
- #### • **Figure 4-E, page 34 – UNDERGROUND SERVICE, METER RACK**
- NEW Figure 4-E (2016 ESG) was Old (2014 ESG) Figure 4-F. All Notes 1-7 were revised and the drawing was modified to update with Meter Rack design that replaces the meter pedestal design with concrete foundation. The Meter Pedestal with concrete foundation is still available, see Company Standard Drawing 212-305 for details and verify lead-times related to the procurement of the concrete foundation used with a meter pedestal.

SECTION 500 – METERING AND ASSOCIATED EQUIPMENT

• **500.01, page 35 – GENERAL**

Revised page # and reference in last sentence from “Figure 5-A, pages 42 & 43” to “Tables 5-A & 5-B, pages 41 & 42.”

• **500.02, page 35 – WORK ON METER INSTALLATIONS**

Revised page # and reference page # in *NOTE “500.06, page 39”.

• **500.04, page 36 – LOCATION OF METER**

Revised page # and reference in middle of paragraph, ninth sentence from “Figure 5-A, pages 42 & 43” to “Tables 5-A & 5-B, pages 41 & 42.”

• **500.06, page 36 –METER SOCKETS**

Revised page #, also reference from “Figure 5-B, pages 44-47” to “Table 5-C, pages 43-46” and added “Customer must permanently mark EACH meter socket at multimeter locations as per 500.11, page 40.”

○ **500.06.02, page 37 – Ganged Meter Socket Assemblies**

Revised references and page numbers “500.11, page 40”, “Table 5-C, pages 43-46” and “Figure 5-E, page 52”.

○ **500.06.03, page 37 – Meter Packs**

Revised references and page numbers “500.11, page 40” and “Figure 4-D, page 33”.

○ **500.06.04, page 37 – Line-side Source Connections**

Revised reference page # “500.06.11, page 39”.

○ **500.06.05, page 38 – Meter Sockets – Secondary Service Less than 200 Amperes**

Revised reference and page # from “Figure 5-B, pages 44-47” to “Table 5-C, pages 43-46”.

○ **500.06.06, page 38 – Power Leg for 240 Volt Delta Service**

Revised reference and page # from “Figure 5-J, page 58” to “Figure 5-K, page 56”.

Summary of 2017 Amendments (page 5 of 6)

SECTION 500 – METERING AND ASSOCIATED EQUIPMENT (cont'd)

- **500.06.07, page 38 – Ungrounded Delta – Meter Socket & Transocket Case Ground Requirements**
Revised reference and page # to “Table 5-C, pages 43-46”.
- **500.06.08, page 38 – Company - Customer Responsibility**
Revised references and page numbers from “Figure 5-A, pages 42 & 43” to “Tables 5-A & 5-B, pages 41 & 42”.
- **500.06.09, page 38 – Meter and Socket Application Guide**
Revised references and page numbers from “Figure 5-B, pages 44-47” to “Table 5-C, pages 43-46”.
- **500.06.10, page 38 – Meter Socket Connections and Voltages**
Revised all references and page numbers.
- **500.06.11, page 39 – Transockets**
Revised references and page numbers and added two statements: “**Factory installed lugs are not to be replaced or removed. Damaged lugs may require replacement of Transocket (See Company for details).**” and “**Only Company authorized personnel may remove a meter from a transocket. See inside the front cover for more details.**”
- **500.08, page 40 - Service Enclosures**
Revised to insert statement: “**All metering equipment and service switches are installed on the load side of service enclosures.** Customer will install service enclosure and maintain Customer connections in the service enclosure. Refer to definition 100.01.25, page 5.” Also revised all references and page numbers.
- **500.09, page 40 - Padmounted Secondary Enclosures**
Revised to insert statement: “Company will specify the appropriate enclosure. Contact Company for additional design options. For reference see Tables 5-A & 5-B, pages 41 & 42 and Oncor Distribution Design Specification DDS-4 at www.oncor.com. All metering equipment and service switches are installed on the load-side of secondary enclosures. See definition 100.01.30, page 5.”
- **Table 5-A, page 41 – SINGLE METER SOCKET LOCATIONS**
Single Meter Socket Locations: Clarified POD for Single-phase Secondary Service greater than or equal to 20 kW and three-phase installations served with Underground Service from Underground Secondary or Padmounted Transformation. Split table-cells for the Secondary Enclosure and Secondary terminals of the Padmounted Transformer for clarity.
- **Table 5-B, page 42 – MULTIPLE METER LOCATIONS**
Revised Table number for separate table of “Multiple Meter Locations”. Revised Underground Service Multi-Family Residential information - Type of service column now reads “Residential, with Service Lateral” and “Residential, with Service Enclosure”. Refer to the “POD Location” column for “Residential, with Service Enclosure” for list of terminals that may be the POD. Also revised information: See “Type of Service” column for “Three-phase served from Padmounted Transformer or Underground Secondary and --- Single Phase greater than or equal to 20 kW”-- split the “POD Location” column into two cells, one for the Secondary Enclosure and one the Padmounted Transformer to specifically show the POD location details for clarity.
- **Table 5-C, pages 43-46 – METER AND SOCKET APPLICATION GUIDE**
Revised Figure # and page # from “Figure 5-B, pages 44-47” to “Table 5-C, pages 43-46”. Updated Manufacturers Names and Part Numbers.
- **Figure 5-D, pages 47-49 – TRANSOCKET CONFIGURATIONS AND CONNECTION DETAILS**
Revised Figure # and page # from “Figure 5-C, pages 48-50” to “Figure 5-D, pages 47-49”. Added typical mounting for the three sizes of transockets and “nominal size” to each detailed transocket listed, see pages 47-48. Added photo and details for “MAXI” transocket to page 48.
- **Figure 5-E, page 50 – TYPICAL SERVICE ENCLOSURES**
Revised Figure # and page # from “Figure 5-D, pages 51-52” to “Figure 5-E, page 50”. Combined photos with table data and notes on one page. Added typical mounting for the “Bus Arrangement” details for 1200A (TSN 310935-page 55) and 2500A (TSN 300313-page 55) enclosures to show buss bar has both options of integrated set-screw and NEMA two-hole spaced holes per bus bar. Note 2 added reference to Appendix A, (NEMA 2-hole) page 61 for connector specifications.
- **Figure 5-F, page 51 – GANG METER SOCKETS MULTI-FAMILY TYPICAL LAYOUTS**
Revised Figure # and page # from “Figure 5-E, page 53” to “Figure 5-F, page 51”.
 - **Note 1:** Revised reference page # “500.11, page 40”.
 - **Note 2:** Revised to insert statement “Company locks or seals will be installed at each meter socket. See Table 5-C, pages 43-46 for list of approved meter sockets.” and added “Company locks and seals will be installed as needed.”
 - **Note 4:** Revised reference page # “500.06.03, page 37”.

Summary of 2017 Amendments (page 6 of 6)

SECTION 500 – METERING AND ASSOCIATED EQUIPMENT (cont'd)

- **Figure 5-F, page 51 – GANG METER SOCKETS MULTI-FAMILY TYPICAL LAYOUTS (cont'd)**
 - **Note 6:** Expanded to include the requirement and details of a hard-surface in front of meterpacks. Revised to insert statement “Maximum mounting height is 6 ft. to the center of the top meter socket. For meter stacks that have 5 vertical positions, a permanent hard surface extending a minimum 24 in. in front of the meterpack and the width of the meterpack is required.

METER SOCKET CONNECTIONS AND VOLTAGES

- **Figure 5-G, page 52 – FORM 1**
Revised Figure # and page # from “Figure 5-F, page 53” to “Figure 5-G, page 52”.
- **Figure 5-H, page 53 – FORM 2**
Revised Figure # and page # from “Figure 5-G, page 53” to “Figure 5-H, page 53”.
- **Figure 5-I, page 54 – FORM 12**
Revised Figure # and page # from “Figure 5-H, page 53” to “Figure 5-I, page 54”.
- **Figure 5-J, page 55 – FORM 16 WYE**
Revised Figure # and page # from “Figure 5-I, page 53” to “Figure 5-J, page 55”.
- **Figure 5-K, page 56 – FORM 16 DELTA**
Revised Figure # and page # from “Figure 5-J, page 53” to “Figure 5-K, page 56”.

SECTION 600 – TEMPORARY SERVICE INSTALLATION

- **600.02, page 57 – Temporary Service from Overhead Secondary**
Revised reference page #.
- **Figure 6-A, page 58 - TEMPORARY SERVICE POLE FROM OVERHEAD SECONDARY**
Revised reference page #.
- **600.03, page 57 – Temporary Service from Underground Secondary**
Revised reference page #.
- **Figure 6-B, page 59 - TEMPORARY SERVICE POLE FROM UNDERGROUND SECONDARY**
Revised reference page #.

APPENDICES:

APPENDIX A, page 60 - Two Hole Compression Lugs for Terminal Connections - MAJOR REVISION

Appendix A is now a “Specification”. Graphic added and list of details added that must be met for Customer provided connectors to be acceptable. Manufacturer part numbers are no longer listed. Added statement in first paragraph that “Mechanical/bolt type connections are not acceptable”.

APPENDIX B, page 61 - One Hole Compression Lugs for Submersible Connections - MAJOR REVISION

Appendix B is now a “Specification”. Graphic added and list of details added that must be met for Customer provided connectors to be acceptable. Manufacturer part numbers are no longer listed. Added statement in first paragraph that “Mechanical/bolt type connections are not acceptable”.

APPENDIX C, page 62 - Primary Metering Equipment Standards - MAJOR REVISION

SAFETY SMART. KNOW THE LAW.

Oncor wants you to be aware of the dangers of making contact with power lines. Electricity, powerful enough to kill, will flow through any metal or other conductive object and an electric arc flash can occur if a conductive object gets too close or touches electric lines. If it is possible during the course of work for someone to move to, or place any objects, within **TEN FEET*** of any high voltage overhead electric line you must first notify the operator of that electric line, at least 48 hours in advance of beginning any planned work closer to the line than those distances and arrange with the operator for permission to complete the work. For lines to be turned off, moved or other arrangements call Oncor at 1-888-313-6862.

*** WARNING - this distance should be increased for voltages above 50 kV (refer to TABLE A, below).**

Table A (ABBEVIATED)

Minimum Clearance Distances to 350 kV:

VOLTAGE (Nominal, Alternating Current)	MINIMUM CLEARANCE DISTANCE
50 kV and below	10 ft.
Over 50 kV to 200 kV	15 ft.
Over 200 kV to 350 kV	20 ft.

Some local Electrical Codes require structures to be located a safe distance away from live overhead high voltage lines, as defined by the National Electrical Safety Code (NESC).

For underground utility cable locating service - call BEFORE you Dig - toll free – 811

**BE SAFE
Around Electricity**

