



DominionSM

**Information and
Requirements for
Electric Service**

*2012 Edition
Blue Book*

Dominion Virginia Power
Dominion North Carolina Power

2012 Blue Book

(Supersedes 2007 Edition)

Dominion Virginia Power

Dominion North Carolina Power

Copyright © 2012 Dominion Virginia Power and Dominion North Carolina Power
All rights reserved

Table of Contents

Introduction	2
New Services, Temporary Services, or a Service Upgrade	3
Energy Diversion.....	4
Utility Damage Prevention.....	5
High Voltage Line Safety Acts in Virginia and North Carolina	6
Summary of Major Changes.....	7
Dominion Company Offices	9
Definitions	14

GENERAL REQUIREMENTS

General	20
General Customer Responsibilities.....	20
Characteristics of Electric Service.....	22
Phase Rotation	23
Non-Residential Motors	23
Space Heating.....	24
Instantaneous Water Heaters.....	24
Electric Welders	24
Protective Devices.....	25
Fault Current	25
Customer Generation	25
Particular Applications.....	26
Transformers	27
Metering	31
Meter Location.....	32
Outdoor Hazardous Meter Locations	34
Acceptable Spacing for Gas & Electric Meter	34
Meter and Service Connections.....	35
Service Connections - General	37
Service Entrance - General	38

OVERHEAD SERVICE REQUIREMENTS

Overhead Service Entrance - General.....	40
Virginia Residential Overhead Service Entrance Plan	42
Overhead Point of Attachment.....	43
Customer Owned Service Mast Installation.....	44
Customer Owned Pole Installation	46
New Overhead Temporary Service	48
Typical Overhead Temporary Rewire Arrangements	52
Overhead Customer Meter Board, Pre-ganged Meter Bases.....	54
Overhead 100 amp, Single Phase, 2-Wire 120V Line, 2-Wire 120 V Load.....	56
Overhead 100 amp, Single Phase, 3-Wire 240/120 V Line, 2-Wire 120 V Load.....	57
Overhead 100 amp, Single Phase, 3-Wire 240/120 V Line & Load.....	58
Overhead 100 amp, Single Phase, 3-Wire 208/120 V, Network Meter.....	59
Overhead 150 and 200 amp, Single Phase, 3-Wire, 240/120 V OR 208/120 V Line & Load	60

Table of Contents

Overhead 200 amp Max, Three Phase, 4-Wire 240/120 or 208/120 V	61
Overhead 320 amp (400 amp Max), Single Phase, 3-Wire 240/120 OR 208/120 V	62
Overhead 320 amp (400 amp Max), Three Phase, 4-Wire, 208/120 V	63

UNDERGROUND SERVICE REQUIREMENTS

Underground Service Plans.....	66
Underground Point of Attachment	67
Underground Service Entrance.....	68
Underground Service Entrance.....	69
Five Foot Rule (Illustrations).....	70
Five Foot Rule	71
Five Foot Rule Exceptions (Illustrations)	72
Five Foot Rule Exceptions	73
Optional Customer Connection Box	73
Customer Conduit for Service Entrance	74
Customer Owned Meter Pedestal.....	78
Underground Temporary Service	80
Typical Underground Temporary Rewire Arrangements	82
Typical Underground Temporary Rewire Arrangements	83
Customer Meter Board, Pre-Ganged Meter Bases.....	84
Customer Owned Meter Support, 400A or Less.....	86
Underground 200 amp and Less, Single Phase, 3-Wire, 240/120 V or 208/120 V Line & Load.....	87
Underground 320 amp (400 amp Max), Single Phase, 3-Wire, 240/120 V or 208/120 V	88
Underground 200 amp Max, Three Phase, 4-Wire, 240/120 V or 208/120 V	89
Underground 320 amp (400 amp Max), Three Phase, 4-Wire, 208/120 V.....	90
Typical Customer Owned Connection Box, 600 V or Less	91
Connection Box Greater than Eight Sets of Conductors	93
Customer Owned Trough with Connection Box, 6 Meters or Less	94

MISCELLANEOUS METERING

Installation for Seven or More Meters from One Service	98
Customer Furnished Combined Meter Stack / Circuit Breaker Panel	100
Ganged Meter Trough, Single Phase, 3-Wire, 240/120 V, 200 amp Max.....	102
Current Transformer (CT) Installation (Illustrations)	104
Current Transformer (CT) Installation	105
Cabinet Bonding - Metallic Conduit.....	108
Cabinet Bonding - Non-Metallic and EMT Conduit.....	109
Customer Owned Switchgear	110
North Carolina Metered Dual Fuel Service.....	114

APPENDIX

Approved Customer Conductors - 600 Volts and Below	116
Metering Equipment Dimensions	117
Meter Bases - Approved Knockout Locations & Conductor Sets / Sizes.....	118

Table of Contents

COASTAL OR CONTAMINATED AREAS

Coastal or Contaminated Areas.....	122
Metering Equipment Dimensions for Contaminated Areas.....	123
Contaminated Meter Bases - Approved Knockout Locations & Max Conductor Size	124

Table of Contents

PROTECT UNDERGROUND UTILITIES!
CALL 48 HOURS BEFORE DIGGING!

Miss Utility in Virginia

811

North Carolina One Call Center

811

I INTRODUCTION

The delivery of safe, reliable electric service requires a well designed and consistent distribution system. In an effort to gain this consistency, Dominion Virginia Power and Dominion North Carolina Power (the "Company") in addition to the Terms and Conditions on file with the appropriate Commission, has established requirements for electrical contractors, engineers, architects, developers, builders, homeowners or others that plan to seek service.

This book contains requirements that are based on many years of experience and were developed to meet system safety and efficiency needs while offering reasonable convenience to Customers. Since technology and Customer needs change, the information in this book is subject to change without notice. An electronic version of the Bluebook is available on-line at <https://www.dom.com/dominion-virginia-power/customer-service/for-businesses/pdf/bluebook.pdf>.

A work request (a new service, a temporary service or a service upgrade) is to be made by the Customer by calling the Company's toll free number (**1-866-DOM-HELP**) or by going to the Company's Internet web site www.dom.com. Builders, developers, or electricians, should call **1-888-569-5700** for a new work request or use the eBuilder Service found on the Company's internet site www.dom.com. A brief overview of the Company's business and construction processes is provided in an effort to improve communications between the Company and the Customer. Providing the Company with as much advance notice as possible will greatly enhance our ability to meet your service needs.

Unless stated otherwise the requirements in this book apply to both residential and commercial installations. Where clarification may be necessary or special circumstances exist, you should contact your local Company office. [A listing of Company offices](#) and telephone numbers is in Section VI.

A bar on the edge of the page will identify significant changes made in this 2012 edition. [Where available, links within the electronic version of this book are shown in a "blue underlined" font.](#)

The revision of this book was made possible due to the suggestions and efforts of many employees. Their assistance and support is acknowledged and appreciated.

The Blue Book Revision Committee for this edition consisted of the following employees:

Bruce Arnette	Rich Paraska
Steve Barnard	Harold Parker
John Bruce	Rick Reeves
Steve Crone	Warren Stevens
Skip Cutting	Dave Strole
Jonathan Deverick	Dave Tuck
Johnny Harris	Evan Vanbrackle
Ken Holmes	Kenny West
Tom Paarfus	

NEW SERVICES, TEMPORARY SERVICES, OR A SERVICE UPGRADE

For builders, developers, or electricians, requests for a new service, a temporary service, or a service upgrade are initiated by calling the Company's toll free number 1-888-569-5700, or by following instructions on the Company's Internet site at www.dom.com, or by using eBuilder at <https://ebuilder.dom.com/Login.jsp>. Customers not qualified as an eBuilder user, work requests may be made by calling 1-866-DOM-HELP.

It is important that requests for service be done as far in advance as possible so that the Company can schedule any necessary work and help resolve any questions about Company requirements.

The following processes begin as soon as the Company receives the service request:

- The project is assigned a unique *Work Request Number* for the design and construction process. **The *Work Request Number* is used by the Company's job tracking system and will be needed for reference if there are any questions. See Note below.****
- Questions about design, the completion of the necessary agreements (Load Letter, site plans, electrical riser diagram, etc.) and Customer responsibilities will be resolved by the Company representative and the Customer. It is the Company's intent to resolve questions as quickly as possible and advance notice of any questions about Company requirements is always appreciated.
- Electric service facilities will be provided by Construction and the meter will be installed following any required electrical inspections.

Note: ** If service is NOT to be connected in the name of the individual or company initiating the work request, the customer who will ultimately be responsible for the electric billing must contact Dominion @ 1-866-DOM-HELP to give authorization for the meter to be set in their name, referencing the project Work Request Number.

PROTECT UNDERGROUND UTILITIES!

CALL 48 HOURS BEFORE DIGGING!

Miss Utility in Virginia

811

North Carolina One Call Center

811

II ENERGY DIVERSION

The ever present and essential nature of electricity makes it a frequent target for theft. Such theft is not only wrong and against state law; it forces honest utility Customers to pay higher costs for their service. You can help prevent the theft or diversion of electricity. Your cooperation in the location and prosecution of those stealing service can be of great help as the Company works to keep your rates down.

The Company will not tolerate energy theft. All suspected instances of theft will be investigated and, where appropriate, cases will be brought to the attention of local law enforcement agencies for prosecution.

The Company seals all electric meters with a seal or suitable locking device and will need at least 24 hours notice to remove a meter. No meter is to be removed or reset without direct, specific authorization from the Company.

No direct load device installed by the Company will be disconnected, bypassed or otherwise disabled without direct, specific authorization from the Company.

Anyone who tampers or damages any metering device, seal or other Company facility is breaking the law. It is illegal to tamper with any metering device used in recording electrical service or to change the reading for that service. It is also illegal to obtain or try to obtain electric service without payment through the use of any method, means, scheme or device.

III UTILITY DAMAGE PREVENTION

Avoid damaging existing underground utilities. The telephone number for Miss Utility in Virginia and the North Carolina One Call Center for North Carolina is **811**.

The Virginia State Corporation Commission (SCC) Division of Utility and Railroad Safety administers safety programs on underground utility damage prevention, investigates all reports of "probable violations" of the Underground Utility Damage Prevention Act and provides free training on damage prevention in Virginia. Their Internet web site (address below) has information on Virginia's Miss Utility call centers, damage prevention requirements, and educational material.

<http://www.state.va.us/scc/division/urs/index.htm>

The North Carolina One Call Center web site (address below) has information on utility damage prevention requirements, Utility Coordinating Committees (UCCs), and educational material.

<http://greensboro.ncocc.org/ncocc/default.htm>

**PROTECT UNDERGROUND UTILITIES!
CALL 48 HOURS BEFORE DIGGING!**

Miss Utility in Virginia

811

North Carolina One Call Center

811

IV HIGH VOLTAGE LINE SAFETY ACTS IN VIRGINIA AND NORTH CAROLINA

Each State has specific requirements concerning personnel working or operating equipment near overhead high-voltage lines of 600 volts or higher. These requirements provide a safe work environment by addressing notification requirements, safety arrangements, warning sign usage, and other job-site practices. Refer to www.osha.gov, your State OSHA Program and the Overhead High Voltage Line Safety Act, in both Virginia and North Carolina, for the specific notification requirements and procedures for working with cranes and other equipment around overhead powerlines.

Cranes and derricks must remain 20 feet away from lines up to 350 kV and 50 feet away from lines greater than 350 kV until the operator has taken specific safety measures. OSHA regulations and state laws require the operator of cranes, derricks, or other similar equipment to notify the power company before working near any overhead power line.

If it is necessary for any person, tools, machinery, ladders, antennae, equipment, supplies, materials or apparatus to be within 10 feet of any overhead high voltage line, the person must notify the power company.

The person responsible for doing the work must call the Company at **1-866-DOM-HELP** within the time frame required by each State. The Company will then assist you in providing a safe working environment. In all cases, notify the Company immediately in an emergency situation.

The Company will need certain information when you call such as: your name; location or address of the proposed tract or parcel of land; the name, address and work day telephone number of the person responsible for the work; a job site telephone number if available; the type and extent of the proposed work; the name of the person for whom the proposed work is being performed; the time and date of the notice; and the approximate date and time when the work is scheduled to begin and be completed.



Remember...

Before working near overhead lines, call Dominion 1-866-DOM-HELP.

Required notices and other procedures for working with cranes and similar equipment around overhead power lines are part of the Overhead High Voltage Line Safety Act, in both Virginia and North Carolina.

V SUMMARY OF MAJOR CHANGES

- 5.1 Updated toll free number to 1-866-DOM-HELP.
- 5.2 NEC and NESC references reflect the requirements in the 2011 edition of the NEC and the 2012 edition of the NESC.
- 5.3 Revised the definition of Customer Conduit to clarify the differences between PVC and HDPE conduit.
- 5.4 Riser Diagram - Also referred to as a one-line diagram, a diagram which shows, by means of single lines and graphic symbols, the course of an electric circuit or system of circuits and the component devices or parts used therein. When requested, the customer will provide a riser diagram showing the connection of customer facilities to the Company's equipment.
- 5.5 Service Entrance Cable - A type of service entrance conductor, a 600 volt multiconductor cable having a flame-retardant, moisture resistant covering.
- 5.6 Service Entrance Conductors - The conductors between the service panel and the point of connection to the service drop or service lateral.
- 5.7 Service relocations must be brought up to the standards stated herein. The Company reserves the right to correct service discrepancies on service upgrades that may have occurred since the initial service has been installed.
- 5.8 A customer cannot cause a voltage flicker, which effects service to an adjacent customer, that exceeds the limits stated in IEEE 1453. At no time can the voltage fluctuation exceed 3%.
- 5.9 140.6 Customers that have ... level three electric vehicle charging load will also qualify for polyphase service.
- 5.10 200.9 When the Customer has contracted for an alternate circuit; at no time can the customer parallel the two circuits. An interlock system is required.
- 5.11 215 New Section on service to Electric Vehicles.
- 5.12 220.4 & 520.8...the Company may give a licensed electrician authorization to remove the seal and meter.
- 5.13 240.13 & 650.12 More than one disconnect may be installed on the load side of the CT cabinet provided these disconnects are all grouped in one location on the same wall in the same room.
- 5.14 240.16 When a self contained meter base enclosure has to be isolated from the neutral, a kit provided by the meter base manufacturer shall be used.
- 5.15 280.11 & 405.7 For overhead services greater than 200 amps, it will be the customer's responsibility to install conduit and service entrance cap in accordance with the NEC. Customer conduit routing, type and size must be approved by the Company.
- 5.16 320.8 Posts are to be a minimum of 6X6 nominal size or timbers laminated to make an equivalent 6X6 post (laminations to be continuous).

- 5.17 405.2 & 555.2 The dual set screw terminals of a 320 amp meter base have a range of #6 to 250 kcm.
- 5.18 450.6 The area below the meter must be free of obstruction which will allow the meter riser to lie flush against the exterior building wall to a depth of 24 inches...The meter and meter riser must be accessible for maintenance and future replacement. If these conditions cannot be met, then the customer will own and install the riser. Customer conduit routing, type and size must be approved by the Company before installation.
- 5.19 590.1 Dimensions of NEMA spacing is provided.
- 5.20 620.2 On three phase applications...each socket shall have a lever bypass rated to the size of the service.
- 5.21 650.5 & 680.3 Customer disconnects are not allowed on the line side conductor feeding the Current Transformer (CT) compartment, unless required by the authority having jurisdiction.
- 5.22 650.22 The maximum size and number of sets of conductors allowed in the smallest CT cabinet is 1 - 500 kcm or 2 - 4/0.
- 5.23 650.24 On three phase grounded wye service, a grounded fourth conductor is always required to provide a ground fault return path to the source transformer. The grounded conductor cannot be less than NEC 250.66.

VI DOMINION COMPANY OFFICES

Emergencies, notification about a “lights out” condition, requests for services, inquires about your account, complaints, etc. should be directed to Customer Service by calling the Company’s toll free number **(1-866-DOM-HELP)**, or by following instructions on the Company’s Internet site at www.dom.com.

Parties having a technical or construction related question about a specific service request (*Work Request Number*) should call the Company representative assigned to that project by calling **1-888-569-5700**. Local construction offices addresses and telephone numbers are listed below for general reference only.

Central Region

Address

East Richmond Office

2540 Charles City Road

(804) 226-7134

Richmond, VA 23231

Gloucester Office

6104 Fiddlers Green Road

(804) 694-3015

P. O. Box 2000

Gloucester, VA 23061

Midlothian Office

14500 Midlothian Turnpike

(804) 379-4801

Midlothian, VA 23113

Northern Neck/Lively Office

5084 Mary Ball Road

(804) 694-3015

P. O. Box 400

Lively, VA 22507

Petersburg Office

1340 East Washington Street

(804) 862-6049

Petersburg, VA 23803-3467

Richmond Office

7500 West Broad Street

(804) 755-5348

Richmond, VA 23294

Altavista Office
(434) 369-2635
3519 Lynch Mill Road
Altavista, VA 24517

Farmville Office
(434) 392-2832
1609 East 3rd Street
P. O. Box 288
Farmville, VA 23901

South Boston Office
(434) 572-5309
2601 North Main Street
P. O. Box 190
South Boston, VA 24592

Southside/South Hill Office
(434) 447-5502
508 East Ferrell Street
P. O. Box 240
South Hill, VA 23970

Fredericksburg Office
(540) 752-2018
980 Warrenton Road
Fredericksburg, VA 22406

North/West Region

Address

Alexandria-Arlington Office
(703) 838-2383
907 West Glebe Road
Alexandria, VA 22305

Fairfax Office
(703) 934-2594
11133 Main Street
Fairfax, VA 22030

Herndon Office
(703) 779-5160
101 Elden Street
Herndon, VA 20170-4810

Leesburg Office (703) 779-5160	620 Sycolin Road S.E. Leesburg, VA 20175-8943	
Springfield Office (703) 440-5303	7888 Backlick Road Springfield, VA 22150	
Warrenton Office (703) 934-2594	8266 Meetze Road Warrenton, VA 20187	
Woodbridge Office (703) 490-2815	1901 Reddy Drive Woodbridge, VA 22191	
Blue Ridge Office (540) 245-4121	2 Technology Drive Staunton, VA 24401	
Charlottesville Office (434) 972-6795	1719 Hydraulic Road Charlottesville, VA 22901 - 2835	
Orange Office (434) 972-6795	13000 James Madison Highway Orange, VA 22960	
Rockbridge/Buena Vista Office (540) 261-5908	2307 Beech Avenue Buena Vista, VA 24416	
Shenandoah/Woodstock Office (540) 459-6517	1133 South Hisey Avenue Woodstock, VA 22664	

Eastern Region

Address

Chesapeake Office

801 S. Battlefield Blvd.

(757) 482-6025

Chesapeake, VA 23322

Chuckatuck Office

5272 Godwin Blvd.

(757) 255-3051

Suffolk, VA 23434

Norfolk Office

2700 Cromwell Road

(757) 857-2372

Norfolk, VA 23509

Peninsula-Hampton Office

902 G Street

(757) 928-2093

Hampton, VA 23661

Virginia Beach Office

4901 Princess Anne Road

(757) 671-3415

Virginia Beach, VA 23462-4309

Williamsburg Office

4059 Ironbound Road

(757) 220-4167

Williamsburg, VA 23188

Dominion North Carolina Power

Address

Ahoskie Office

304 NC 11 North

(252) 332-1801

Ahoskie, NC 27910

Albemarle/Williamston Office

201 West Boulevard

(252) 809-4105

Williamston, NC 27892

Elizabeth City Office

1707 West Ehringhaus Street

(252) 331-6108

Elizabeth City, NC 27909

Kitty Hawk Office

(252) 255-2149

5300 The Woods Road

Kitty Hawk, NC 27949

Roanoke Rapids Office

(252) 308-1016

200 Vepco Street

P. O. Box 99

Roanoke Rapids, NC 27870

VII DEFINITIONS

AHJ Authority having jurisdiction - The organization, office, or individual responsible for approving equipment, materials, installation, or procedure for the premises' wiring system.

Bonding - The permanent joining of metallic parts to form an electrically conductive path, which will assure electrical continuity and the capacity to conduct safely any current likely to be imposed.

Bonding Jumper - A reliable conductor to assure the required electrical conductivity between metal parts required to be electrically connected.

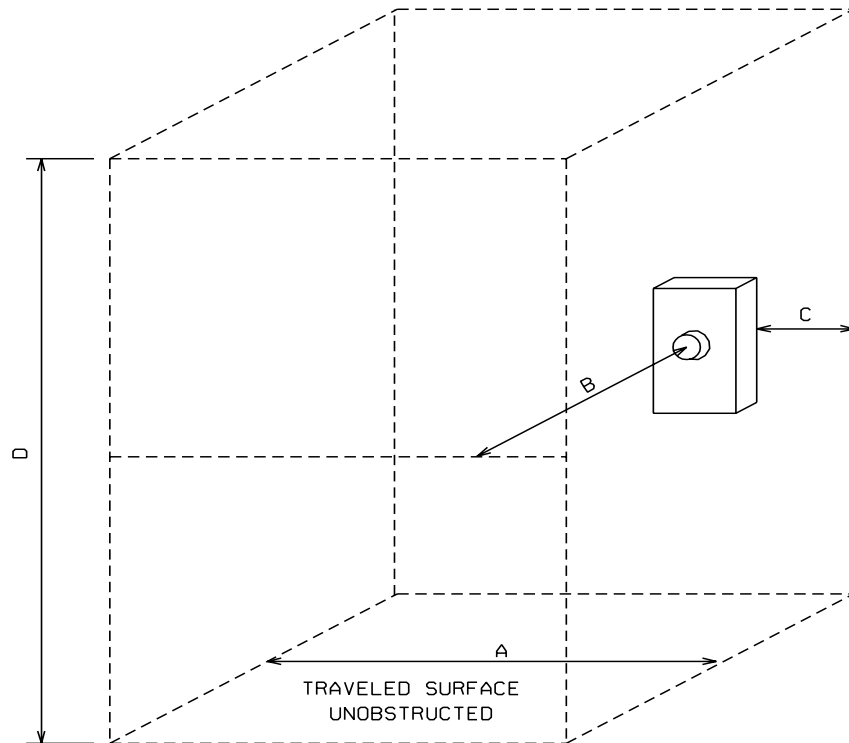
Break-before-Make - A Break-Before-Make transfer switch breaks contact with one source of power before it makes contact with another. It prevents backfeeding from an emergency generator back into the utility line. One example is an open transition Automatic Transfer Switch (ATS). During the split second of the power transfer the flow of electricity is interrupted.

Clear Space - The space reserved for installation, testing, reading and maintenance of meters and associated equipment and other Company apparatus. **Such clear space shall not be used for storage. NEC 2011 110.26.B.**

The measurement of the clear space must be taken outward from the greatest projection of the Company equipment. It shall have a minimum width equal to the width of the installation but in no case will this width be less than 30 inches. Both front and width spacing shall extend vertically upward from the traveled surface to a point no less than 8 feet. **Equipment such as heat pumps, air conditioners, and gas meters are not to be underneath the meter.** The traveled surface shall not exceed a 3 run to 1 rise slope.

Dimensions are from NEC 2011 110.26 unless otherwise stated:

- A. Minimum equal to width of installation but not less than 30 inches.
- B. Minimum of 36 inches, measured horizontally out from point of greatest projection of Company equipment.
- C. Minimum of 6 inches, both sides (Company requirement)
- D. Minimum of 8 feet. (Company requirement)



Company - Company as used herein shall mean Dominion Virginia Power or Dominion North Carolina Power.

Connection Box - The Customer owned housing used in connecting Company conductors to Customer conductors.

Contaminated Area - Generally refers to, but not limited to, coastal areas where salt contamination is present. Can also include areas where other contaminants exist, i.e. dust, fertilizer, corrosives, etc. Each Company office operating near this type of environment has established boundaries for contamination.

Customer - Customer as used herein shall include an applicant for electric service as well as a Customer already being served. Where applicable, it shall include any owner, building tenant, architect, engineer, electrician, agent, manager, etc.

Customer Conduit - any conduit, installed and maintained by the customer, for the installation of Company conductors.

- PVC stick conduit must be electrical grade, gray in color, and meet the requirements of the NEMA TC2 for schedule 40 or thicker. Conduit size refers to the inside diameter.
- HDPE conduit must be electrical grade, black in color and meet the requirements of NEMA TC7 for each trade size. HDPE conduit is not approved for meter risers or for entering a building. Conduit size refers to the outside diameter.
 - HDPE coilable conduit with trade sizes 2” or smaller shall follow Schedule 40. HDPE coilable conduit with trade sizes greater than 2” shall use a Standard Dimension Ratio (SDR) of 13.5 or less.
 - HDPE stick conduit with trade sizes greater than 4” shall use a Standard Dimension Ratio (SDR) of 13.5 or less.

Customer Generation - any generation connected to Customer wiring that could interconnect with the Company power supply. (See Section 190)

Delivery Point - See “Service Point”.

Delivery Point Enclosure - See “Service Point Enclosure”.

Electrical Equipment Room - The room housing the Customer's main disconnecting device. The disconnect device may be a single switch, multiple switches or switchgear which comply with the National Electrical Code requirements.

Exterior Wall - A wall or overhanging wall exposed to the exterior of the building.

Ground - A conducting connection between an electrical circuit or equipment and the earth, or to some conducting body that serves in place of the earth.

Grounded Effectively - Permanently connected to earth through a ground connection with impedance sufficiently low and sufficient current carrying capacity to prevent buildup of voltages that may result in undue hazards to connected equipment or to persons.

Grounding Electrode Conductor - The conductor used to connect equipment or a wiring system to a grounding electrode.

Grounding Conductor, Equipment - The conductor used to connect the noncurrent carrying metal parts of the equipment, troughs, and other enclosures to the system ground.

Interval Data Recorder (I.D.R.) - See Recorder Under Glass.

Manufactured Building - NEC definition Article 545.2 defines this as a building of closed construction, assembled in a manufacturing facility, and is not a manufactured or mobile home. Per NEC Article 545.7, Customer service equipment will be installed in accordance with NEC Article 230.70.

Manufactured Home - NEC Article 550.2 defines this as a transportable structure built on a chassis and designed to be used as a dwelling (with or without a permanent foundation) when connected to the required plumbing, heating, air conditioning, and electrical systems. In general, NEC Article 550.32(B) allows Customer service equipment to be installed on the home if (1) the home is secured in place by an anchoring system or installed on a permanent foundation, (2) the installation complies with NEC Articles 230 and 250, and (3) includes a red warning label concerning grounding.

Meter Room - A room designated to house the Company's meters and/or metering equipment.

Metering Equipment - Any devices used to meter electricity. These devices include meters, meter sockets, meter hubs, meter enclosures, current and/or voltage transformers, current transformers hangers, and cabinets.

Mobile Home - NEC Article 550.2 defines this as a factory-assembled transportable structure built on a permanent chassis and designed to be used as a dwelling (without a permanent foundation) when connected to the required plumbing, heating, air-conditioning, and electric systems. Per NEC Article 550.32(A), Customer service equipment shall be located adjacent (within 30 feet) to a mobile home but can not be mounted in or on the home.

Mobile Home Park - A parcel of land used for the accommodation of occupied mobile homes.

NFPA (National Fire Protection Agency) - The sponsor of the NEC since 1911, the NFPA coordinates the technical committees responsible for establishing NEC requirements.

NEC (National Electrical Code) - The code covering premises wiring done by the Customer. References to the NEC pertain to the 2011 edition.

NESC (National Electrical Safety Code) - The code covering the systems and construction of electric utilities. References pertain to the 2012 edition.

Parallel Conductors - Conductors of like size and type electrically joined at both ends to form a single conductor.

Permanent Foundation - A foundation acceptable to the authority having jurisdiction to which a dwelling is permanently attached such that moving the structure is not likely to occur.

Recorder Under Glass (RUG) - Solid state recorder used to measure demand for billing and used for other purposes.

Recreational Vehicle - A vehicular type unit primarily designed as temporary living quarters for recreational, camping, or travel use, which has its own motive power or is mounted on or drawn by another vehicle. The basic entities are travel trailer, camping trailer, truck camper and motor home.

Riser Diagram - Also referred to as a one-line diagram, a diagram which shows, by means of single lines and graphic symbols, the course of an electric circuit or system of circuits and the component devices or parts used therein. When requested, the customer will provide a riser diagram showing the connection of customer facilities to the Company's equipment.

Service - The conductors and equipment of the Company used in delivering electricity to the Customer wiring system.

Service Drop - The overhead service conductors from the last pole or other aerial support to and including the splices, if any, connecting to the service entrance conductors at the building or other structure.

Service Entrance Cable - A type of service entrance conductor, a 600 volt multiconductor cable having a flame-retardant, moisture resistant covering.

Service Entrance Conductors - The conductors between the service panel and the point of connection to the service drop or service lateral.

Service Equipment - The Customer equipment intended as the main control and means of disconnection of the Company supply.

Service Lateral - The underground service conductors from a padmount transformer, secondary pedestal, secondary, pole or other structure (including any risers) to the first point of connection to the service entrance conductors in a terminal box, meter or other enclosure with adequate space, inside or outside the building wall.

Service Point - The point where the Company's equipment for delivering electric service is connected to the Customer's equipment for receiving the electricity, unless otherwise specified in the agreement with the Customer for the provision of electric service.

Service Point Enclosure - The housing for the service point which may be a meter enclosure, a Current Transformer (CT) cabinet, padmounted transformer, or a cubicle in the Customer's switchgear or other protective housing arrangement approved by the Company and in compliance with the National Electrical Code.

Travel Trailer Park - A park with accommodations primarily for recreational vehicles.

Treated Wood - Lumber or pole that has been pressure treated with either chromate copper arsenate (CCA), creosote or equivalent, certified for use in ground contact, and exhibiting a brand indicating its certification or equivalent.

Vault - A room either above or below grade which houses Company transformer, switches or other equipment.

GENERAL REQUIREMENTS

100 GENERAL

100.1 Nothing within these guidelines is to be construed as specifications for equipment, but is rather intended as installation and application requirements.

100.2 The practices and requirements described in this manual and imposed on Customers shall conform with and be supplementary to the requirements of the National Electrical Code, the National Electrical Safety Code, the Company's Terms and Conditions, and such other requirements established by local authorities having jurisdiction.

100.3 The Company is not obligated to inspect the wiring, equipment or appliances of a Customer. The Customer assumes all liability and risk associated with their acceptance of electricity.

100.4 The Company reserves the right to determine the suitability of apparatus or appliances to be connected to its service by the Customer and to refuse to continue the supply of electricity if it shall determine that the operation of such apparatus or appliance may be detrimental to its general supply of electricity. However, the Company shall have no duty to make such determination or to take such action.

100.5 Connection or attachment to the Company's conductors and/or equipment will be made by Company authorized personnel. Unauthorized attachments or connections are subject to removal by the Company without prior notification.

100.6 Service relocations must be brought up to the standards stated herein. The Company reserves the right to correct service discrepancies on service upgrades that may have occurred since the initial service has been installed.

110 GENERAL CUSTOMER RESPONSIBILITIES

110.1 A request for a new service, a temporary service, or a service upgrade is to be initiated by the Customer by calling the Company's toll free number **(1-888-569-5700)** or following instructions on the Company's Internet site www.dom.com. Initiate this request as far in advance as possible. See "Requests For Service" for an explanation of the Company's process.

110.2 Customers anticipating electrical loads greater than 500 kW must execute an "Agreement for Electric Service" in Virginia or "An Agreement for the Purchase of Electricity" in North Carolina before service will be connected.

110.3 Company representatives will help Customers in obtaining and planning for the use of electricity. Before purchasing motors, switchgear, panel boards, etc., or installing any wiring, the Customer shall obtain in writing from the Company all data relating to voltage characteristics and available fault current. This data is required so that the properly rated equipment may be purchased and installed to eliminate the possibility of error or loss. The Company shall be consulted before new installations are made and before changes are made in or to existing equipment.

110.4 The Company's filed rate schedules and the terms and conditions under which electricity is supplied are available at each local office and will be furnished upon request. Rate applicability may determine metering and wiring requirements. Also refer to the Company's Internet site www.dom.com.

110.5 Electric service normally consists of Company facilities at one point and at one voltage in accordance with the Company's terms and conditions on file with the appropriate regulatory authorities. When the number of delivery points requested by the customer exceeds that which the Company will provide, the customer can install, own, and maintain the secondary service pending approval of the authority having jurisdiction.

110.6 The Company must be able to obtain and maintain adequate rights of way for its facilities in order to supply electricity to a Customer.

110.7 The Company shall have the right of access to the Customer's premises at all reasonable times for the purpose of reading Company meters, removing Company property, and for any other proper purpose. The Company shall have the right to discontinue the supply of electricity without notice if access is denied. Advance notice to the Company is required if access to the Customer premises will be limited. (For example, access may be limited due to security concerns.)

110.8 The Customer shall provide suitable space, with appropriate clear space, for the installation of Company metering apparatus and other Company service equipment. See "[Clear Space](#)" definition.

110.9 Future building additions should be considered when meter locations are selected. Relocation of Company facilities may be necessary and could require payment by the Customer.

110.10 The Customer will obtain Company furnished material at the Company office serving the site where the work is to be performed.

110.11 All items installed and owned by the Customer pursuant to the Company engineering requirements shall remain the property of the Customer and be their sole responsibility for all future maintenance.

110.12 Meter bases that have deteriorated such that an unsafe condition exists will be replaced by the Customer with a Company provided meter base. Meter bases that are loose or pulled away from their supporting structure will be reattached by the Customer.

110.13 The Customer shall not use electricity in any manner which will be detrimental to the supply of electricity to other Customers.

110.14 Facilities used in supplying electricity to the Customer have limited capacity and can be damaged by overloads. Therefore, the Customer shall give adequate notice to the Company and obtain the Company's acknowledgement before making any substantial change in the amount or use of the load connected to the Company's service.

110.15 Company residential flicker specifications are based on 30 amps per ton starting currents. Correcting residential flicker problems created by Customer owned equipment requiring larger starting currents is the responsibility of the Customer. Motors having more than 30 amps per ton of starting current, such as those in larger residential heat pumps or air conditioners may create excessive voltage flicker. Flicker duration can be best minimized by the installation of manufacturer recommended "hard start" kit consisting of a starting capacitor and voltage relay. Use of a "soft start" kit consisting of a starting/running capacitor is not recommended because the capacitor used is smaller and not as effective in limiting voltage flicker.

110.16 In the event a Customer has equipment which will produce harmonics in excess of five percent total harmonic distortion (THD) and/or three percent of any single harmonic at the [delivery point](#), the Customer will provide, at their expense, all equipment necessary to reduce such harmonics to five percent or less THD and/or three percent or less of any single harmonic. (Refer to IEEE 519-1992.) Sources of harmonic distortion include but are not limited to rectifiers, variable speed drives and other similar solid state devices.

110.17 The Customer should provide facilities on the premises for using electric service safely, conveniently, and in amounts that provide the most benefit.

110.18 When two or more meters are located on the same building or structure, whether the meters are grouped or not, **the Customer shall mark each meter base or ganged socket clearly identifying the service that is connected to the meter.** The marking shall be legible and permanent and placed inside and outside the meter enclosure. The inside marking must be somewhere other than on the cover. The meter's corresponding Customer load panel shall be marked in a similar manner.

110.19 On structures or buildings that have only one meter, the building address shall be marked on the meter base if the address is not installed on the building.

110.20 Whenever Current Transformer (CT) cabinets are installed remote from the meter; the meter base and Current Transformer (CT) cabinet must be marked as stated above.

110.21 A customer cannot cause a voltage flicker, which effects service to an adjacent customer, that exceeds the limits stated in IEEE 1453. At no time can the voltage fluctuation exceed 3%.

110.22 Load requirements, municipal ordinances, or limited space may require the owner to construct a vault. The property owner (not necessarily the contract customer) shall execute an agreement with the Company covering the installation of transformers and facilities in a vault or within the building. This agreement, "Underground Right of Way Easement and Vault Agreement" together with its attached Exhibit B, "Requirements for Customer Owned Vault and Cable" is a recordable document. The Company must be consulted for vault specifications and location.

110.23 Any conduit installed for Company conductors shall comply with the customer conduit definition in Section VII.

120 CHARACTERISTICS OF ELECTRIC SERVICE

120.1 The Company normally provides the following secondary voltages:

- Single-phase: two-wire 120V (See [Section 350](#) for two-wire 120V line and two-wire 120V load wiring, and [Section 360](#) for three wire 240/120V line and two-wire 120V load wiring.)
- Single-phase: three-wire 240/120 or 208/120 volts nominal.
- Three-phase: four-wire 208/120 and 480/277 volts grounded wye
- Three-phase: four-wire 240/120 open delta* volts nominal.

*The service size for this three-phase four-wire 240/120 volt open delta connection shall be limited to a total of 200 amps per transformer bank. An open delta connection can create

current and voltage unbalances that could potentially damage the Customer's equipment. Certain types of equipment, such as motors and refrigeration compressors, are more susceptible to damage with this type of connection. Upgrades of existing delta connections beyond 200 amps are classified as a non-standard voltage connection

120.2 Requests for secondary voltages not listed above are considered non-standard voltages. These must have prior approval from the Company's Planning or Engineering Standards departments, as well as approval by the Company's Metering department.

130 PHASE ROTATION

130.1 When a service is connected for the first time, the Company will not be responsible for establishing phase rotation. When reconnecting an existing service, however, the Company will reestablish proper phase rotation.

140 NON-RESIDENTIAL MOTORS

140.1 Motor starting currents range from four to six times normal running current. Unless the Customer takes precautions, this may result in voltage fluctuations and flicker that will be objectionable to the Customer using the motor as well as to other Customers.

140.2 The voltages of motors installed must be rated for the service voltage available or to be made available.

140.3 It is recommended that all motors be connected to circuits separate from lighting circuits and that small motors including those used for appliances, be of a type having the characteristics of low starting current, high power factor and high efficiency.

140.4 Where lighting and power loads are combined on three-phase service supplied from a four-wire wye system, the single-phase load shall be balanced among phases.

140.5 All single phase motors larger than one horsepower shall be connected to operate on not less than 208 volts.

140.6 The Company will provide polyphase service to Customers having one polyphase motor larger than 5 horsepower, or to Customers having multiple polyphase motors which total at least 15 horsepower provided the motors are properly sized for their expected use. Customers that have at least 50 kilowatts or more of lighting or level three electric vehicle charging load will also qualify for polyphase service.

140.7 Any motor which has a horsepower rating not exceeding 10 percent of the Customer's total estimated demand may be started across the line; however, in all cases where service is desired for motors totaling more than fifteen horsepower, the Company shall be consulted.

140.8 A customer cannot cause a voltage flicker, which effects service to an adjacent customer, that exceeds the limits stated in IEEE 1453. At no time can the voltage fluctuation exceed 3%.

140.9 The Company should be consulted prior to procurement of motors to verify service characteristics.

150 SPACE HEATING

150.1 Switching standards for central electric space heating units 40 kW and below including furnaces, boilers and resistance heating elements in heat pumps, when controlled by thermostat or other automatic temperature sensing devices shall be as follows:

150.2 Space heating equipment employing resistance type heating elements rated at 48 amperes (11.5 kW @ 240 volts, 10 kW @ 208 volts or 5.75 kW @ 120 volts) or less, all elements may be switched on or off as a unit.

150.3 Installed capacity exceeding 48 amperes requires staging. The maximum for any one stage will be 48 amperes with at least a 10-second interval between stages. This interval will be the same for both increasing and decreasing load.

150.4 Where installed capacity exceeds 40 kW, or the equipment does not meet the requirements above, the Company shall be consulted.

155 INSTANTANEOUS WATER HEATERS

155.1 The Company must be consulted before these units are installed. Their excessive instant demand for high currents may cause objectionable flicker to the Customer's own lighting.

155.2 The Company normally designs its facilities for a 5500 watt electric water heater and resistance type heating elements up to 11500 watts, both at 240V. Instantaneous water heater elements exceeding these parameters may cause excessive flicker to the customer.

160 ELECTRIC WELDERS

160.1 Electric welding equipment, when used without flicker limiting devices, may cause serious flicker of the Customer's own lighting as well as that of neighboring Customers.

160.2 Among the flicker limiting devices that may be used by the Customer, are transformers, series capacitors, and motor generator or rectifier sets suitable to meet the particular conditions encountered.

160.3 On rural lines and in residential areas, the flicker-limiting device should limit the current to 60 amperes at 240 volts. In these areas, a transformer type welder is recommended.

160.4 Resistance type welders shall not be used without the Company's written permission.

170 PROTECTIVE DEVICES

170.1 All motors that cannot be safely subjected to full voltage starting must be provided with a device to ensure that the motor will be disconnected from the line in case of voltage failure, unless otherwise equipped for automatic starting in case of such failure.

170.2 All single phase and three phase motors shall be equipped with overload protective devices as specified in NEC 430 Part III. It is also recommended that under voltage relays be provided having a time delay feature.

170.3 For three phase service, it is the Customer's responsibility to install phase failure and reverse phase relays.

170.4 All three phase elevator installations, cranes, traveling beds or decks and similar equipment must be provided with reverse phase relays and circuit breakers or equivalent devices to protect the installation in case of phase reversal.

170.5 The Company will not be responsible for damage to Customer's equipment as a result of the failure of the Customer to provide adequate protection, as specified in the National Electrical Code.

170.6 A service disconnect and over current protective device is required ahead of Customer owned equipment on all unmetered services. NEC Article 230 Part VI and Part VII.

180 FAULT CURRENT

180.1 The Company shall determine the available fault current at the delivery point. To do this, the Company must know the Customer's service size, service voltage, detailed load information and the location of the Company transformer and delivery point.

180.2 The Customer is responsible for the installation of protective equipment with an interrupting rating sufficient for the maximum available fault current.

180.3 On initial services and reconnection after alterations to existing services, the Company will limit the available fault current on single family detached homes (including mobile homes not in mobile home parks) to 10,000 symmetrical amperes. This is provided the service size does not exceed 200 amperes. For all other Customers, both on initial connection and reconnection of an existing service after alterations, the Company will only notify the Customer of the available fault current.

190 CUSTOMER GENERATION

190.1 A hazardous condition is possible whenever electric power is fed from the customer on to Company lines. Call the Company (1-888-569-5700) if there are any questions about Company requirements. Call the local electrical inspector if there are any questions about NEC requirements.

190.2 Company approval is not needed for portable or standby generators that use either manual or automatic "break-before-make" switching processes to connect to loads. This process disconnects the Customer from Company electrical facilities and prevents a back feed situation.

190.3 Regardless of compliance with NEC requirements, prior written Company approval is required for processes that allow the Company's electrical facilities to be connected (even if only for a few cycles) in parallel or in closed-transition mode. Examples of these are:

- Portable or standby generators using “make-before-break” switch gear or transfer equipment;
- Power producing facilities that operate in parallel or in closed-transition mode with Company facilities. Examples are distributed generation, rotating generators, solar photo-voltaic systems, fuel cells, emergency lighting, essential equipment power sources, etc.

190.4 It is highly recommended that the written Company approvals required above be obtained during the design process and prior to the purchase of equipment.

190.5 NEC References are listed below.

Article 700 - Emergency Systems

Article 701 - Legally Required Standby Systems

Article 702 - Optional Standby Systems

Article 705 - Interconnected Electric Power Production Sources

200 PARTICULAR APPLICATIONS

200.1 Service specifications should be obtained from the Company before the purchase of equipment such as:

- X-ray equipment, Variable speed drives, Radio transmitters
- New or unusual applications, Electronic computers, Data processing equipment
- Electric heaters, Silicon control rectifiers

200.2 The Company endeavors to provide an uninterrupted supply of electricity. It does not guarantee there will be no noise, transients, voltage dips or outages on its system. It is the Customer's responsibility to protect his equipment from these situations. Various Customer installed and owned conditioning equipment is available depending on the amount of protection deemed necessary.

200.3 The Customer can install a separate circuit within the facility to serve a sensitive system to protect it against most problems originating within the Customer's facility.

200.4 The Customer can install surge protectors to protect equipment against high voltage spikes. Such equipment must be used in accordance with manufacturer's specifications, especially with regard to energy handling capability. Surge protectors offer no protection against noise, voltage dips or flicker.

200.5 Several voltage regulators designed specifically for computer applications are available for installation by the Customer. They consist of fast response regulating transformers to provide protection against over and under voltage conditions and isolation circuitry to protect against noise, surges and transients. Regulators protect against about 95 percent of all problems; however, they do not protect against a complete interruption.

200.6 The Customer can install an uninterruptible power supply (UPS). The most common UPS consists of a rectifier which is connected to the electrical service from the Company. The rectifier supplies direct current (DC) power to charge a battery bank and to power an inverter. The inverter transforms the DC power to alternating current (AC) power for use by the load. When the Company line fails, the battery bank continues to supply power to the inverter with no noticeable interruption. The battery bank can be sized to supply power for a specified period of time (from a few minutes to several hours). By using a rectifier and inverter system, the load is completely isolated from noise, transients, dips or spikes that might appear on the Company line and other circuits in the facility.

200.7 The Company's Power Quality department is available to assist you in recommending the best course of action to take in resolving your power quality concerns. For the resolution of any of power quality issues, contact our local office.

200.8 In accordance with NEC Articles 695 and 230.82 and when approved by the local inspection authority, the Company will allow electric service to a fire pump ahead of the Customer's service disconnecting means via:

- a separate metered service, requires a fourth wire neutral for metering, #10 cu or greater.
- the load side of a CT metered service, or
- from the line side of a CT metered service to an additional separate metered service, requires a fourth wire neutral for metering, #10 cu or greater.

200.9 When the Customer has contracted for an alternate circuit; at no time can the customer parallel the two circuits. An interlock system is required.

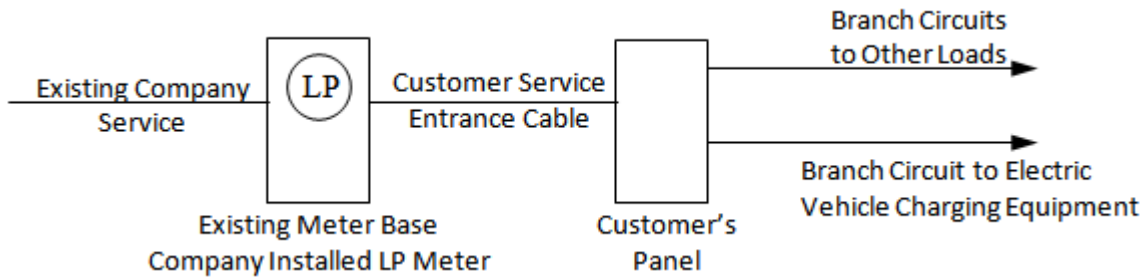
210 TRANSFORMERS

210.1 The Customer shall contact the Company during the design stage for the location and specifications of the Company transformer(s). This must be done early in the design phase so the Customer will be aware of, and comply with the Company's requirements for transformer(s), especially if located below grade, inside or on the building. The Company also needs certain information from the Customer to size the transformer in order to be able to advise them of the maximum available fault current.

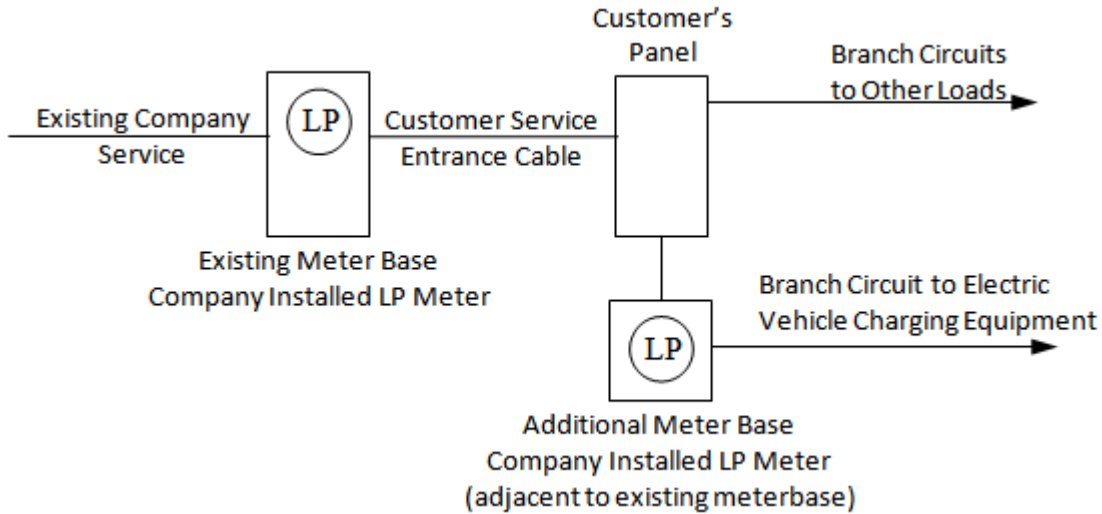
215 ELECTRIC VEHICLES

The Company has developed rates to incent a limited number of residential customers to charge electric vehicles during “off peak” times. Use of the EV rates requires the service be metered with a load profile (LP) meter. The Company has developed five different arrangements for service to electric vehicles. These installations are restricted for Electric Vehicles only.

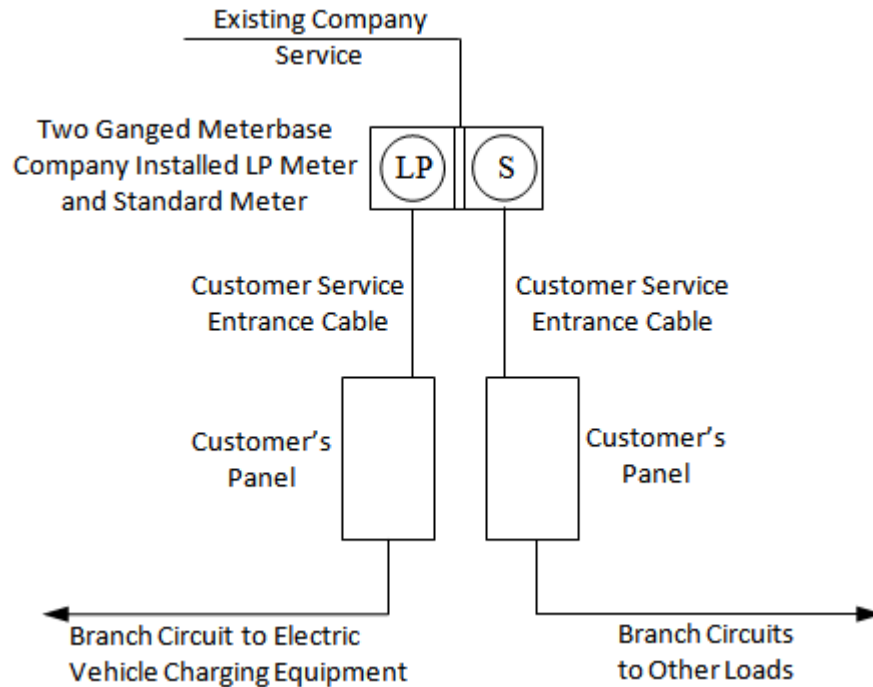
- EV Whole House LP - the existing meter can be replaced with a LP meter thus placing the entire house, including the electric vehicle, under time of usage rates.



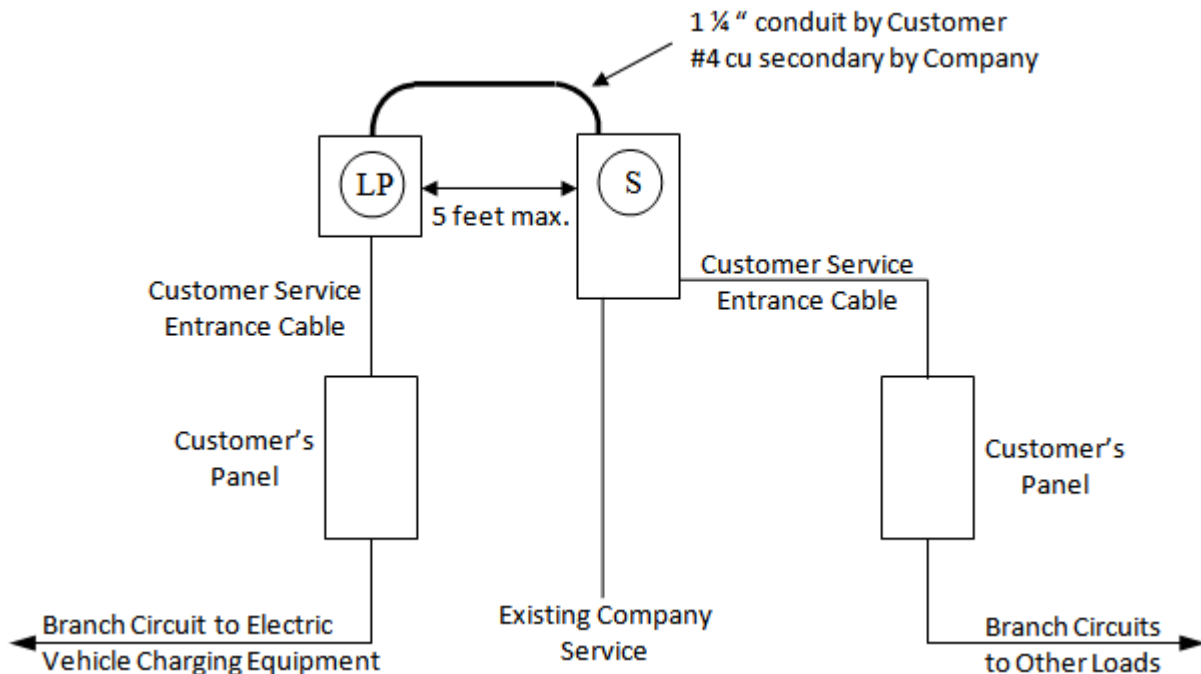
- Submeter from the Customer's Panel (preferred) - a sub-meter can be installed behind a separate breaker from the customer's panel. The sub-meter must be located outside and adjacent to the existing meter base.



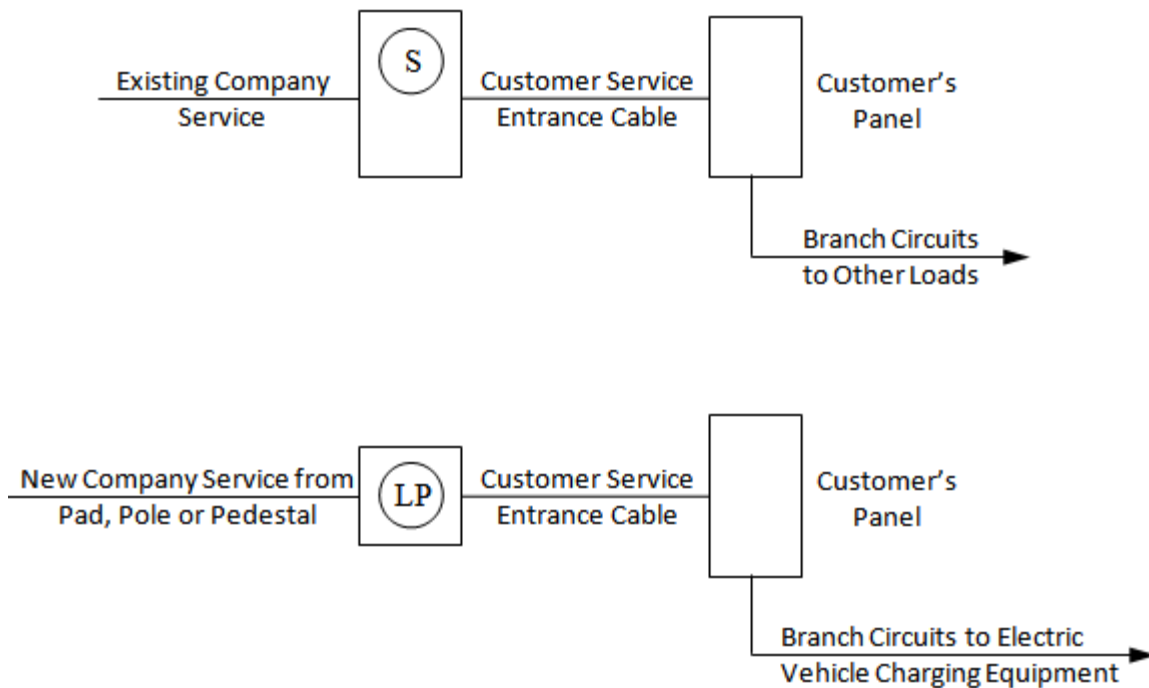
- Two Ganged Meter base (limited to 200 amps or less) - the existing meter base can be replaced with a two ganged meter base. One meter will be a LP meter serving only the electric vehicle. The second meter will be a standard meter serving the remainder of the service.



- A Separate Meter from the Line Side of an Underground fed 320 amp Meter base (non-contaminated areas only) - a separate service conductor can be tapped from the line side terminals. The tap to exit through the top knockout of the meter base in 1.25 inch conduit. The second meter must be located on the same wall and within five feet of the 320 amp meter base.



- Install a Separate Appurtenant Service - a separate service can be installed to a metering point serving only the electric vehicle charger. The service conductor must originate from a pole, pedestal or transformer. The service conductor will not tap an existing underground secondary conductor unless an above ground pedestal is installed. The meters must be on separate structures.



220 METERING

220.1 Meters and test switches are furnished, owned, installed, and maintained by the Company.

220.2 Meter bases that have deteriorated such that an unsafe condition exists will be replaced by the Customer with a Company provided meter base. Meter bases that are loose or pulled away from their supporting structure will be reattached by the Customer.

220.2 Devices such as meter sockets, meter hubs, meter trims, meter enclosures, current and/or voltage transformers, current transformer (CT) hangers and cabinets will generally be furnished by the Company. These devices are installed by the Customer at their expense but are for the sole use of the Company. Except for the Customer's bonding and service conductors, no Customer equipment is permitted in or on any of the Company devices.

220.3 When a Customer elects to provide their own meter socket(s), the location and type of meter socket(s) must be approved by the Company. All meters shall be sealed by the Company. All cabinets, troughs, connection boxes, and switch boxes ahead of the meter or metering devices shall be arranged for sealing before service connection is made and they shall be sealed by the Company.

220.4 Where it is necessary that any Company seal (or locking device) be broken or removed, the Company shall be consulted twenty-four hours in advance. A Company representative will arrange to remove the seal. (The foregoing is not intended to apply to an emergency situation.) In special circumstances, such as service upgrades, the Company may give a licensed electrician authorization to remove the seal and meter. Immediately upon completion of such work, the electrician shall notify the Company and the seal will be replaced by an employee of the Company.

220.5 Self-contained metering is not permitted on 480/277-volt services. Existing installations will be converted to Current Transformer (CT) metering when the service is upgraded.

220.6 Company owned CT metering is not permitted in Company owned or Customer owned transformers.

220.7 When two or more meters are located on the same building or structure, whether the meters are grouped or not, the Customer shall mark each meter base or ganged socket clearly identifying the service that is connected to the meter. The marking shall be legible and permanent and placed inside and outside the meter enclosure. The inside marking must be somewhere other than on the cover. The meter's corresponding Customer load panel shall be marked in a similar manner.

220.8 See [Section 730](#) for the approved entry and exit knockouts on Company meter bases. No holes shall be cut without securing Company approval. The existence of a knockout does not necessarily mean it can be used.

220.9 See [Section 700](#) for approved conductor sizes and [Sections 710/720](#) for meter base sizes.

230 METER LOCATION

- 230.1 The Company reserves the right to designate the meter location. See “clear space” definition.
- 230.2 Metering equipment for all residential services shall be located outside unless otherwise approved by the Company.
- 230.3 For new detached single family residential structures, the meter base shall be located on the front or side of the house.
- 230.4 The Company will designate the location of metering equipment for nonresidential, commercial, industrial, and large residential apartment projects. Normally, the meter shall be located outside, unless otherwise approved by the Company.
- 230.5 The Customer shall provide and maintain a suitable space for the installation of the necessary metering equipment. This space shall be readily accessible and convenient for reading, testing, maintaining and servicing of the metering equipment. See definition of Company required “[Clear Space](#)”.
- 230.6 Advance notice to the Company is required if access to the Customer premises will be limited. (For example, access may be limited due to security concerns.)
- 230.7 Meter bases that have deteriorated such that an unsafe condition exists will be replaced by the Customer with a Company provided meter base. Meter bases that are loose or pulled away from their supporting structure will be reattached by the Customer.
- 230.8 Metering equipment shall be installed on a substantial support or section of a building, substantially free from vibration, in a manner that will prevent separation of the metering equipment from the mounting surface. Anchoring devices used to secure metering equipment must be long enough to pass through siding, sheathing or other surface treatments and terminate in a structural member of a building wall or be suitably anchored on a masonry wall. Metering equipment shall be protected from damage by the elements and/or the negligent or deliberate acts of persons. All openings shall be covered to prevent the entry of wildlife or introduction of foreign materials.
- 230.9 All meter installations shall be arranged so that the center of the meter is not more than 6 feet or less than 4 feet above the final grade or the final grade of the traveled surface (See the definition of “[Clear Space](#)”). A 5-foot mounting height is preferred.
- 230.10 When two or more meters are served from a single entrance, all meters shall be grouped at a location approved by the Company. Where this is not possible due to physical limitation, the Company shall be consulted for an alternate arrangement.
- 230.11 Multi-story Residential Buildings – The Customer’s switchgear must be located on the first floor or first sub-floor and must comply with the Company’s five-foot rule. The Company prefers that all meters be located and grouped on the first level floor. Where this is not possible due to physical limitation, the Company shall be consulted for an alternate arrangement. The Company will cooperate with the owners of high-rise residential buildings who request the Company to own multiple meters behind Customer-owned wiring.

230.12 Meter installations shall be arranged as shown on the drawings in this booklet. Under special conditions, the dimensions shown may be varied with the Company's written approval.

230.13 Whenever residential service entrance wiring has to be replaced or changed for any reason other than emergency restoration of service, indoor meters shall at that time be brought to an outdoor location in compliance with the Company's requirements and specifications.

230.14 Where the most practical metering location will be on a pole, such installation will normally be on a Customer owned pole. However, for installations in excess of 600 volts, the metering equipment will be located on a Company owned pole located on the Customer's property.

230.15 Where a meter must be installed on a piling foundation of the building to be served, the meter shall be located on an outside face of an outside piling to prevent future enclosure of the meter.

230.16 A meter shall not be located in any location where it may become enclosed in the future.

230.17 Normally, the Company will not approve a meter location on or under a balcony, porch, carport, deck, catwalk or stairs.

230.18 Meter enclosures for underground services should not be placed on areas above or below cantilever construction. If this is the only practical location, the Customer, at their expense, shall provide and install a substantial support for the Company's riser conduit. The Company shall be consulted prior to installation to verify that the proposed support will be adequate.

230.19 The Company shall be consulted prior to any new construction that would prohibit or make more difficult any repairs to or replacement of the existing service lateral.

230.20 Per NEC Article 550.32(A), Customer service equipment shall be located adjacent (within 30 feet) to a mobile home but can not be mounted in or on the home. (See definition of "[mobile home](#)".)

230.21 In general, NEC Article 550.32(B) allows Customer service equipment to be installed on manufactured home if (1) the home is secured in place by an anchoring system or installed on a permanent foundation, (2) the installation complies with NEC Articles 230 and 250, and (3) includes a red warning label concerning grounding. (See the definition of "[manufactured home](#)".)

230.22 Floating facilities, piers and marinas will be served on land at a mutually agreeable location with the metering equipment located in an equipment house or on a suitable Customer-owned structure or meter pedestal.

230.23 All Company transformers and metering equipment shall be installed not less than 2 feet above mean high water.

231 OUTDOOR HAZARDOUS METER LOCATIONS

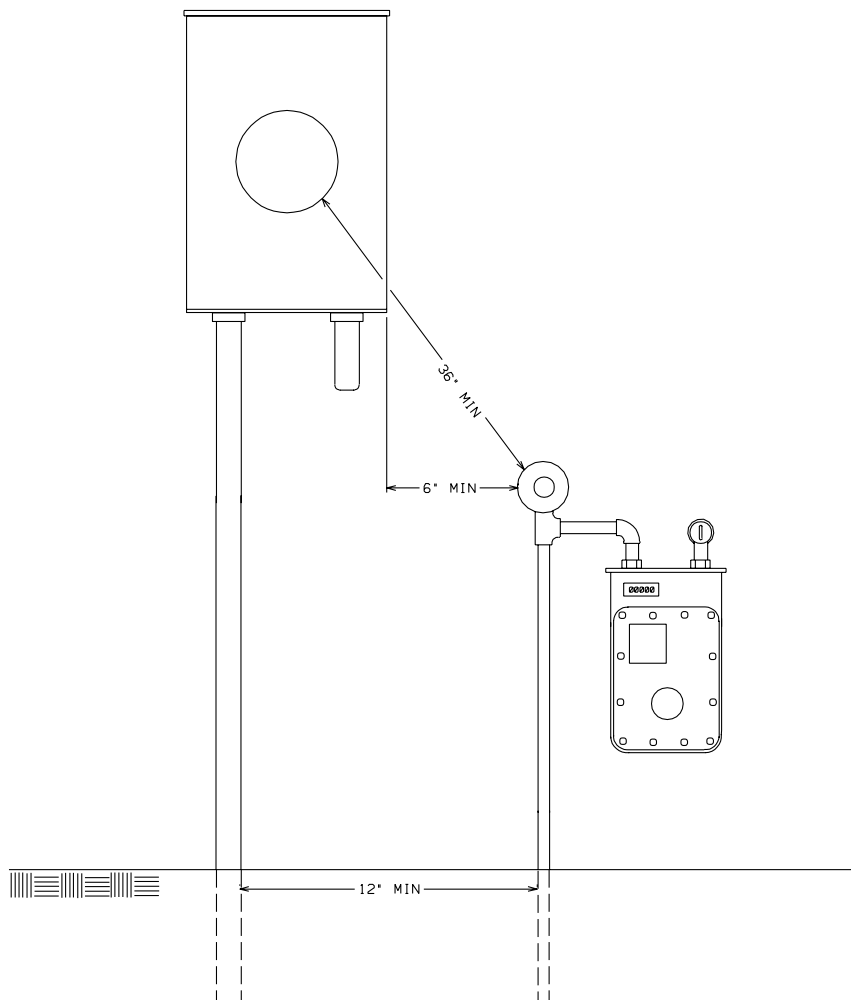
231.1 An outdoor meter (not the enclosure but the meter itself) is to be located at least three (3) feet away from an outdoor residential or commercial natural gas meter's regulator vent. (See drawing in Section 232.) It is to be located at least fifteen (15) feet away from natural gas industrial regulator station connections, valves, or gauges. (See NFPA 54). Also see definition of Company required "[Clear Space](#)".

231.2 An outdoor meter (not the enclosure but the meter itself) is to be located at least ten (10) feet away from LP gas tanks/cylinders that are filled on site. This distance can be reduced to five (5) feet if the LP gas tank/cylinder is filled off site. (See NFPA 58.)

231.3 An outdoor meter (not the enclosure but the meter itself) is to be located at least twenty (20) feet away from residential or commercial gasoline pumps, ten (10) feet away from gasoline fill pipes, and three (3) feet away from gasoline vent pipes. (See NEC 514.)

232 ACCEPTABLE SPACING FOR GAS & ELECTRIC METER

232.1 The Company does not allow gas meters to be located underneath Company apparatus. The gas must be a minimum of 36" from the electric meter. (See NFPA 30) See definition of Company required "[Clear Space](#)".



240 METER AND SERVICE CONNECTIONS

240.1 The Customer shall in all cases furnish and install wiring for meter connections in a manner approved by the Company. On installations requiring Current Transformers(CT)s, the Customer will furnish and install conduit for the meter control wiring in accordance with any of the applicable specifications in this manual. The Company will install the metering control wiring.

240.2 See [Section 730](#) for the approved entry and exit knockouts on Company meter bases.

- No holes shall be cut without securing Company approval.
- The existence of a knockout does not necessarily mean it can be used.

240.3 The Company provides, installs and wires the fifth terminal when required on Company meter bases.

240.4 Effective June 9, 1999 the Company began allowing electrical contractors to make up Customer owned conductor connections in meter sockets equipped with "lay-in-type" connectors. All single phase meter bases utilize lay-in type connectors. Contractors making these connections shall refer to [Section 730](#) as well as follow the instructions below:

1. Remove just enough insulation including any internal plastic sleeving from the aluminum conductor to ensure metal to metal contact.
2. Wire brush the outer surface strands of the exposed aluminum conductor to remove any oxidation that may have formed since the product was manufactured. Sometimes this oxidation is not highly visible.
3. Use an approved inhibitor (without grit) equivalent to Blackburn # CTB8, Fargo # GF-178, Penn Union CAUL A1D 11, Homac HM-53 or Kearney #30584-30 products to coat a bare aluminum conductor. Aluminum readily reacts with oxygen (air) and moisture to form aluminum oxide. This oxide film acts as an insulator between the conductor and connector.
4. Make sure the top part locks back into the barrel of each lay-in-terminal. Tighten each connection properly.

Note: Contractors not making the connections are required to leave **15 – 18”** excess conductor past the knockout. This gives us the proper length of conductor to bend and form the conductor to make the load side connections. See [Section 730](#).

240.5 Only one conductor is permitted per lay in terminal connection in Company owned meter bases.

240.6 The Company will make all connections of Customer owned conductors to Company owned conductors or equipment using compression connectors except when lay-in-connectors are used.

240.7 The Company will provide connectors for all Company approved cable sizes (see [Section 700](#)).

240.8 When the service voltage exceeds 600 volts, the Customer shall furnish and install terminations and connectors on their conductors. The Company will connect these conductors to Company owned equipment. These terminations and/or connectors must be compatible with the Company equipment. For any such connection, either live front or dead front, the Company shall be consulted. Any such equipment must be submitted for Company approval.

240.9 All connectors on service entrance conductors entering or exiting meter bases shall be watertight (NEC Article 230-54(g)) and constructed in a manner that will block the insertion of foreign objects into the meter base.

240.10 Customer grounding electrode conductor shall not be installed in or routed through Company meter bases or Current Transformer (CT) cabinets.

240.11 The Customer may connect a bare bonding jumper to the Company meter base provided the connection is made to a factory installed terminal of adequate size designed exclusively for bonding. Neither the neutral lug nor any type of add on device shall be used for this purpose. An external bond to the meter base is unacceptable. If the bonding wire exits the meter base separately, the Customer shall install a water tight cable connector or some other approved device in the bonding conductor exit hole or knockout to prevent the insertion of any object into the meter base.

240.12 In order to facilitate company metering personnel's ability to inspect and verify wiring, no splices shall be allowed in the Current Transformer (CT) cabinet and the cabinet is not intended to be used as a junction box.

240.13 When window type current transformers are used, the customer's service entrance conductor shall be continuous through the Current Transformer (CT) cabinet.

240.14 All load side conductors on bar type current transformers must be in parallel (conductors of like size and type electrically joined at both ends to form a single conductor) from the Current Transformer (CT) cabinet to the customer's disconnecting means. Only one disconnect is allowed on the load side conductors originating from the CT cabinet. Mechanical lay-in type connectors are not allowed on bar type CTs.

Exception: More than one disconnect may be installed on the load side of the CT cabinet provided these disconnects are all grouped in one location on the same wall in the same room. This arrangement must be approved by the authority having jurisdiction. Parallel conductors between the CT and each disconnect must be of like size, type and length.

Note: The Company will allow only one (1) additional set of conductors on the line side of the current transformers and they can only go to one (1) additional metered service (example: a fire pump or a non-emergency service, but not both). The following conditions also apply:

- The ampacity of this addition may not exceed the ampacity or capability of existing Company equipment.
- The added conductors may not exceed the size of the largest existing line side conductor.
- See Section 200.8 or 650.17 regarding a service to a [fire pump](#).

240.15 See [Section 650](#) for further requirements for Current Transformer (CT) cabinet installations.

240.16 When a self contained meter base enclosure has to be isolated from the neutral, a kit provided by the meter base manufacturer shall be used.

250 SERVICE CONNECTIONS - GENERAL

- 250.1 Overhead service will normally be supplied from an overhead distribution system.
- 250.2 The Customer shall consult the Company where boats are to be launched or otherwise handled in the proximity of overhead service.
- 250.3 The Company will provide underground service in accordance with its filed underground service plans in areas normally served by overhead distribution.
- 250.4 In an area that the Company has designated as an “Underground Distribution Area” the Company office serving the location shall be contacted.
- 250.5 Meter bases and any supporting conduit, etc. shall not be installed on a mobile home (NEC Article 550.32(A)). (See definition of “[mobile home](#)”.)
- 250.6 When single phase service greater than 400 amps is requested, the Company shall be consulted prior to any commitments. Single phase CT rated services installed in conduit or trough serving more than two (2) panels require prior approval by the Company's Metering Department.
- 250.7 When three-phase service is requested for single occupancy residences or residential farms; the Company shall be consulted prior to any commitments.
- 250.8 Service will be extended by the Company from a pole or underground facility to the service point.
- 250.9 It is the Customer’s responsibility for clearly marking existing and/or planned private underground facilities including water, sewer, septic systems, irrigation, drainage ditches, and security systems. The Company will not be responsible for damage done to Customer’s underground facilities if their location is not marked.
- 250.10 Service laterals shall be located free and clear of septic systems and drainage ditches. Service laterals shall not be installed in, or any closer than 10 feet from the edge of a drain field or reserve drain field. All applicable governmental requirements shall be met.
- 250.11 The Customer shall inform the Company of any existing or planned underground obstructions on the property to avoid damage during pole setting and/or trenching.
- 250.12 Due to concerns about bonding, equipment, and consistent wiring practices, service entrance (SE) cables and bare concentric neutral cables are not allowed on the load side of either Company or Customer owned Current Transformer (CT) cabinets.

260 SERVICE ENTRANCE - GENERAL

260.1 All service entrance conductors and service equipment shall be so arranged that service for each Customer can be metered and controlled properly and independently from a point readily accessible to the Company's employees.

260.2 Except when required by the Company, the NEC or the authority having jurisdiction, no disconnects, switches or overcurrent protective devices are allowed ahead of Company metering equipment. Protective devices shall be installed on the load side of each meter.

260.3 Where a main line disconnect is installed ahead of seven or more meters or incorporated in a meter stack, as required by the NEC, such a disconnect may be a fused disconnect or a breaker, provided that the fuse or breaker installed coordinates with the fuses or the breakers beyond the main line disconnect for all ranges of fault current available at each specific location. Certification of coordination shall be provided in writing to the Company by the Customer.

260.4 When Company conductors are to terminate in Company approved Customer equipment, the equipment must accept the Company's standard compression terminal connectors. If not, the Customer shall be required to furnish and install conductors from the Customer's equipment to a suitably sized, sealable, Customer owned connection box containing bus bars that accept standard Company compression terminal connectors. The box shall be located outside above grade or inside at a location meeting the five-foot Rule. In lieu of the connection box, the Customer may furnish and install conductors to the secondary terminals of the Company's transformer.

260.5 The neutral wire, if insulated, must be clearly identified on both ends with white or gray. (NEC Article 200)

260.6 For services of 200 amps or less, three-phase, 240 volt four-wire delta service the power wire, 208 volts to ground nominal (high leg), shall be clearly identified with the color orange (NEC 230.56) and located on the right of the metering equipment.

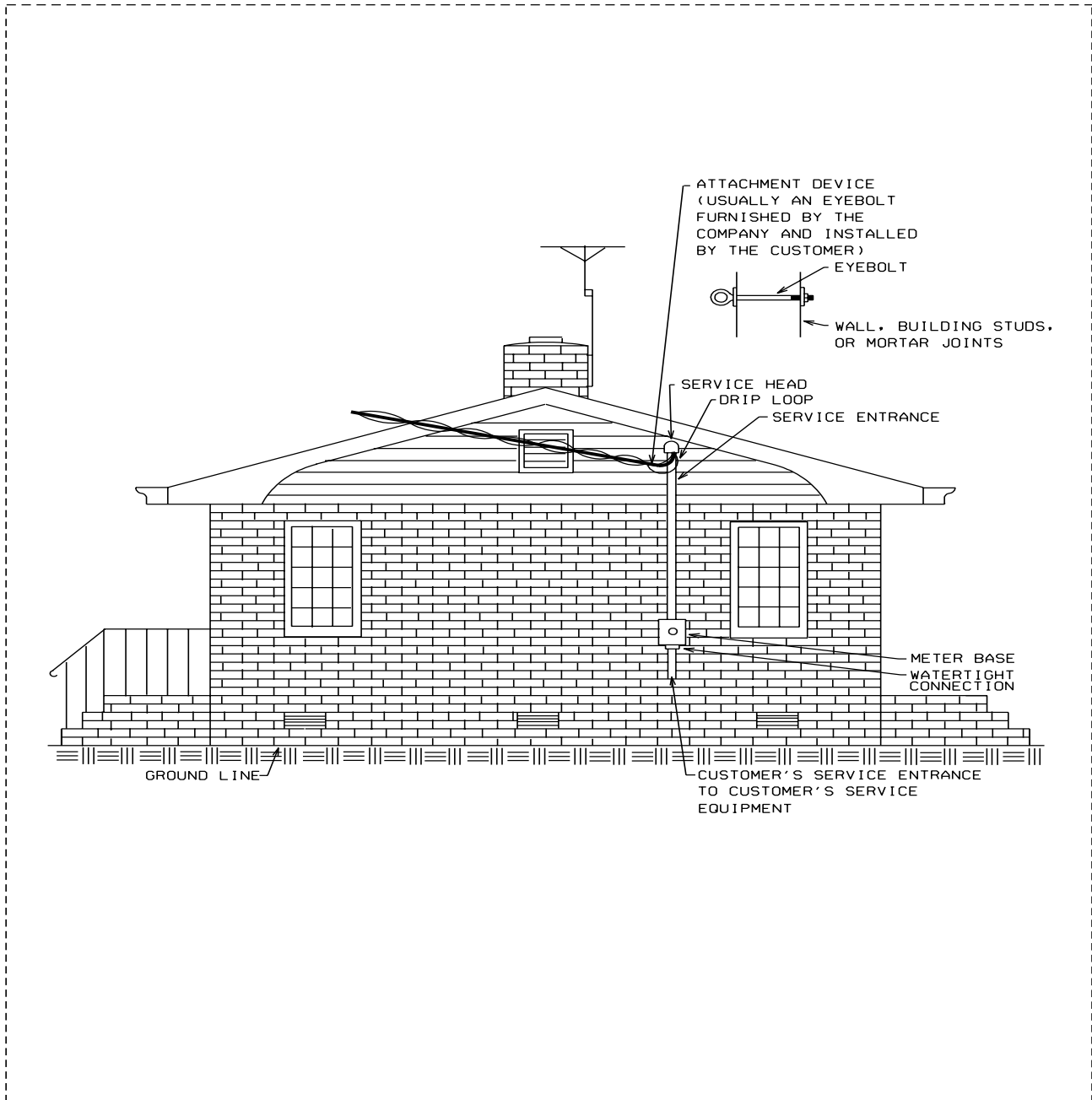
260.7 The Customer shall keep the meter in service to measure the energy being used during a rewire. Company authorization must be obtained before any meter seal is broken to accommodate rewiring.

260.8 Under no circumstances shall the connection between the service drop and the service entrance cable be connected or disconnected except by authorized representatives of the Company.

260.9 When service entrance conductors are installed in parallel in conduit, all phase wires shall be the same size, type and length. Each conduit shall contain A,B,C phase and neutral conductor. Load and line wires shall not be installed in the same conduit or trough.

OVERHEAD SERVICE REQUIREMENTS

270 OVERHEAD SERVICE ENTRANCE - GENERAL



Note: See notes on next page.
See Sections 270 and 290 for minimum required clearances.
See Section 730 for approved meter base knockout location.

270 OVERHEAD SERVICE ENTRANCE - GENERAL

270.1 The Customer shall supply and install the overhead service entrance cable and accessories except for Virginia residential installations qualifying for the Company's service entrance cable plan. (See Section 280)

270.2 Minimal clearances as required by NEC Article 230 are shown below. Consult the NESC for service voltages in excess of 600 volts.

- Weatherheads shall be located above all wires in the Company's service drop. Where this is impractical the weatherhead shall not be further than 24 inches from the point of attachment.
- Points of attachment should be 12 feet above final grade or higher due to service drop and drip loop clearances. In no case shall this clearance be less than 10 feet. The maximum height of a point of attachment shall be 22 feet unless a higher point is specified in writing by the Company.
- Drip loops shall have a minimum clearance from final grade of 10 feet for voltages up to 150 volts phase to neutral and 12 feet for voltages up to 300 volts phase to ground.
- Service drops shall have the following minimal clearances from final grade over:
 - areas subject to truck traffic and lands such as cultivated, grazing, forest, and orchards: 18 feet;
 - areas not subject to truck traffic and the voltage is between 300 and 600 volts to ground: 15 feet;
 - areas not subject to truck traffic and the voltage does not exceed 300 volts to ground: 12 feet;
 - areas accessible only to pedestrians and the cable is bundled with a grounded bare messenger where the voltage does not exceed 150 volts to ground: 10 feet;
 - at the electric service entrance to buildings: 10 feet; and
 - from windows designed to open, doors, porches, balconies, fire escapes or similar building openings: 3 feet*. (* Exception: Conductors run above the top level of a window shall be permitted to be less than the 3 feet requirement.)

270.3 Service entrance conductors shall be of continuous length, without splices, and installed completely visible on the outside of the building from the service head to the point of metering. If the service entrance conductor must pass through a concealed area, it shall be in a continuous run of conduit through the enclosure. Both ends shall have sufficient extra conductor length to facilitate connection.

270.4 For services of 200 amps or less, three-phase, 240 volt four-wire delta service the power wire, 208 volts to ground nominal (high leg), shall be clearly identified with the color orange (NEC 230.56) and located on the right of the metering equipment.

270.5 Service entrance cable, where entering the top of the meter base, shall have watertight connectors and appropriate additional sealing material that will resist the insertion of foreign objects. Service entrance cable exiting the bottom or side of the meter base shall have a watertight connector.

270.6 The center of the meter shall be no lower than 4 feet or higher than 6 feet (5 feet preferred) above final grade or the final grade of the traveled surface.

270.7 A clear space (see definition "[Clear Space](#)") shall be maintained.

280 VIRGINIA RESIDENTIAL OVERHEAD SERVICE ENTRANCE PLAN

280.1 The Company will install the overhead service entrance cable on qualifying residences. This overhead service plan is available to any new or rewired single occupancy residence, appurtenant service or residential farm served under any schedule for residential service where single phase and capacity of 100 amperes or greater is installed.

280.2 A Customer qualifying for this plan also has the option of furnishing, installing and maintaining the service entrance cable.

280.3 A Customer may be required to furnish, install and maintain the service entrance cable when in the Company's judgement, the route requested is unreasonable or unsafe.

280.4 The Customer shall furnish, install and maintain the service entrance cable if the Company's service entrance is unacceptable to the Customer.

280.5 Service entrance cable shall be installed with the entire length, between the service drop and meter enclosure, located on the exterior of the building. Service entrance cable shall not be covered by siding or other exterior products.

Note: Exception: The cable may extend through the roof in the Customer's conduit mast or, in the case of multiple occupancy buildings, may go through a wall to the Customer's service equipment. This unexposed portion shall be the shortest practical length and the Customer shall install a suitable trough and water seal it after the cable has been installed. Service entrance cable may be installed on a Customer's private pole.

280.6 The meter enclosure shall be located on the outside wall to which the service drop is attached or the adjacent wall.

280.7 On new installations, the installation must be such that Company personnel do not have to stand on a roof. It must be workable from a ladder set on the ground, and the maximum height of a point of attachment shall be 22 feet unless a higher point is specified in writing by the Company.

280.8 This plan does not exempt the Customer from any of the Company's applicable requirements including the Customer providing and maintaining an acceptable support for the attachment of the Company's service drop and service entrance cable. If the Customer's installation fails to meet the Company's minimum requirements, the Company reserves the right to withhold the plan.

280.9 This overhead service plan is available to any new or rewired multiple occupancy residential building with residential occupancy exclusively and to the residential portion of a building having other occupancies in addition to residential. The individual units must be single phase and each have a minimum of 100 ampere capacity installed.

280.10 On multiple occupancy buildings, where a service disconnecting means is required, the Company's service entrance conductors will terminate at the supply side of the disconnecting means.

280.11 For overhead services greater than 200 amps, it will be the customer's responsibility to install conduit and service entrance cap in accordance with the NEC. Customer conduit routing, type and size must be approved by the Company.

290 OVERHEAD POINT OF ATTACHMENT

290.1 For new construction the Customer will provide and maintain a safe and substantial support on the building or structure to which the Company's service drop is to be attached. The Company will furnish to the Customer at the Company's storeroom office the attachment device that will be installed by the Customer.

290.2 The existing attachment device may not be suitable for terminating the service drop on a building to be rewired. At Company request, the Customer at their sole expense will provide, install, and maintain a safe and substantial support on which the Customer will install the new attachment device supplied by the Company. Where the Company determines that a bolt is required through the wall of a building, the Customer, at their sole risk and expense, will install a bolt furnished by the Company.

290.3 The attachment device shall be located such that personnel will not have to stand on a roof to install the service drop. It must be workable from a ladder set on the ground. It shall not be installed on a fire wall, parapet wall, chimney, belt of stone, brick or other material, a soldier course, an outside verge board, an inside verge board, the upper three layers of brick, the fascia covering end of rafters, the end grain of any wood member, siding between studs or any similar type construction, unless satisfactory additional support is provided.

290.4 The attachment device will be located so that service drops and drip loops have a minimum of 3 feet* clearance from windows designed to open, doors, porches, balconies, fire escapes or similar building openings. (* Exception: Conductors run above the top level of a window shall be permitted to be less than the 3 feet requirement.)

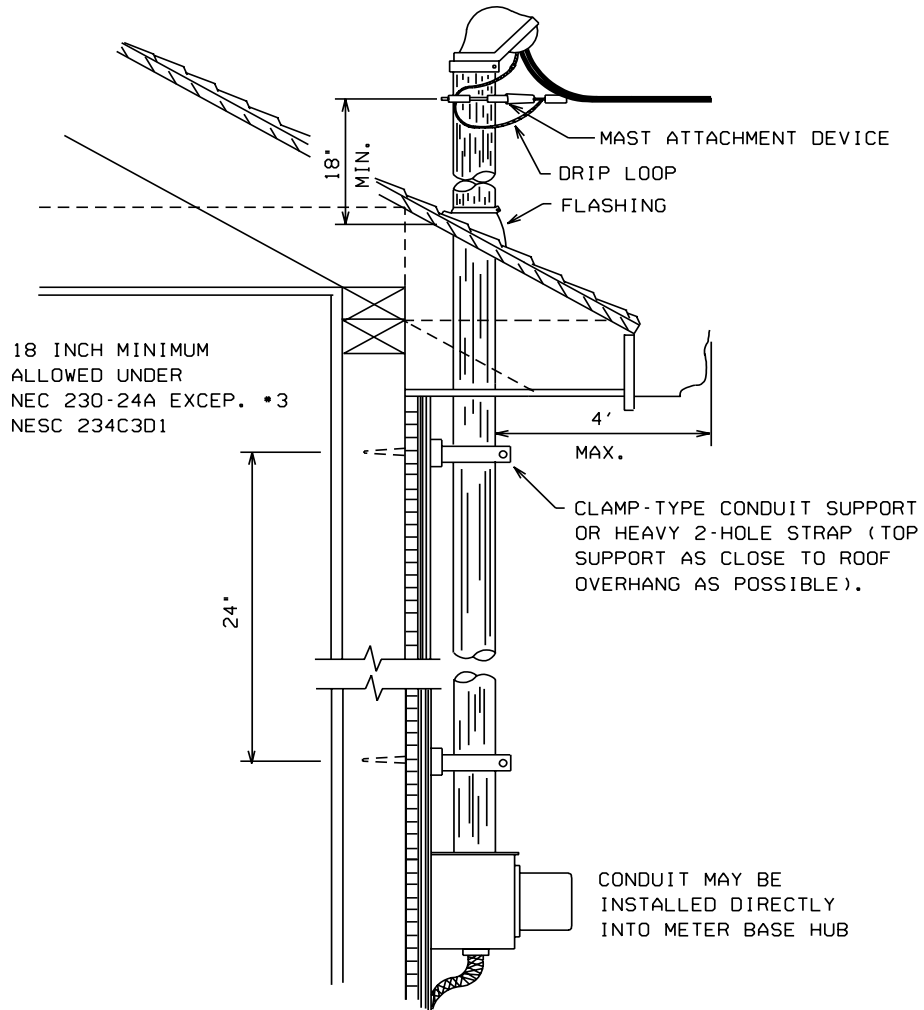
290.5 The point of attachment should be 12 feet above final grade or higher due to service drop and drip loop clearances. In no case shall this clearance be less than 10 feet. NEC Article 230.24B and NESC Rule 234C3.

290.6 See Section 270 for service drop and drip loop clearances. Consult the NESC for service voltages in excess of 600 volts.

290.7 Where a building is not of sufficient height to provide the required service drop clearances, the Customer shall provide a suitable support of sufficient height. The support shall be a pipe mast or steel member, of sufficient length and strength, bolted to the building, or other structure and approved by the Company. Consult the Company for tension weight information. Only power service-drop conductors shall be permitted to be attached to a service mast. NEC Article 230-28.

290.8 The maximum height of a point of attachment shall be 22 feet unless a higher point is specified in writing by the Company.

300 CUSTOMER OWNED SERVICE MAST INSTALLATION



Note: See notes on next page.

300 CUSTOMER OWNED SERVICE MAST INSTALLATION

300.1 A rigid 2 inch galvanized steel conduit is suitable when the mast does not extend more than 4 feet above the roof and the service entrance does not exceed 200 ampere capacity.

300.2 A minimum rigid 2-1/2 inch galvanized steel conduit shall be used when the mast height is between 4 feet and 6 feet above the roof and the service entrance does not exceed 400 ampere capacity. An aluminum conduit mast is permitted if it does not extend more than 30 inches above the roof. For greater heights, larger services or larger conduit, consult the Company early in the planning stage.

300.3 If a roof mounting plate is not used, the mast must be securely locked in place by a suitable bridging between the roof rafters.

300.4 On block, brick veneer or similar walls, the conduit hanger or strap must be bolted through the wall.

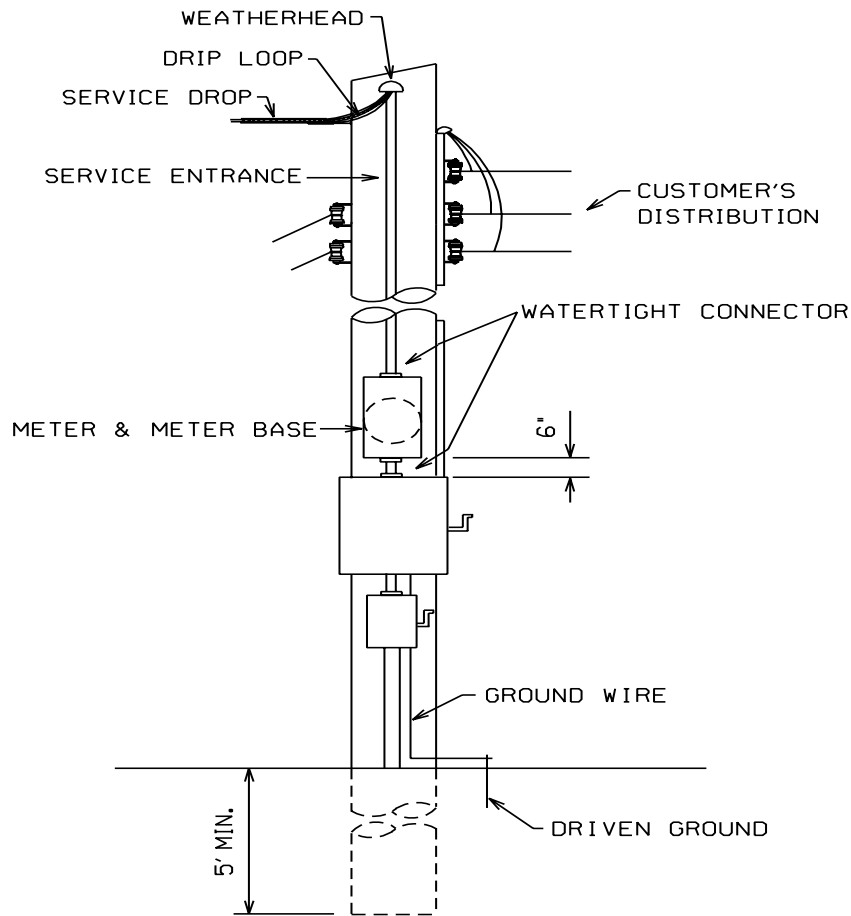
300.5 The Company shall install, own and maintain the mast attachment device and service drop. The Company shall provide and the Customer shall install the meter base. The Customer shall install, own and maintain the rest of the installation. In Virginia the Company may own and install the service entrance cable.

300.6 Service entrance cable where entering the top of the meter base shall have watertight connectors and appropriate additional sealing material that will resist the insertion of foreign objects. Service entrance cable exiting the bottom or side of the meter base shall have a watertight connector.

300.7 The center of the meter shall be no lower than 4 feet or higher than 6 feet (5 feet preferred) above final grade or the final grade of the traveled surface.

300.8 A clear space (see definition "[Clear Space](#)") shall be maintained.

310 CUSTOMER OWNED POLE INSTALLATION



310.1 The pole diameter shall be at least six (6) inches at its smallest dimension. The setting depth shall be five (5) feet minimum for poles thirty (30) feet tall or less. Poles between thirty (30) and fifty (50) feet tall shall have a setting depth of seven (7) feet. Contact the Company for the setting depths of poles taller than fifty (50) feet.

310.2 The height of the pole must be such that minimum required clearance for Company and Customer conductors are maintained. See Sections 270 and 290.

310.3 The Customer owned pole must be approved by the Company prior to upgrading service.

310.4 Conductors where entering and exiting the meter base shall have watertight connectors that do not require other additional sealing material. Connectors shall resist the insertion of foreign objects.

310.5 The center of the meter shall be no lower than 4 feet or higher than 6 feet (5 feet preferred) above final grade or final grade of the traveled surface.

310.6 A clear space (see definition "[Clear Space](#)") shall be maintained.

LADDERS ARE GREAT TOOLS

BUT

TAKE TIME TO MAKE SURE

IT IS IN GOOD CONDITION

AND

THAT IT WILL NOT BE RAISED

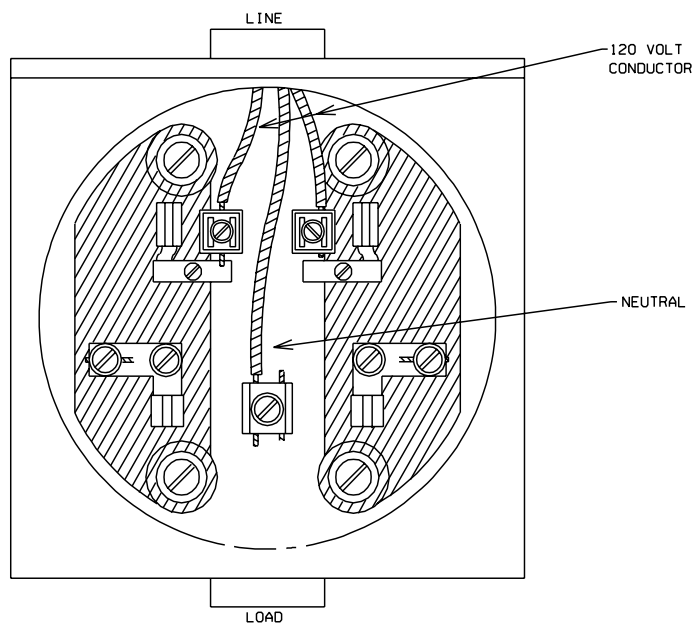
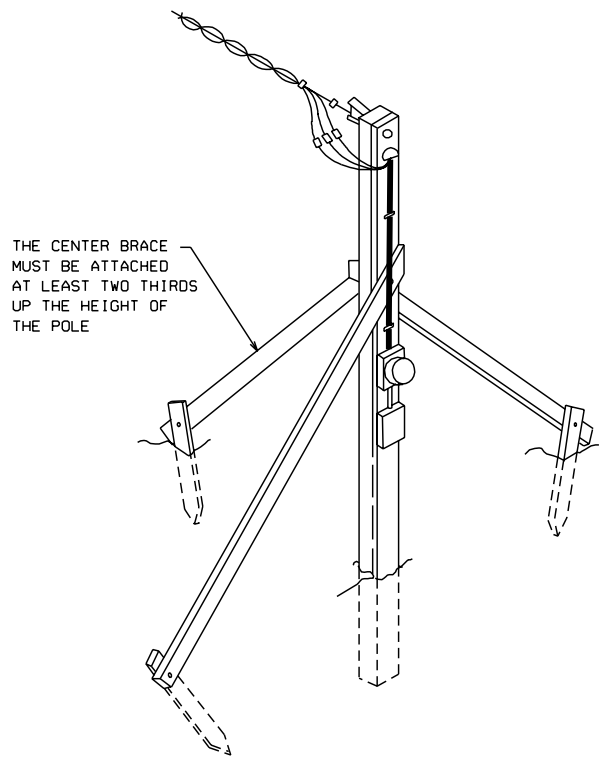
INTO ANY ELECTRIC LINES.

REMEMBER

LOOK UP!

AVOID OVERHEAD ELECTRIC LINES

320 NEW OVERHEAD TEMPORARY SERVICE



Note: See notes on next page.

320 NEW OVERHEAD TEMPORARY SERVICE

320.1 A request for a new service, a temporary service, or a service upgrade is to be initiated by the Customer by either calling the Company's toll free number (1-866-DOM-HELP) or by going to the Company's web site www.dom.com and following the instructions shown there. Initiate this request as far in advance as possible. See "[Requests For Service](#)".

320.2 If the Company considers the temporary structure unsafe, service will not be provided.

320.3 The Customer shall pay to the Company a temporary service charge which shall be the estimated net cost (including all applicable overhead costs) of installing and removing the service facilities furnished by the Company both on and off the Customer's premises.

320.4 Overhead temporary service may be provided at the Company's current flat temporary service charge if the temporary service is single phase, 100 amperes or less capacity, and the only facility required is a service drop, 75 feet or less, from an existing adequate overhead secondary line.

320.5 The Company will furnish and install the service drop and the meter.

320.6 The meter base (Stock No. 65.8400 for 100 ampere or less) and the service drop attachment device will be furnished by the Company but installed by the Customer. Use of other meter bases or metering equipment require written approval by the Company's Metering department.

320.7 The Customer will furnish and install the temporary structure. The temporary structure shall be within 75 feet of the Company pole from which the service drop is to be installed, and its height must be such that the minimum required clearances in Sections 270 and 290 are maintained.

320.8 The temporary structure shall be treated wood (see definitions). The structure specifications below are adequate to support meter base Stock No. 65.8400. The Customer, not the Company, is responsible for sizing support structures used for other meter bases or metering equipment.

A. Posts:

- Posts are to be a minimum of 6X6 nominal size or timbers laminated to make an equivalent 6X6 post (laminations to be continuous).
- The setting depth of the post shall be appropriate for the soil and structure height but shall be at least five (5) feet deep.
- Three (3) braces (2 inch x 4 inch x 12 feet long timbers) are to be bolted to the post with the center brace located under the service drop.
- The stakes shall be 2 inch x 4 inch x 3 feet and driven into the ground 6 feet from the post to a depth of 2 feet and bolted to the braces.
- The bolts used to bolt the brace to the post are to be a minimum 1/4 inch galvanized machine bolts with washers at each end.

B. Poles:

- Poles shall be at least six (6) inches in diameter in their smallest dimension.

- The setting depth shall be appropriate for the soil and structure height. The minimum setting for poles 30 feet tall or less depth shall be at least five (5) feet. Poles between 30 and 50 feet tall shall have a setting depth of seven (7) feet. Contact the Company for setting depths of poles taller than 50 feet.

320.9 A minimum 6 inch separation shall be maintained between the meter base and switch.

320.10 Service entrance cable where entering the top of the meter base shall have watertight connectors and appropriate additional sealing material that will resist the insertion of foreign objects. Service entrance cable exiting the bottom or side of the meter base shall have a watertight connector.

320.11 The Customer is to securely plug all holes in the meter base to prevent insertion of objects.

320.12 The center of the meter shall be no lower than 4 feet or higher than 6 feet (5 feet preferred) above final grade or the final grade of the traveled surface.

320.13 A clear space (see definition “[Clear Space](#)”) shall be maintained.

320.14 For temporary re-arrangement of existing services, please contact Dominion for proper instructions.

POWER TOOLS:

Use a ground fault circuit interrupter

Remove any rings or jewelry

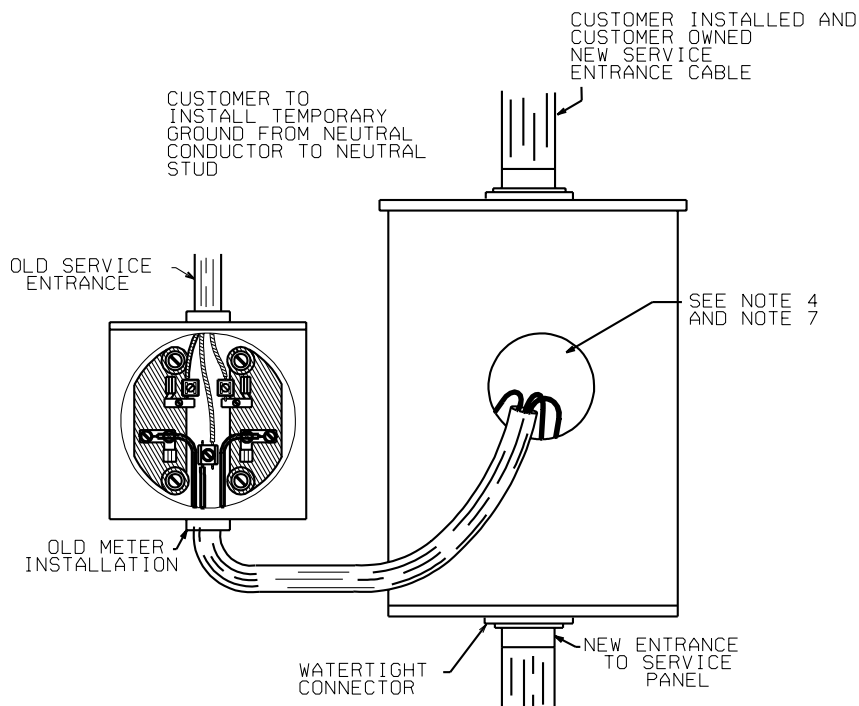
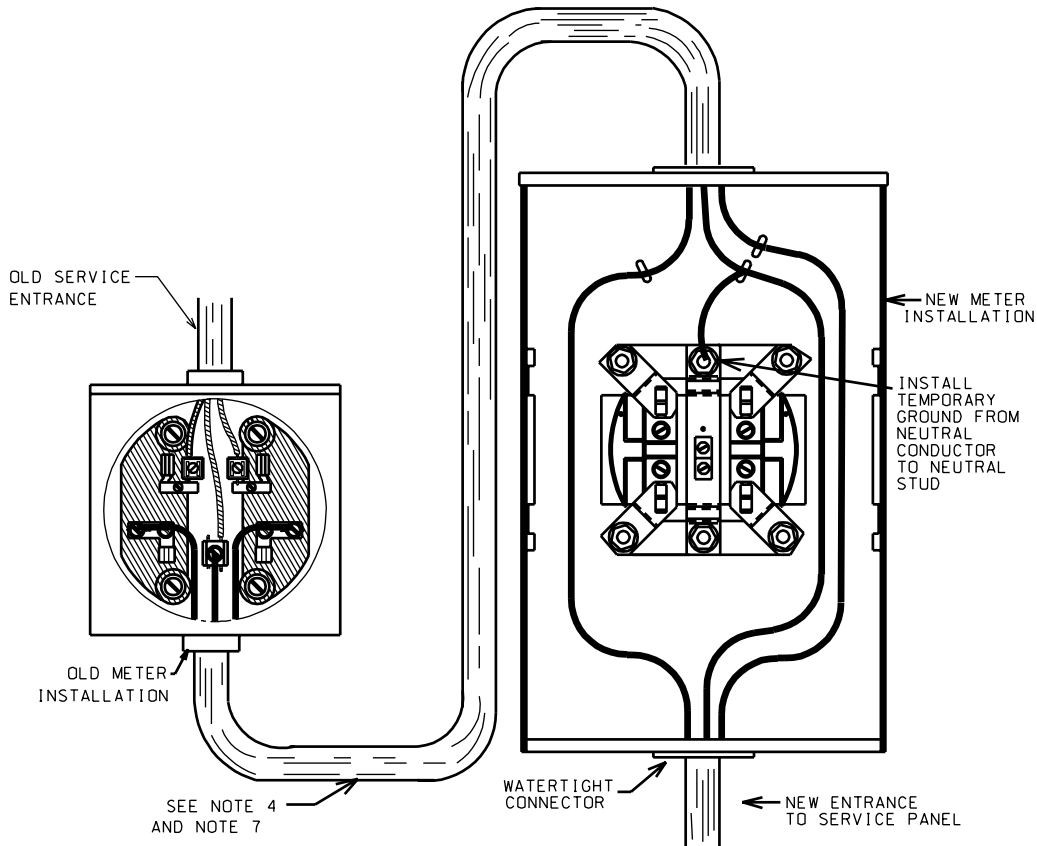
Avoid wearing loose fitting clothes

Use goggles or safety glasses

Use the proper tool for the job

330 TYPICAL OVERHEAD TEMPORARY REWIRE ARRANGEMENTS

Note: See notes on next page.



330 TYPICAL OVERHEAD TEMPORARY REWIRE ARRANGEMENTS

330.1 A request for a service upgrade is to be initiated by the Customer by either calling the Company's toll free number (1-888-569-5700) or by going to the Company's web site www.dom.com and following the instructions shown there. Initiate this request as far in advance as possible. Refer to "[Requests For Service](#)" (located after the Introduction) for an explanation of the Company's process.

330.2 The Company Representative may authorize a licensed electrician to remove the seal and meter. |

330.3 This installation must be made in a manner so that no unmetered electricity is used.

330.4 All energized conductors and connectors must be insulated. Temporary connectors and insulating tape are furnished and installed by the Customer. The new cable must be long enough to make up the new meter terminals when the new meter is placed in service.

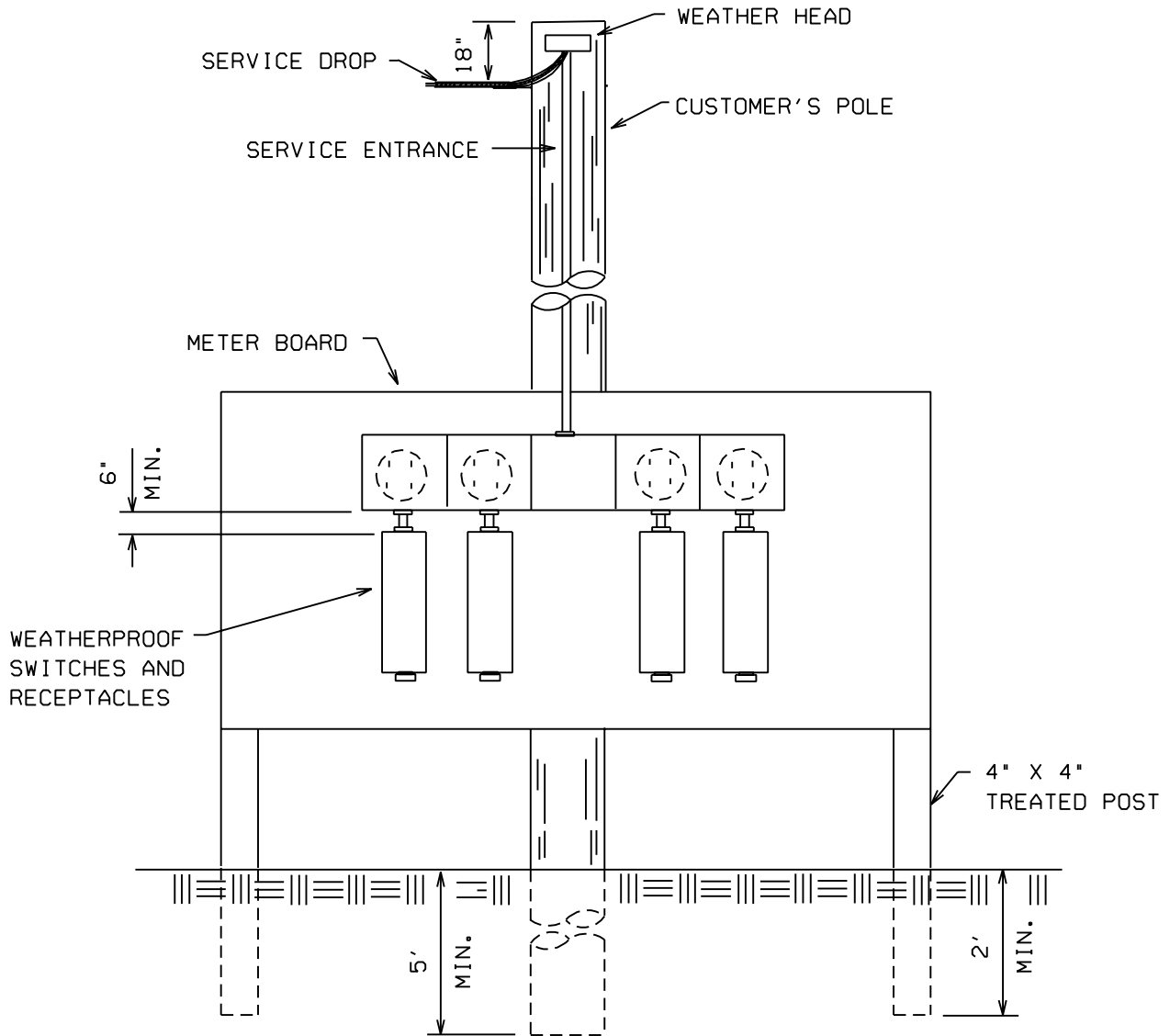
330.5 The temporary cable between the old meter base and new meter base may be the old entrance cable removed from the old service panel or a new piece of cable, whichever the Customer prefers. The hole in which this cable enters must be sealed to keep weather, debris, and birds from entering the meter base and to prevent accidental contact with energized conductors.

330.6 The Company will remove the temporary ground when permanent service is installed.

330.7 The Company shall be contacted when the service upgrade is complete.

330.8 Additional loads should not be used until permanent service is completed.

340 OVERHEAD CUSTOMER METER BOARD, PRE-GANGED METER BASES
SINGLE PHASE, 3-WIRE, 240/120 VOLTS, 100 or 200 AMPS PER POSITION



Note: See notes on next page.

340 OVERHEAD CUSTOMER METER BOARD PRE-GANGED METER BASES
SINGLE PHASE, 3 WIRE, 240/120 VOLTS, 100 or 200 AMPS PER POSITION

340.1 Two to six position pre-ganged meter sockets are furnished by the Company and installed by the Customer.

340.2 The Company provides the service drop, the meter base, the meter, and for Virginia residential Customers the weather head (for total service 200 amps or less) and service entrance conductor. All other material including the pole is furnished and installed by the Customer.

340.3 The Customer's wood pole and posts must be treated wood (see definition). The height and depth of setting as specified by the Company.

340.4 For more than six meters, a duplicate board, on the opposite side of the pole, with a separate service entrance, can be used.

340.5 The meter board must be made of treated wood, either boards or plywood, not less than 3/4 inch thick.

340.6 The Customer served by each meter socket shall be clearly identified to ensure correct billing. The marking shall be legible and permanent inside and outside the meter enclosure with the inside marking somewhere other than on the cover. A similar marking shall be installed on the inside cover of that meter's corresponding Customer load panel. See "Meter Location", paragraph 110-19.

340.7 Floating facilities, piers and marinas will be served on land at a mutually agreeable location with metering equipment located in an equipment house or other suitable Customer owned structure or meter pedestal.

340.8 The Customer owned pole must be approved by the Company prior to upgrading service.

340.9 Service entrance conductor where entering the top of the meter base shall have watertight connectors and appropriate additional sealing material that will resist the insertion of foreign objects. Service entrance conductor exiting the bottom or side of the meter base shall have a watertight connector.

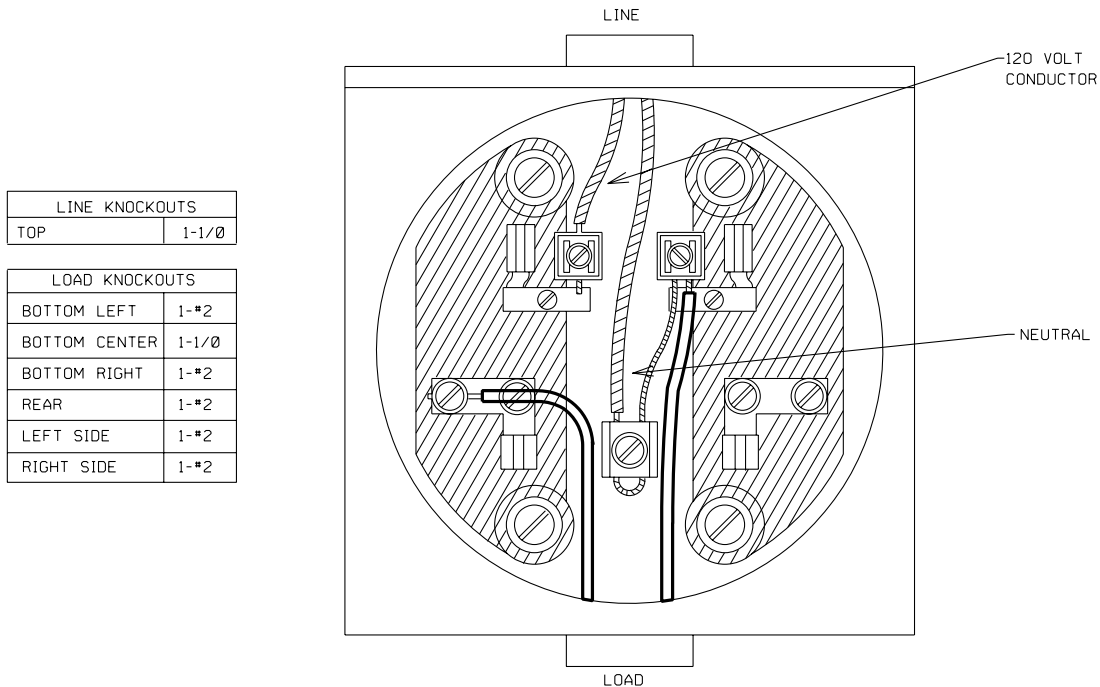
340.10 The centers of the meters shall be no lower than 4 feet or higher than 6 feet (5 feet preferred) above final grade or the final grade of the traveled surface.

340.11 A clear space (see definition "[Clear Space](#)") shall be maintained.

350 OVERHEAD 100 AMP, SINGLE PHASE, 2-WIRE 120V LINE, 2-WIRE 120 V LOAD

Stock Number 65.8400

- 350.1 A 120 volt 2-wire meter must be used for this service.
- 350.2 The jumper must be installed from the neutral to the right line terminal.
- 350.3 The jumper must be the same wire size as the neutral conductor.
- 350.4 Service entrance cable where entering the top of the meter base shall have watertight connectors and appropriate additional sealing material that will resist the insertion of foreign objects. Service entrance cable exiting the bottom or side of the meter base shall have a watertight connector.
- 350.5 See [Section 700](#) for approved conductor sizes and Sections [710](#)/[720](#) for meter base sizes.
- 350.6 See [Section 730](#) for the approved entry and exit knockouts on Company meter bases. No holes shall be cut without securing Company approval. The existence of a knockout does not necessarily mean it can be used.
- 350.7 A clear space (see definition "[Clear Space](#)") shall be maintained.



360 OVERHEAD 100 AMP, SINGLE PHASE, 3-WIRE 240/120 V LINE, 2-WIRE 120V LOAD

Stock Number 65.8400

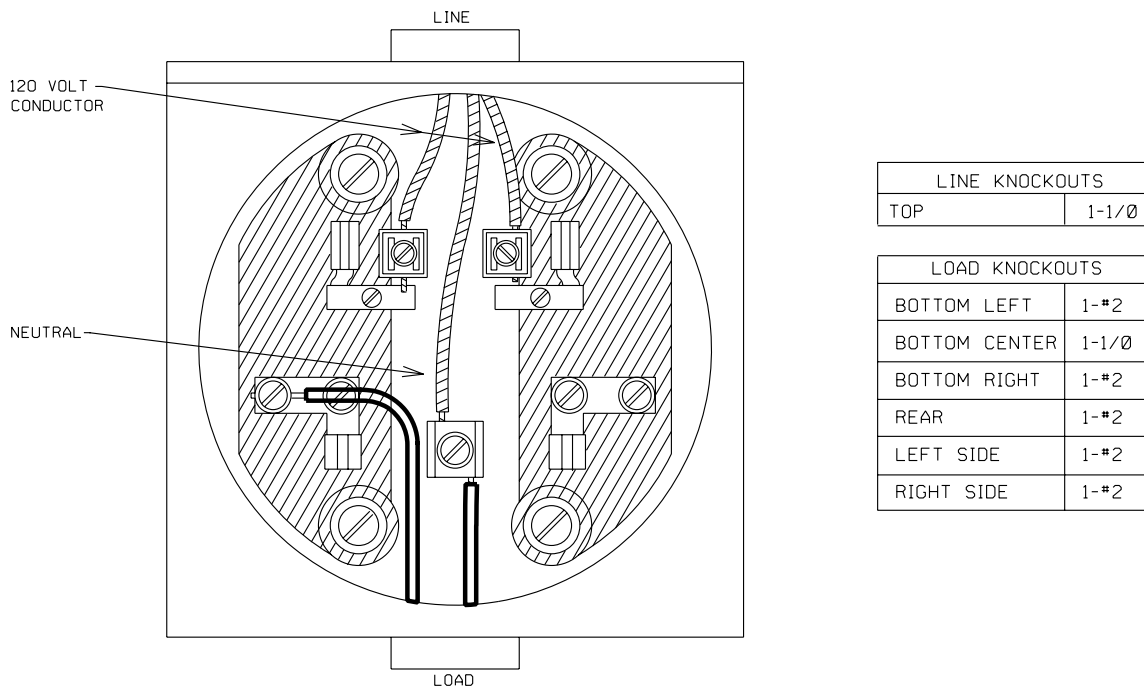
360.1 The line side service entrance cable must be 3-wire conductor and must be connected as shown.

360.2 Service entrance cable where entering the top of the meter base shall have watertight connectors and appropriate additional sealing material that will resist the insertion of foreign objects. Service entrance cable exiting the bottom or side of the meter base shall have a watertight connector.

360.3 See [Section 700](#) for approved conductor sizes and [Sections 710/720](#) for meter base sizes.

360.4 See [Section 730](#) for the approved entry and exit knockouts on Company meter bases. No holes shall be cut without securing Company approval. The existence of a knockout does not necessarily mean it can be used.

360.5 A clear space (see definition "[Clear Space](#)") shall be maintained.



370 OVERHEAD 100 AMP, SINGLE PHASE, 3-WIRE 240/120 V LINE & LOAD

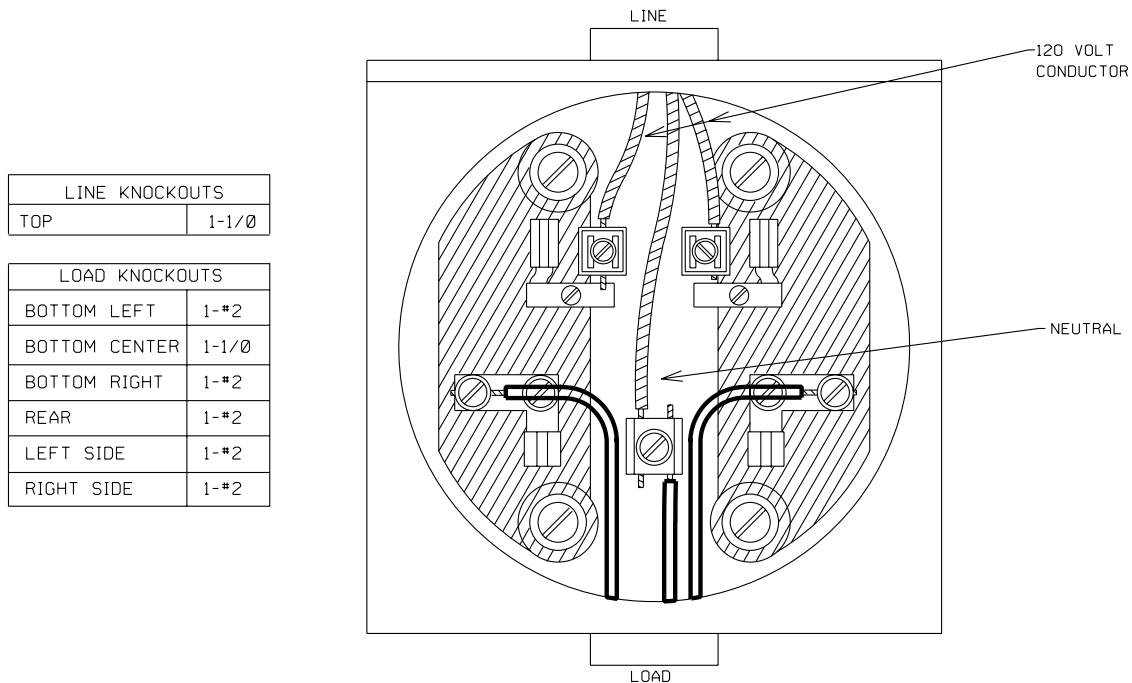
Stock Number 65.8400

370.1 Service entrance cable where entering the top of the meter base shall have watertight connectors and appropriate additional sealing material that will resist the insertion of foreign objects. Service entrance cable exiting the bottom or side of the meter base shall have a watertight connector.

370.2 See [Section 700](#) for approved conductor sizes and Sections [710/720](#) for meter base sizes.

370.3 See [Section 730](#) for the approved entry and exit knockouts on Company meter bases. No holes shall be cut without securing Company approval. The existence of a knockout does not necessarily mean it can be used.

370.4 A clear space (see definition "[Clear Space](#)".) shall be maintained.



380 OVERHEAD 100 AMP, SINGLE PHASE, 3-WIRE 208/120 V, NETWORK METER

Stock Number 65.8400

380.1 Use when specified or approved by the Company.

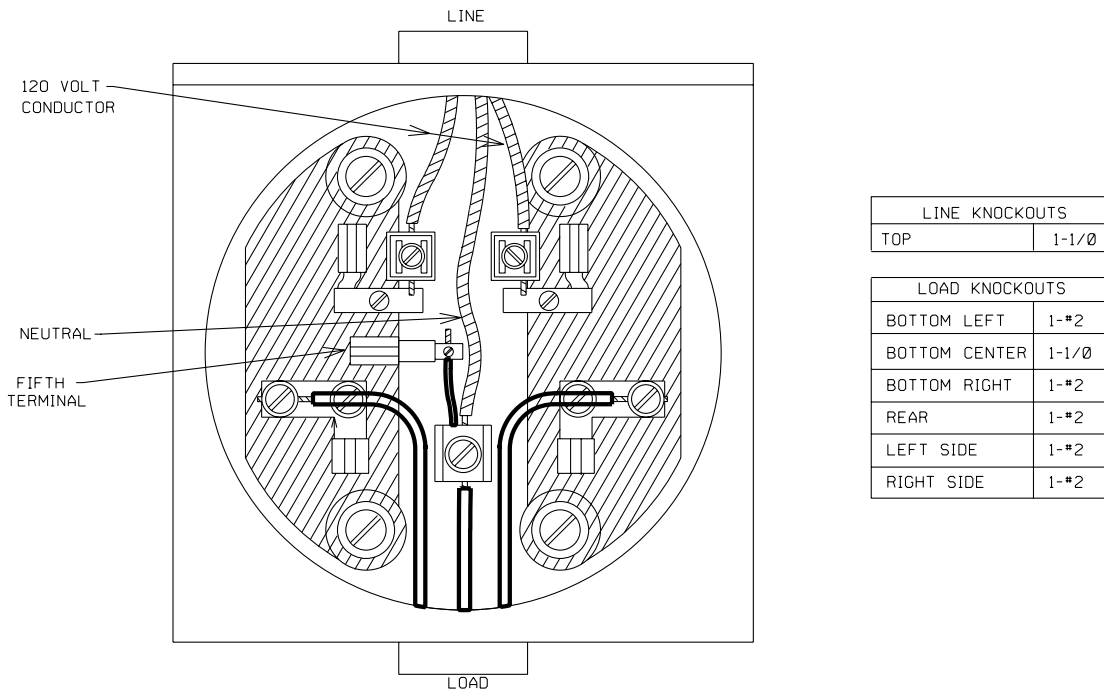
380.2 The Company shall install the fifth terminal.

380.3 Service entrance cable where entering the top of the meter base shall have watertight connectors and appropriate additional sealing material that will resist the insertion of foreign objects. Service entrance cable exiting the bottom or side of the meter base shall have a watertight connector.

380.4 See [Section 700](#) for approved conductor sizes and [Sections 710/720](#) for meter base sizes.

380.5 See [Section 730](#) for the approved entry and exit knockouts on Company meter bases. No holes shall be cut without securing Company approval. The existence of a knockout does not necessarily mean it can be used.

380.6 A clear space (see definition "[Clear Space](#)") shall be maintained.



390 OVERHEAD 150 AND 200 AMP, SINGLE PHASE, 3-WIRE, 240/120 V OR 208/120 V LINE & LOAD

Stock Number 65.7370

390.1 The Customer shall leave ample line and load conductor for the Company to train, terminate and connect to the meter terminals.

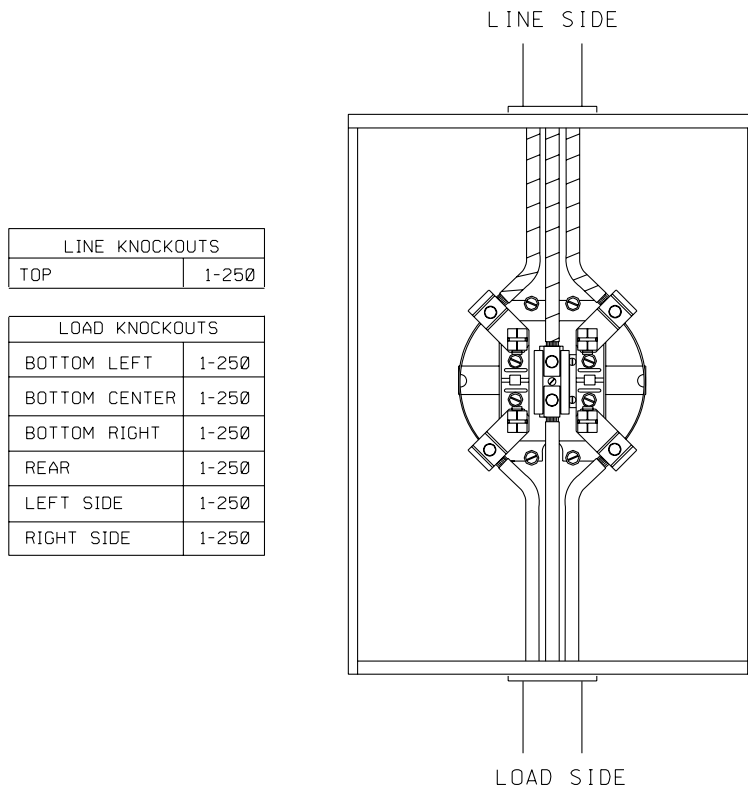
390.2 Effective June 9, 1999 the Company began allowing electrical contractors to make up Customer owned conductor connections in meter sockets equipped with “lay-in-type” connectors. Contractors making these connections will do so as indicated in [Section 240](#).

390.3 Service entrance cable where entering the top of the meter base shall have watertight connectors and appropriate additional sealing material that will resist the insertion of foreign objects. Service entrance cable exiting the bottom or side of the meter base shall have a watertight connector.

390.4 See [Section 700](#) for approved conductor sizes and Sections [710/720](#) for meter base sizes.

390.5 See [Section 730](#) for the approved entry and exit knockouts on Company meter bases. No holes shall be cut without securing Company approval. The existence of a knockout does not necessarily mean it can be used.

390.6 A clear space (see definition “[Clear Space](#)”) shall be maintained



NOTE: METER ADDRESS TO BE NOTED INSIDE ENCLOSURE (NOT ON COVER) IN A LEGIBLE AND PERMANENT MANNER. SEE SEC. 220.7

400 OVERHEAD 200 AMP MAX., THREE PHASE, 4-WIRE 240/120 OR 208/120 V

Stock Number 65.7425

400.1 The Customer shall leave ample line and load conductor for the Company to train, terminate and connect to the meter terminals. The Company will only accept compression connectors on this meter base.

400.2 On 240/120 volt three phase, the 208 volt leg must be identified with the color orange (NEC 230.56) and connected to "C" phase. "C" phase marking is a Company requirement due to the need to have wiring practices that are consistent with our existing metering.

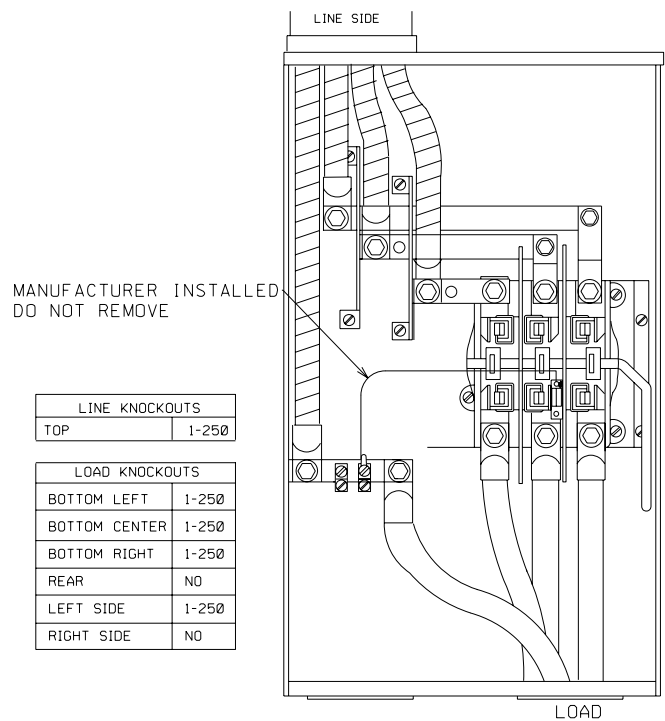
400.3 Service entrance conductor where entering the top of the meter base shall have watertight connectors and appropriate additional sealing material that will resist the insertion of foreign objects. Service entrance conductor exiting the bottom or side of the meter base shall have a watertight connector.

400.4 The bypass handle **MUST NOT** be used to make or break load.

400.5 See [Section 700](#) for approved conductor sizes and [Sections 710/720](#) for meter base sizes.

400.6 See [Section 730](#) for the approved entry and exit knockouts on Company meter bases. No holes shall be cut without securing Company approval. The existence of a knockout does not necessarily mean it can be used.

400.7 A clear space (see definition "[Clear Space](#)") shall be maintained.



NOTE: METER ADDRESS TO BE NOTED INSIDE ENCLOSURE (NOT ON COVER) IN A LEGIBLE AND PERMANENT MANNER. SEE SEC. 220.7

405 OVERHEAD 320 AMP (400 AMP MAX), SINGLE PHASE, 3-WIRE 240/120 OR 208/120 V

Stock Number 65.7412

405.1 The Customer shall leave ample line and load conductor for the Company to train, terminate and connect to the meter terminals.

405.2 Two separate panels, of varying sizes, may be served from this meter base. The dual set screw terminals have a range of #6 to 250 kcm.

405.3 Service entrance conductor where entering the top of the meter base shall have watertight connectors and appropriate additional sealing material that will resist the insertion of foreign objects. Service entrance conductor exiting the bottom or side of the meter base shall have a watertight connector.

405.4 The bypass handle **MUST NOT** be used to make or break load.

405.5 See [Section 700](#) for approved conductor sizes and Sections [710/720](#) for meter base sizes.

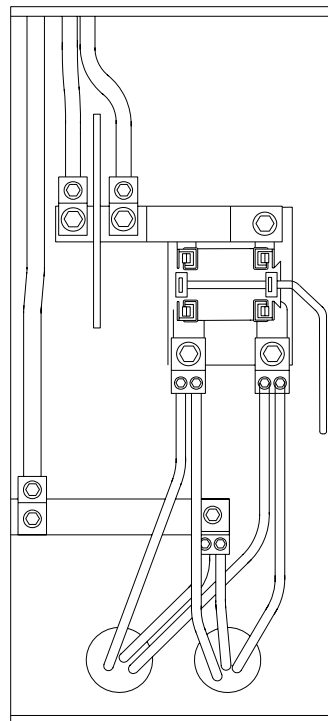
405.6 See [Section 730](#) for the approved entry and exit knockouts on Company meter bases. No holes shall be cut without securing Company approval. The existence of a knockout does not necessarily mean it can be used.

405.7 A clear space (see definition "[Clear Space](#)") shall be maintained.

405.8 For overhead services greater than 200 amps, it will be the customer's responsibility to install conduit and service entrance cap in accordance with the NEC. Customer conduit routing, type and size must be approved by the Company before installation.

LINE KNOCKOUTS	
TOP	1-500

LOAD KNOCKOUTS	
BOTTOM LEFT	1-500
BOTTOM CENTER	1-500
BOTTOM RIGHT	1-500
REAR	1-250
LEFT SIDE	1-250
RIGHT SIDE	1-250

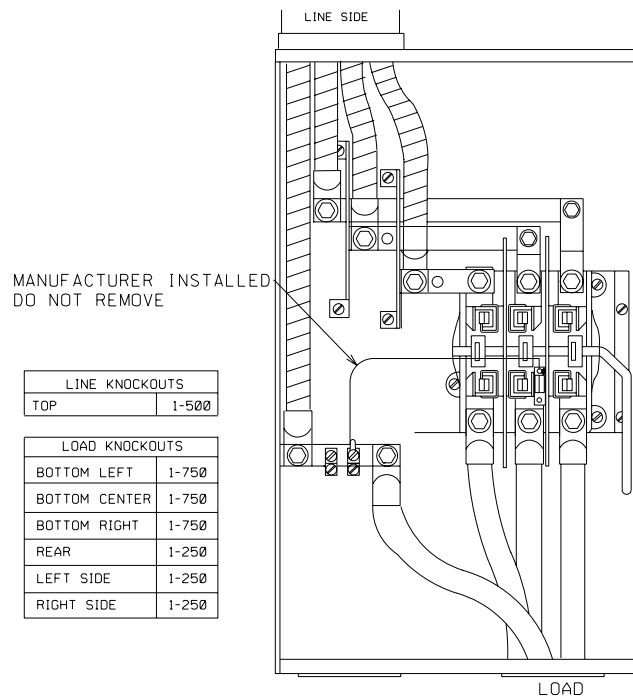


NOTE: METER ADDRESS TO BE NOTED INSIDE ENCLOSURE (NOT ON COVER) IN A LEGIBLE AND PERMANENT MANNER. SEE SEC. 220.7

407 OVERHEAD 320 AMP (400 AMP MAX), THREE PHASE, 4-WIRE, 208/120 V

Stock Number 42.016148

- 407.1 Two separate panels, of varying sizes, may be served from this meter base.
- 407.2 The Customer shall leave ample line and load conductor for the Company to train, terminate and connect to the meter terminals. The Company will only accept compression connectors on this meter base.
- 407.3 Service entrance conductor where entering the top of the meter base shall have watertight connectors and appropriate additional sealing material that will resist the insertion of foreign objects. Service entrance conductor exiting the bottom or side of the meter base shall have a watertight connector.
- 407.4 The bypass handle **MUST NOT** be used to make or break load.
- 407.5 See [Section 700](#) for approved conductor sizes and Sections [710](#)/[720](#) for meter base sizes.
- 407.6 See [Section 730](#) for the approved entry and exit knockouts on Company meter bases. No holes shall be cut without securing Company approval. The existence of a knockout does not necessarily mean it can be used.
- 407.7 A clear space (see definition "[Clear Space](#)") shall be maintained.



NOTE: METER ADDRESS TO BE NOTED INSIDE ENCLOSURE (NOT ON COVER) IN A LEGIBLE AND PERMANENT MANNER. SEE SEC. 220.7

**A SAFE ENVIRONMENT
BENEFITS EVERYONE!**

**PROTECT UNDERGROUND UTILITIES!
CALL 48 HOURS BEFORE DIGGING!**

Miss Utility in Virginia

811

North Carolina One Call Center

811

UNDERGROUND SERVICE REQUIREMENTS

430 UNDERGROUND SERVICE PLANS

430.1 In areas designated by the Company as "Underground Distribution Area", the Customer will furnish and install at or near the property line, at a point designated by the Company, a main switch, distribution panel or adequately sized connection box in which the Company's lateral is to be terminated and connection made to the Customer's wiring.

430.2 Ordinances requiring underground do not constitute an area as a designated underground service area.

430.3 In areas not designated by the Company as "Underground Distribution Area" the Company will provide underground service to the Customer in accordance with the Company's current filed service plans.

430.4 Where underground service is provided in accordance with the Company's filed plans, the Company will install and own the service lateral conductors and riser conduit to the meter installation if located on an outside wall of the building or other Company approved outdoor location.

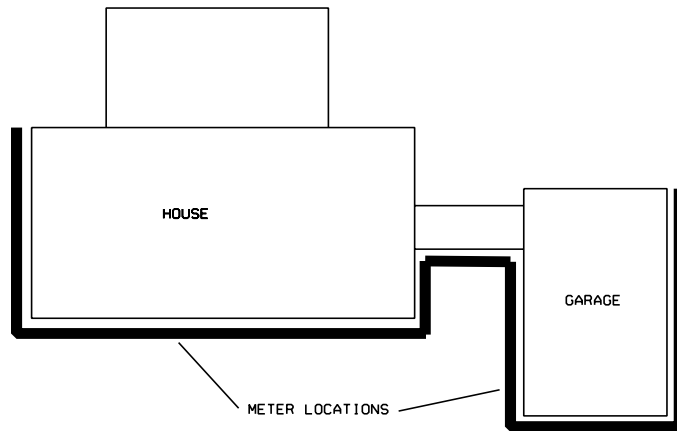
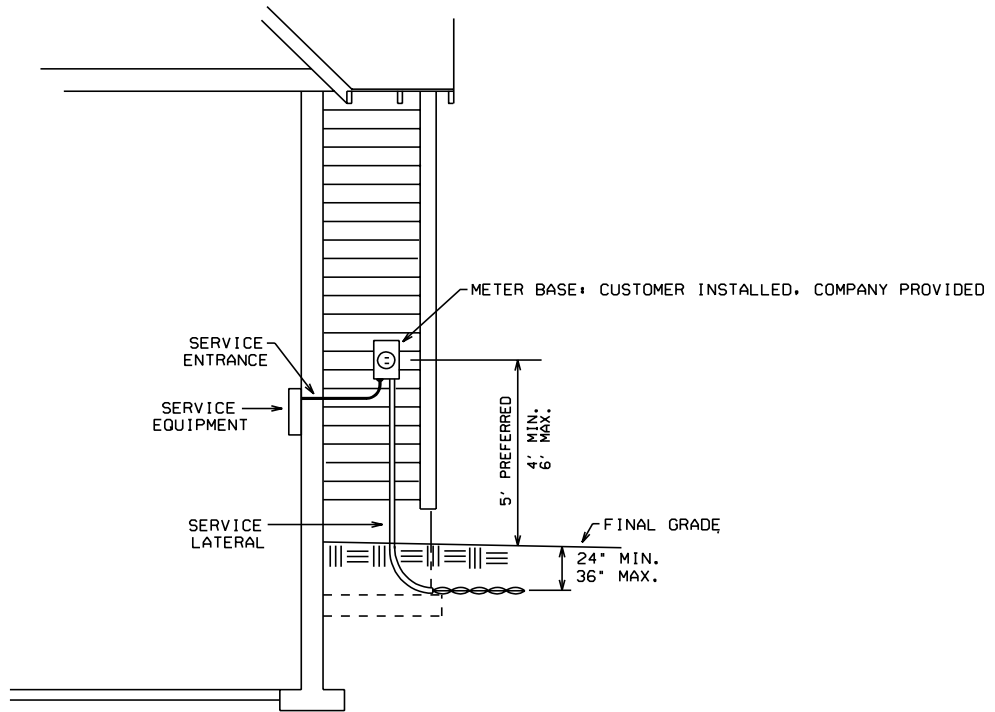
440 UNDERGROUND POINT OF ATTACHMENT

440.1 The Customer will maintain the customer provided equipment at the delivery point for connecting Company conductors to Customer conductors.

440.2 The point of attachment at the delivery point may be a meter enclosure, a connection box, the Customer's switchgear, meter pedestal, Current Transformer (CT) cabinet or secondary bushing of the Company's service transformer.. The Company shall approve the enclosure, its location, and its installation.

440.3 For single family detached homes, the metering equipment shall be located on the exterior side or front of the home.

450 UNDERGROUND SERVICE ENTRANCE



Note: See notes on next page.

450 UNDERGROUND SERVICE ENTRANCE

450.1 It is the Customer's responsibility for clearly marking existing and/or planned private underground facilities including water, sewer, septic systems, irrigation, drainage ditches, and security systems. The Company will not be responsible for damage done to Customer's underground facilities if their location is not marked.

450.2 Should the cable path from the exterior of the building be under patios, decks, sidewalks, driveways or paved parking and should such cover be within 5 feet of the building wall, the Customer shall extend Company provided conduit from the delivery point enclosure to at least 12 inches beyond such cover.

450.3 When the service point enclosure is located inside the building not meeting the Five Foot Rule, the Customer shall provide an adequately sized junction box as the delivery point enclosure. This box is to be just outside the building above grade or may be inside at a location meeting the Five Foot Rule and is for terminating the Company provided service lateral. In lieu of this, the Customer may elect to install, own and maintain the service lateral to the Company's transformer with Company approval.

450.4 The Company supplied service lateral to a single customer having a demand of 500 kVA or more shall be limited to 50 feet in length and shall be installed in conduit.

450.5 Service entrance cable where entering the top of the meter base shall have watertight connectors and appropriate additional sealing material that will resist the insertion of foreign objects. Service entrance cable exiting the bottom or side of the meter base shall have a watertight connector.

450.6 The area below the meter must be free of obstruction which will allow the meter riser to lie flush against the exterior building wall to a depth of 24 inches. If the footer is not deep enough for the Company to install its service lateral above it, the Customer shall provide a pathway or conduit through the footer. The meter and meter riser must be accessible for maintenance and future replacement. If these conditions cannot be met, then the customer will own and install the riser. Customer conduit routing, type and size must be approved by the Company before installation.

450.7 For services of 200 amps or less, three-phase, 240 volt four-wire delta service the power wire, 208 volts to ground nominal (high leg), shall be clearly identified with the color orange (NEC 230.56) and located on the right of the metering equipment.

450.8 The center of the meter shall be no lower than 4 feet or higher than 6 feet (5 feet preferred) above final grade or the final grade of the traveled surface.

450.9 A clear space (see definition "[Clear Space](#)") shall be maintained.

460 FIVE FOOT RULE (ILLUSTRATIONS)

Examples of installations where the Company will provide and install the service entrance cable.

FIGURE 1

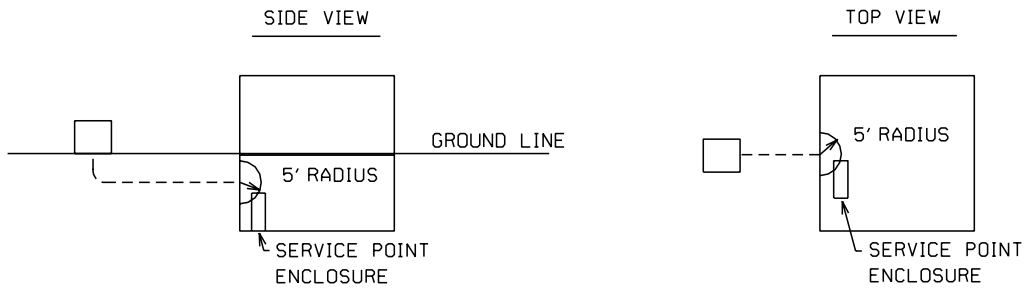


FIGURE 2

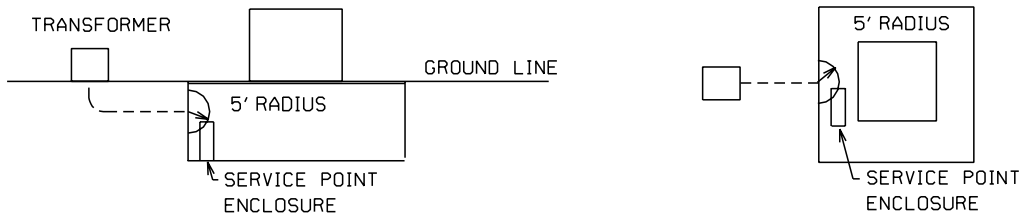
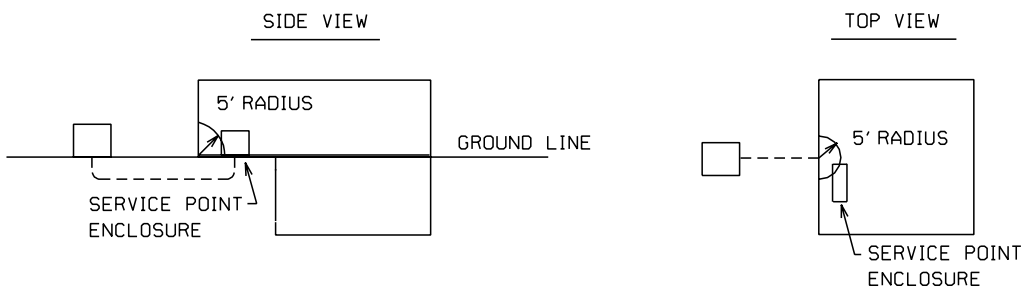


FIGURE 3



Note: See notes on next page.

460 FIVE FOOT RULE

460.1 These are the guidelines under which the Company will install the service lateral inside the Customer's building. (Any reference to the Five Foot Rule includes the Five Foot Rule exception.) The Company will provide and install cable to extend inside the building 5 feet beyond the inside face of the exterior wall to the Customer's service point enclosure which is located on the same floor where the cable penetrates the wall.

460.2 The 5 foot dimension is a 5 foot radius measured from the center of the duct bank at the point it penetrates the wall. The cubicle or compartment portion of the service point enclosure in which the cable terminations are made must be at least partially within the five foot dimension.

460.3 Open cable tray is not approved under the Five Foot Rule. Energy diversion and safety considerations require the use of conduit or trough sealed with Company locking seals or one way screws.

470 FIVE FOOT RULE EXCEPTIONS (ILLUSTRATIONS)

Examples showing where the Company will provide and install the service entrance cable.

FIGURE 1

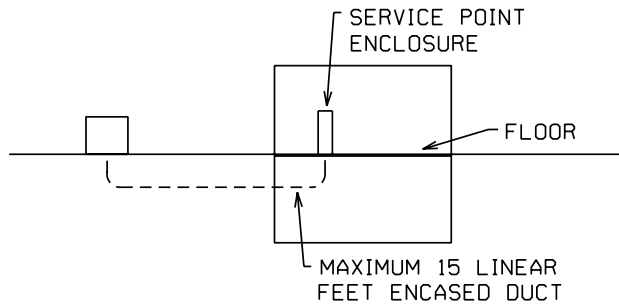


FIGURE 2

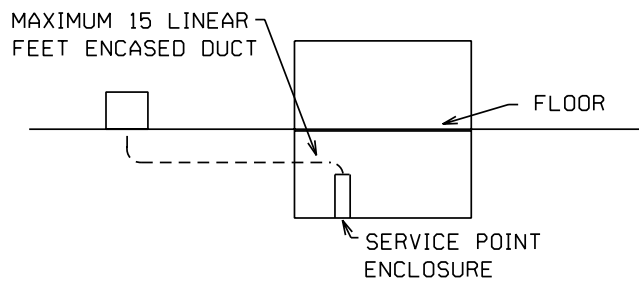


FIGURE 3

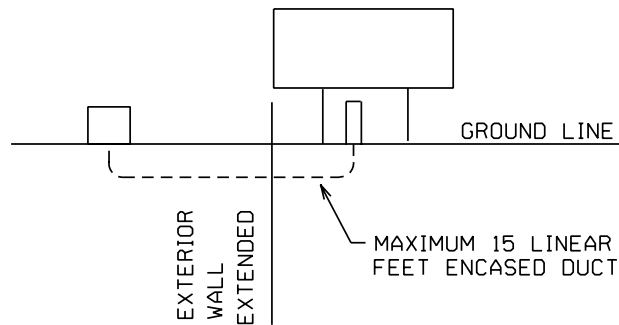
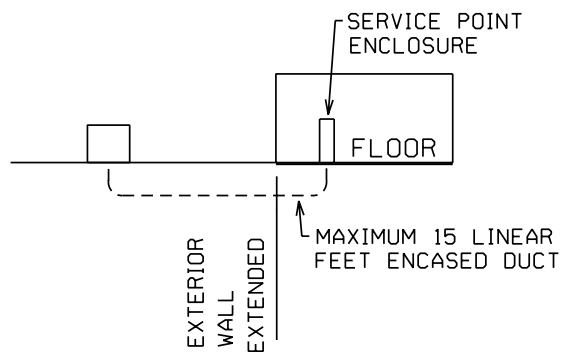


FIGURE 4



Note: See notes on next page.

470 FIVE FOOT RULE EXCEPTIONS

470.1 The Company will provide and install cable to extend to the Customer's service point enclosure if the Customer installs concrete encased conduit from the inside face of the exterior wall to the delivery point enclosure. The 15 foot measurement begins at the center of the duct bank where it penetrates the exterior wall or wall extended. The total length of this conduit run cannot exceed 15 linear feet and can only penetrate one floor.

470.2 The Five Foot Rule only applies to services in areas not designated by the Company as "Underground Distribution Areas".

470.3 Should the Customer propose to install multiple service point enclosures in a parallel service, all service point enclosures must meet all of the requirements of this Five Foot Rule.

470.4 In an existing installation where the Company has installed the service lateral into the Customer's building and the Customer proposes an expansion and paralleling of their service point enclosures, all of the expanded service point facilities must meet all of the requirements of the Company's Five Foot Rule.

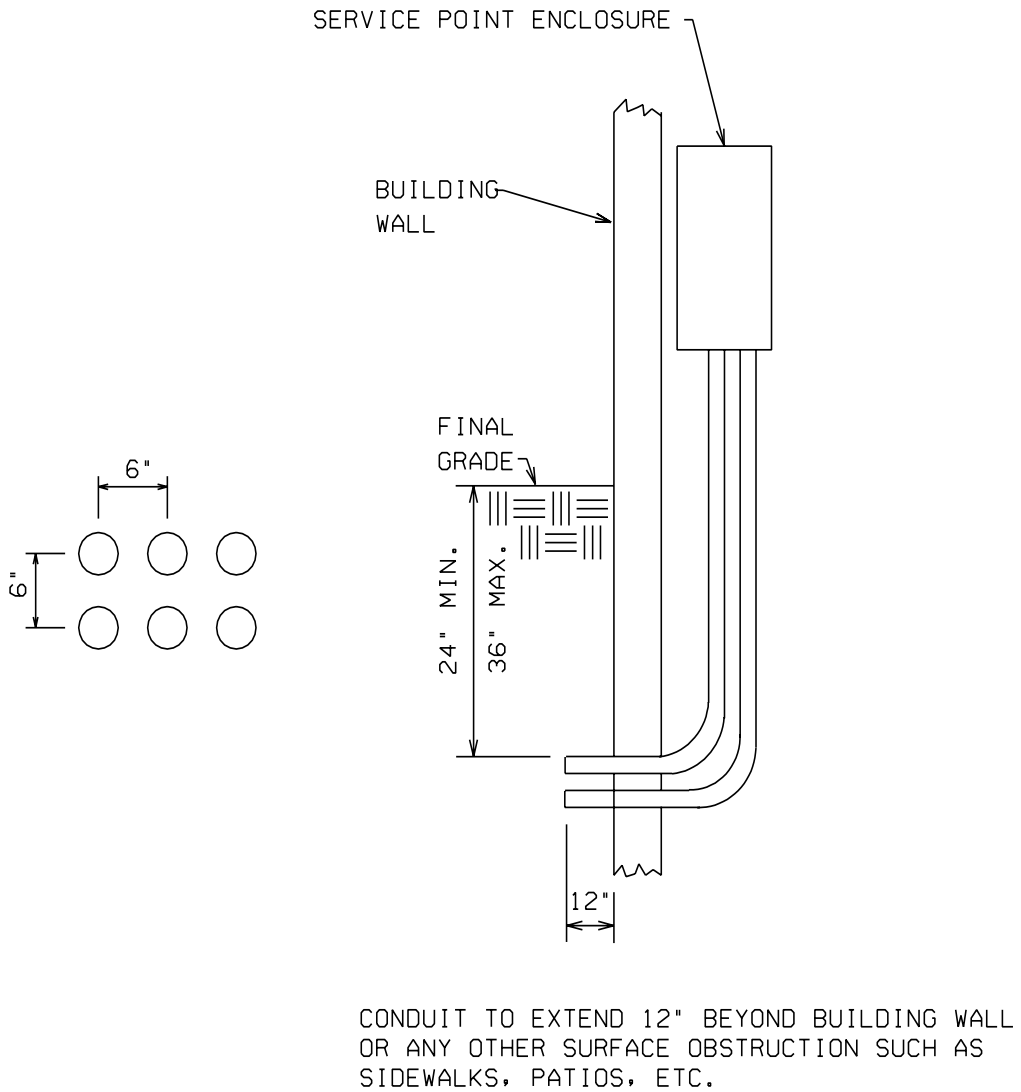
470.5 The Company will not install service cables if the transformer or secondary is located in a vault.

480 OPTIONAL CUSTOMER CONNECTION BOX

480.1 A Customer owned connection box may be installed at a location meeting the Five Foot Rule if the Customer's service point is in a location not qualifying for the Company to install the service. See [Section 590](#) for company requirements for Customer owned connection boxes.

480.2 In lieu of the connection box, the Customer has the option of providing and installing the service lateral to the Company's transformer.

490 CUSTOMER CONDUIT FOR SERVICE ENTRANCE



TYPICAL 6-WAY 4" CONDUIT ENTRANCE THROUGH THE WALL

Note: See notes on next page.

490 CUSTOMER CONDUIT FOR SERVICE ENTRANCE

490.1 When the Company's service lateral terminates inside the Customer's building, the Customer shall install, own and maintain all conduit (including spares) entering the building. Any conduit used for Company cables shall be electrical grade, and if plastic must be at least schedule 40 PVC or thicker, be gray in color and meet the latest appropriate edition of ANSI/NEMA and ASTM standards. The Customer must secure approval from the Company for all these proposed conduit installations.

490.2 The Customer shall install enough 4 inch conduits to hold the number of sets of 750 kcmil aluminum RHH-RHW cables needed to load their main disconnecting device in accordance with the National Electrical Code.

490.3 The Customer owned conduit shall extend from the delivery point enclosure through the exterior wall and a minimum of 12 inches beyond the exterior surface of the exterior wall. This end of the conduit shall be marked so as to be easily located by the Company.

490.4 When two or more conduits are used in order to accommodate standard spacers, a 1-1/2 inch separation between conduits shall be maintained outside of the building.

490.5 Generally the two (2) 90 degree bends at each end and an additional 90 degree bend in between are the total number of bends allowed in a conduit run.

490.6 Where bends are necessary, sweep ells shall be used and they shall have a minimum radius of six times the conduit diameter with a minimum radius of 18 inches for conduits smaller than 3 inch.

490.7 Customer installed LB bends shall not be used because they do not provide sufficient bending radius for Company conductors.

490.8 Aluminum conduit shall not be installed through masonry walls. PVC is the preferred conduit for these installations. Where conduit is used in direct burial applications, it must be a minimum of schedule 40.

490.9 When concrete encased conduit is specified by the Company, the encasement shall be a minimum 3 inch envelope of 3000 psi concrete with a 3/4 inch maximum aggregate. The concrete shall be vibrated to eliminate voids.

490.10 The inner surface of the conduit shall be free of obstructions that may damage cable during installation. The Customer shall install plugs or equivalent in all Customer owned conduit to prevent dirt and/or debris from entering. Customer must provide and install a 1000 lb. tested nylon pull string.

490.11 Regardless of who installs and owns the service, it is always the Customer's responsibility to water seal all conduits entering a building. (NEC Article 230-8) The Customer shall water seal the conduit on the interior after the service lateral is installed. The Company will cooperate with the Customer during installation with the objective of permitting the water sealing before the lateral is energized.

490.12 Insofar as practical, the Company will install a seal intended to prevent the entrance of gas, on the external end of conduit(s) entering buildings. (NESC Article 322-B4) The Customer also is required to install the gas seal where he owns and installs the service lateral. (NEC Article 230-8) Should the Customer conduit and service lateral extend to the Company transformer, the Company will install a seal intended to prevent the entrance of gas, on the transformer end of the conduit(s) insofar as practical.

490.13 If the conduit that turns up in the transformer is other than 2, 3, 4, or 6 inch, the Customer must furnish the seal and the Company will install it. Any sealing material or device used by the Customer must be compatible with the insulation of the Company's service cable.

Note: Avoid damaging existing underground utilities. Dial **811** before you dig.(See **UTILITY DAMAGE PREVENTION**)

Here are a few reminders on eye protection:

Always use eye protection!

Match the eye protection to the hazard.

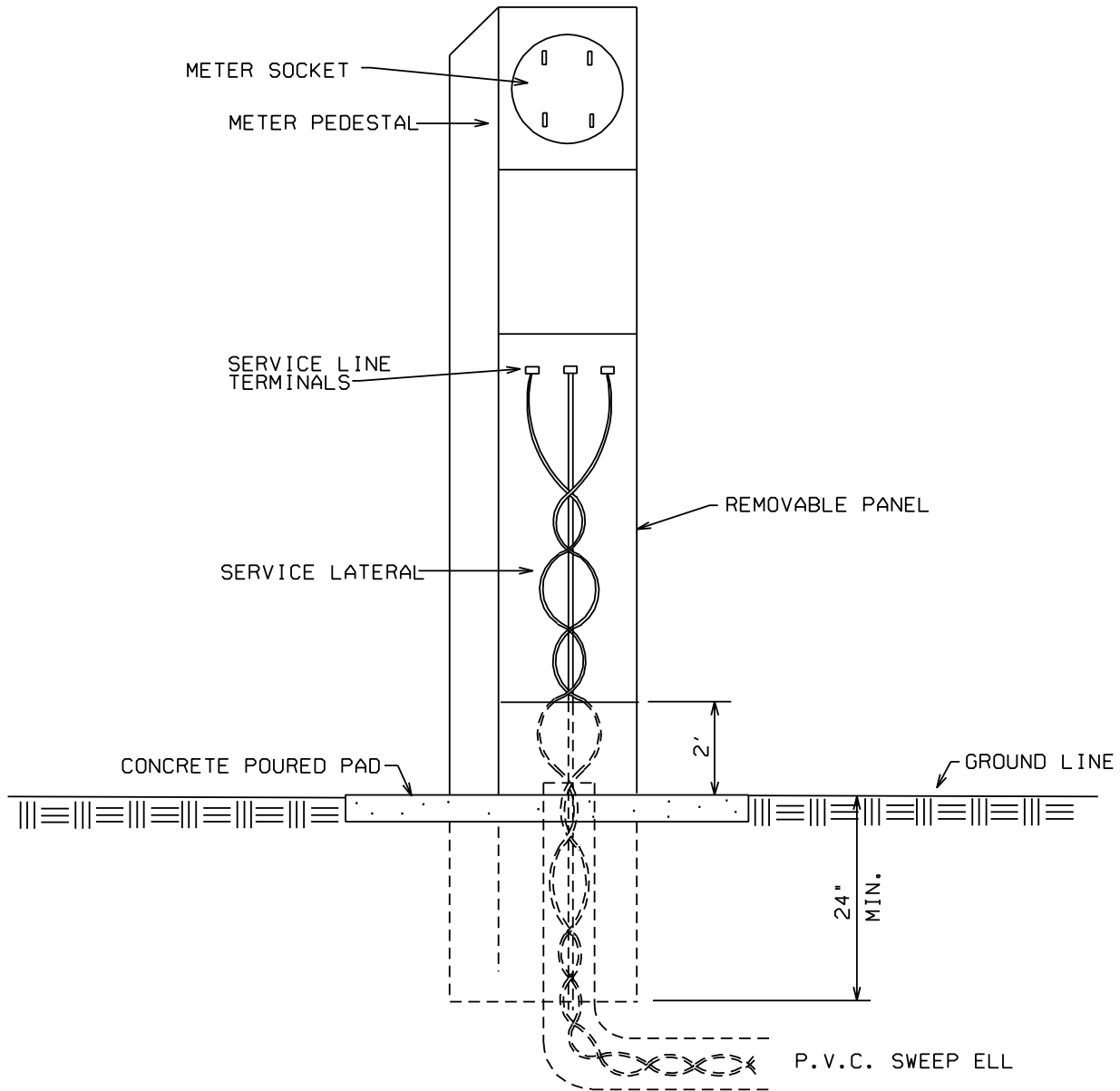
Get a good fit. It should be snug but reasonably comfortable.

Inspect protective eye wear before and after use.

Replace lenses that are badly scratched or pitted.

KEEP 'EM COVERED!

500 CUSTOMER OWNED METER PEDESTAL



Note: See notes on next page.

500 CUSTOMER OWNED METER PEDESTAL

500.1 Self-contained meters may be installed in Customer owned combination service meter pedestals used to serve certain types of loads, such as mobile homes. The pedestal must be a type approved by the Company, and is supplied, installed and maintained by the Customer. The Company can advise which pedestals have been previously approved.

500.2 A Customer proposing to use other than a previously approved pedestal must submit specifications of the pedestal to the Company for approval prior to installation.

500.3 Company approval of a pedestal is for the meter socket and unmetered wireways only. The Customer is responsible for the fault current capability of the breaker.

500.4 The pedestal's breaker and receptacle panel are to be separated by a barrier from adjoining compartments.

500.5 When the conditions of the Company's service plans are met, the service lateral and meter are installed by the Company. The Customer furnishes and installs all other materials.

500.6 The pedestal is to be set in a concrete pad a minimum of 2 feet by 2 feet by 4 inches thick on final grade. The Customer is to backfill around the installation to provide good support and ensure that the pedestal is plumb. The ground line should be approximately 2 inches below the removable pull Section of the pedestal.

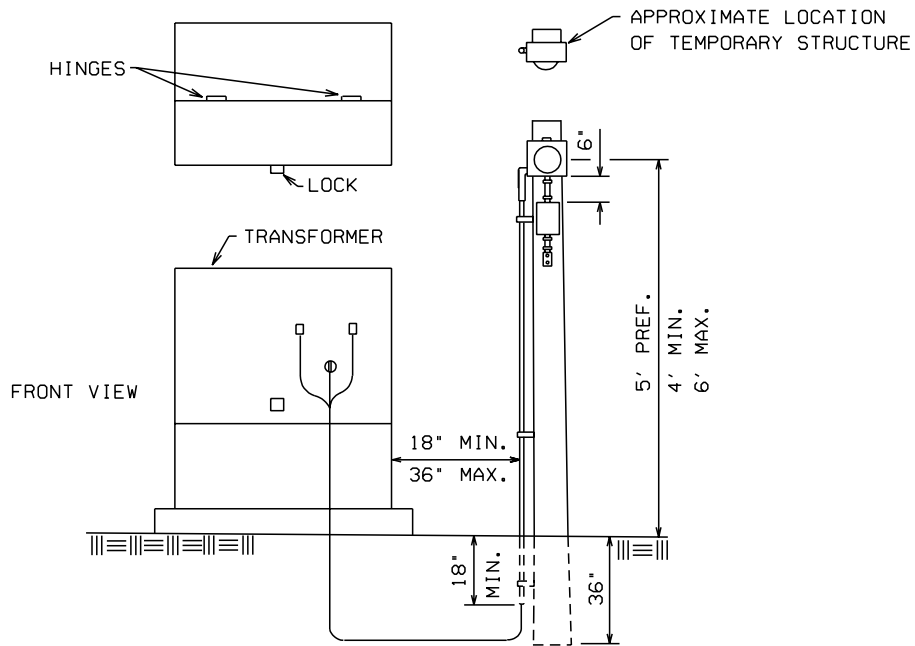
500.7 The pedestal is to be positioned so the meter socket does not face the dwelling unit being served and is not obstructed in any other manner. It is recommended that the pedestal be positioned at a right angle to the unit being served. On multiple installations, all meters should face the same direction for good appearance.

500.8 The Company will connect the service lateral conductors to the line terminals, install and seal the pull Section panel and blank off and seal the meter socket ring or cover.

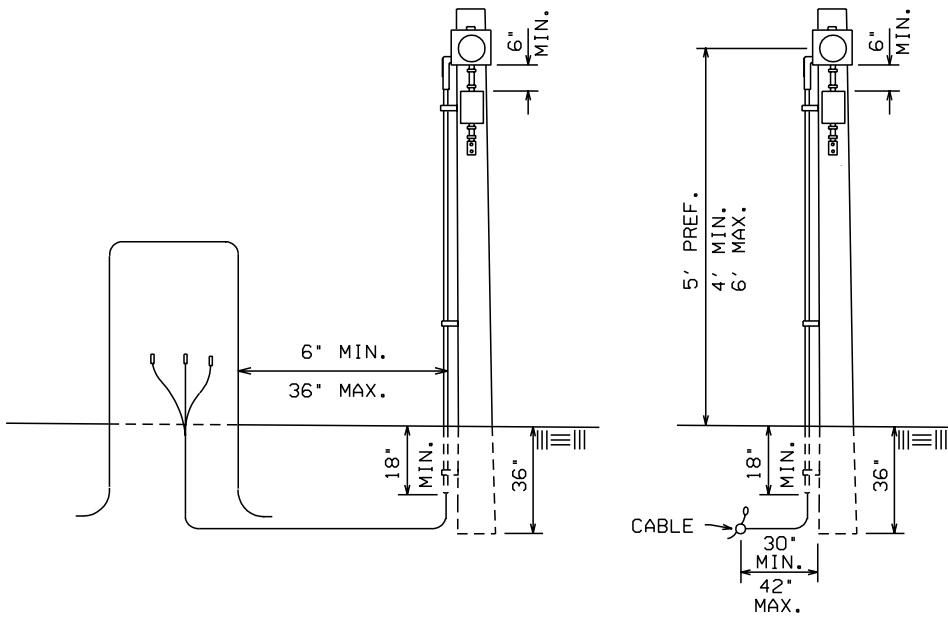
500.9 A clear space (see definition "[Clear Space](#)") shall be maintained.

Note: Avoid damaging existing underground utilities. Dial **811** before you dig.(See [UTILITY DAMAGE PREVENTION](#))

510 UNDERGROUND TEMPORARY SERVICE



FROM PADMOUNT TRANSFORMER



FROM SECONDARY PEDESTAL

FROM STUB UP

Note: See notes on next page.

510 UNDERGROUND TEMPORARY SERVICE

510.1 A request for a new service, a temporary service, or a service upgrade is to be initiated by the Customer by either calling the Company's toll free number (1-866-DOM-HELP) or by going to the Company's web site www.dom.com and following the instructions shown there. Initiate this request as far in advance as possible. Refer to "[Requests For Service](#)" (located after the Introduction) for an explanation of the Company's process.

510.2 The Customer shall pay to the Company a temporary service charge which shall be the estimated net cost (including all applicable overhead costs) of installing and removing the service facilities furnished by the Company both on and off the Customer's premises.

510.3 Underground temporary service may be provided at the Company's current flat temporary service charge if the temporary service is single phase, 100 amperes or less capacity and the only facility required is an underground service cable to a Customer owned structure located no more than 36 inches from an existing adequate; padmounted transformer, secondary pedestal or secondary cable stub-up.

510.4 The location of the temporary structure is specified by the Company prior to its installation by the Customer and is to be on the secondary side of the transformer.

Note: Avoid damaging existing underground utilities. Dial **811** before you dig.(See [UTILITY DAMAGE PREVENTION](#))

510.5 The meter support structure shall be a minimum of 2 inch x 8 inch treated wood (see definition) which is adequate to support meter base Stock No. 65.8400. The Customer, not the Company, is responsible for sizing support structures used for other meter bases or metering equipment.

510.6 Service equipment and associated devices shall be weatherproof.

510.7 The conduit and fittings for the installation of the Company's cable shall be 1-1/4 inch galvanized or 1-1/4 inch PVC minimum schedule 40, or as designated by the local authority having jurisdiction. Material is furnished and installed by Customer.

510.8 The Company will furnish and install the line side cable in the Customer owned conduit to the line side of the meter base.

510.9 Stk. No. 65.8400 meter base (100 amp service or less) is furnished by the Company and installed by the Customer. Use of other meter bases or metering equipment require written approval by the Company's Metering department.

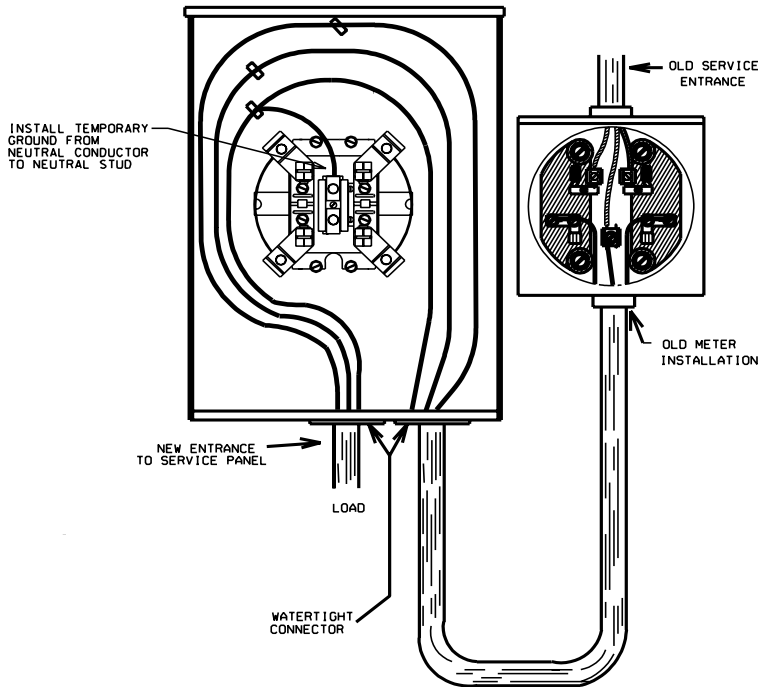
510.10 Cable where entering and exiting the meter base shall have watertight connectors that do not require other additional sealing material. Connectors must resist the insertion of foreign objects.

510.11 The center of the meter shall be no lower than 4 feet or higher than 6 feet (5 feet preferred) above final grade or the final grade of the traveled surface.

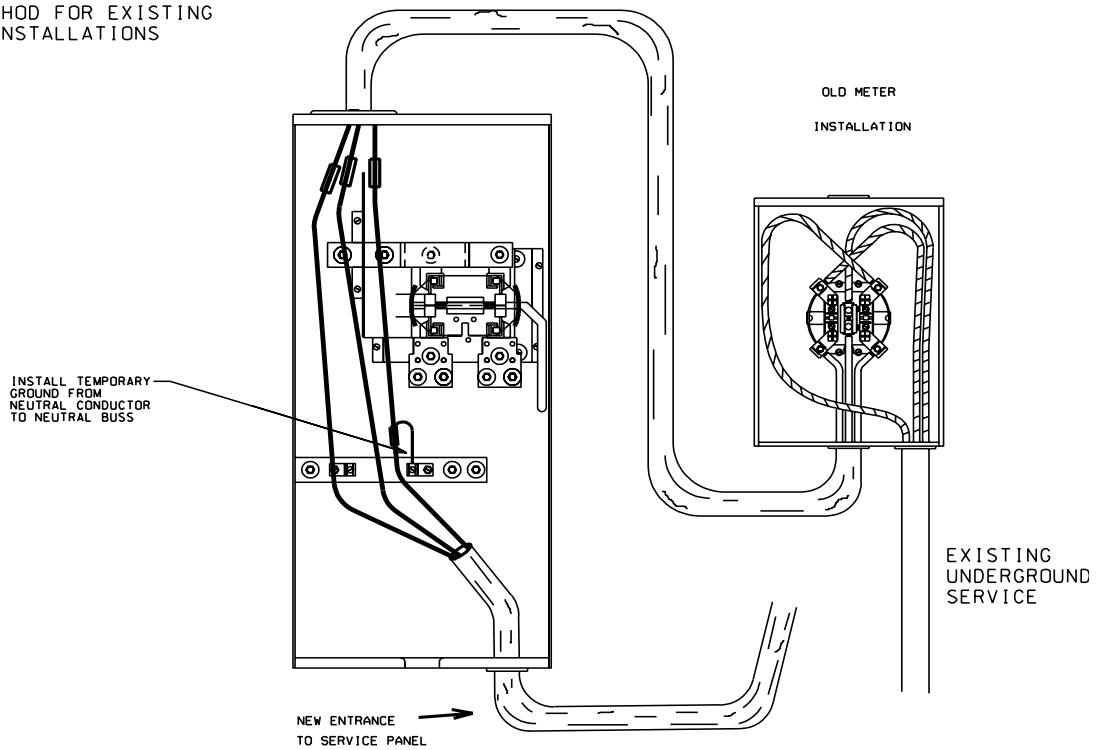
510.12 A clear space (see definition "[Clear Space](#)") shall be maintained.

520 TYPICAL UNDERGROUND TEMPORARY REWIRE ARRANGEMENTS

SUGGESTED METHOD FOR EXISTING OVERHEAD INSTALLATIONS



SUGGESTED METHOD FOR EXISTING UNDERGROUND INSTALLATIONS



Note: See notes on next page

520 TYPICAL UNDERGROUND TEMPORARY REWIRE ARRANGEMENTS

520.1 A request for a new service, a temporary service, or a service upgrade is to be initiated by the Customer by either calling the Company's toll free number (1-888-569-5700) or by going to the Company's web site www.dom.com and following the instructions shown there. Initiate this request as far in advance as possible. Refer to "[Requests For Service](#)" (located after the Introduction) for an explanation of the Company's process.

520.2 This installation must be made in a manner so that no unmetered electricity is used.

520.3 All energized conductors and connectors must be insulated. Temporary connectors and insulating tape are furnished and installed by the Customer. The new cable must be long enough to make up the new meter terminals when the new meter is placed in service.

520.4 The temporary cable between the old meter base and new meter base may be the old entrance cable removed from the old service panel or a new piece of cable, whichever the Customer prefers. The hole in which this cable enters must be sealed to keep weather, debris, and birds from entering the meter base, and to prevent accidental contact with energized conductors.

520.5 The Company will remove the temporary ground when permanent service is installed.

520.6 Additional loads should not be used until permanent service is completed.

520.7 The line side knockout is not to be used for temporary cables on conduit installations.

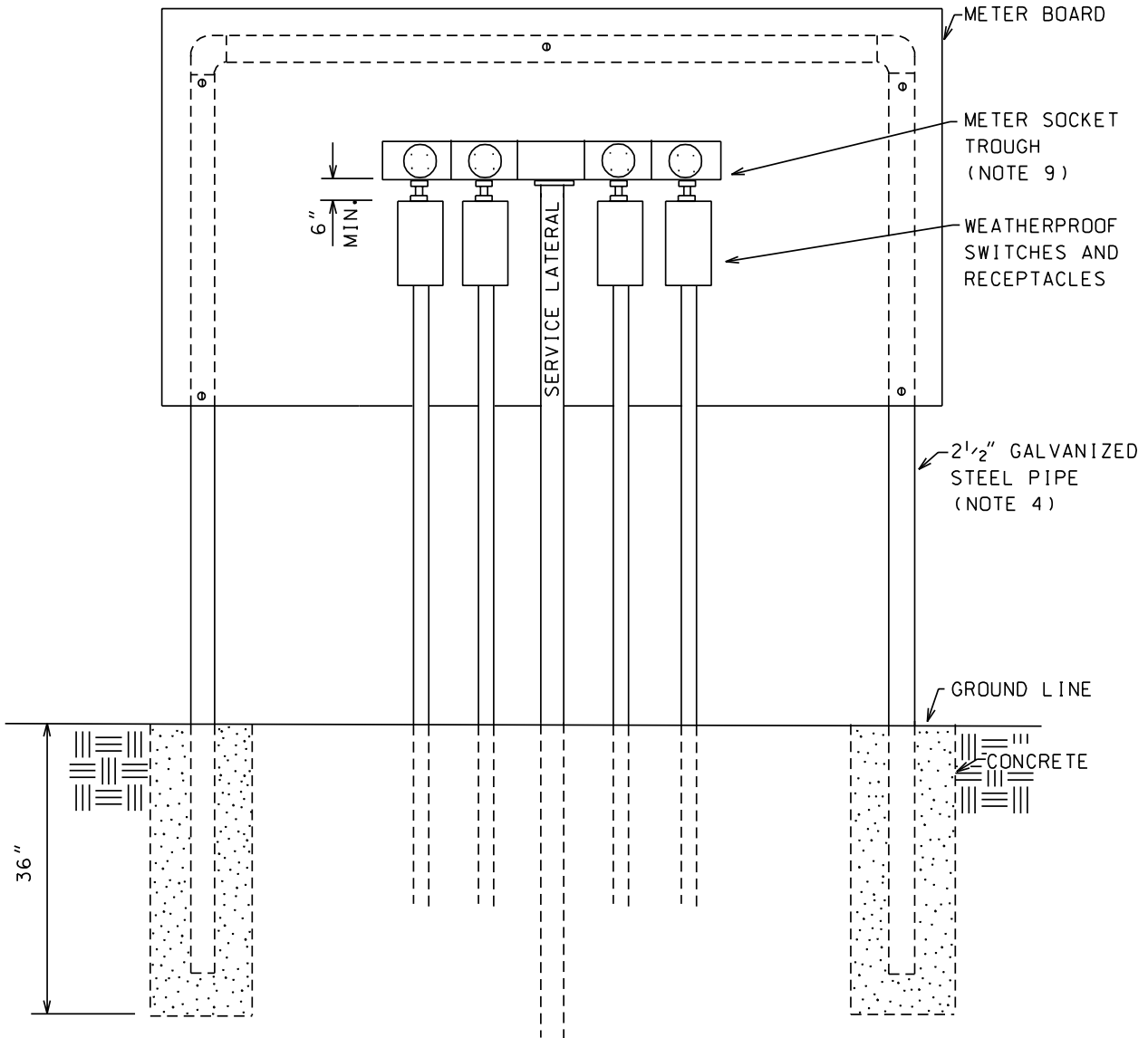
520.8 A Company representative may authorize a licensed electrician to remove the seal and meter. |

520.9 The Company shall be contacted when the service upgrade is complete.

520.10 The line side knockout is not to be used for temporary cables on underground installations.

Note: Avoid damaging existing underground utilities. Dial **811** before you dig. (See [UTILITY DAMAGE PREVENTION](#))

530 CUSTOMER METER BOARD, PRE-GANGED METER BASES
SINGLE PHASE, 3-WIRE, 240/120 V, 200 AMPS PER POSITION



Note: See notes on next page.

530 CUSTOMER METER BOARD, PRE-GANGED METER BASES, SINGLE PHASE, 3-WIRE, 240/120 V, 200 AMPS PER POSITION

530.1 Two to six position pre-ganged meter sockets are furnished by the Company and installed by the Customer. With the exception of the service lateral, meter, and riser, all material including the meter board is furnished and installed by the Customer.

530.2 For more than six meters, a duplicate board, on the opposite side, with a separate service can be used or repeat the arrangement at another location.

530.3 The meter board must be made of treated wood (see definition), either boards or plywood, not less than 3/4 inch thick. Mounting to the pipe shall be with rust resistant bolts. The meter board is to be framed to prevent flexing.

530.4 Other support arrangements may be used instead of the 2-1/2 inch galvanized pipe such as:

- a) 6 inch by 6 inch treated posts set 36 inches deep,
- b) 3 - 2 inch by 6 inch treated wood laminated and set 36 inches deep,
- c) treated wood poles with a minimum top diameter of 6 inches set 36 inches deep,
- d) 4 inch I beams set 24 inches deep in concrete or
- e) other similar type construction approved by the Company prior to its installation.

530.5 The Company's conduit riser shall be braced or supported so that it is not subject to damage or free to vibrate.

530.6 When two or more meters are located on the same building or structure, whether the meters are grouped or not, the Customer shall mark each meter base or ganged socket clearly identifying the service that is connected to the meter. The marking shall be legible and permanent and placed inside and outside the meter enclosure. The inside marking must be somewhere other than on the cover. The meter's corresponding Customer load panel shall be marked in a similar manner.

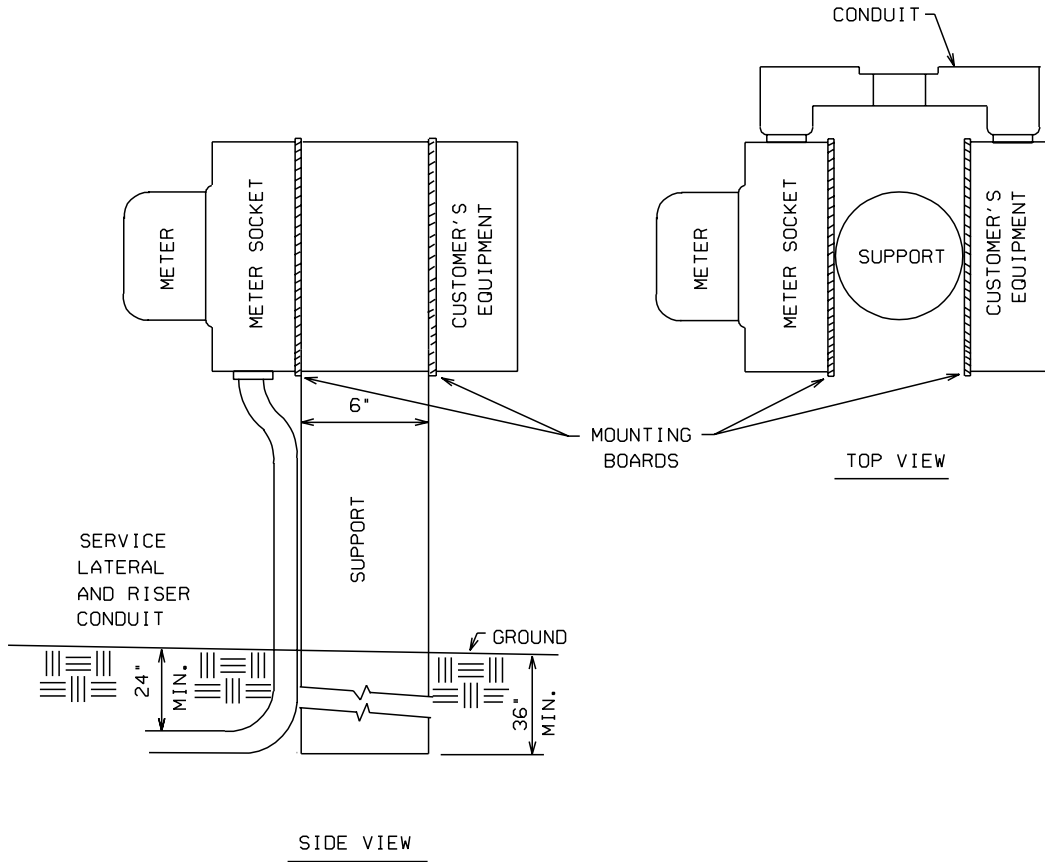
530.7 Floating facilities, piers and marinas will be served on land at a mutually agreeable location with the metering equipment located in an equipment house or on a suitable Customer owned structure or meter pedestal.

530.8 Service entrance cable exiting the bottom or side of the meter base shall have a watertight connector that will resist the insertion of foreign objects.

530.9 The centers of the meters shall be no lower than 4 feet or higher than 6 feet (5 feet preferred) above final grade of the of the traveled surface.

530.10 A clear space (see definition "[Clear Space](#)") shall be maintained.

540 CUSTOMER OWNED METER SUPPORT, 400A OR LESS



540.1 All material will be furnished and installed by the Customer except the service lateral, meter and riser. The Company furnishes the meter base for installation by the Customer.

540.2 The mounting panels must be made of 10 gauge metal or treated wood, either boards or plywood not less than 3/4 inch thick.

540.3 The support may be a treated pole with a 6 inch minimum top diameter, 3 each 2 inch x 6 inch treated wood laminated, a 4 inch I beam or a structure similar to the drawing for Section 510.

540.4 The conduit connecting the meter base to the Customer's switchgear may be run from the bottom of the meter base to the bottom of the switchgear but not through the back. This can be service entrance cable if approved by the electrical inspector.

540.5 Cable where entering and exiting the meter base shall have watertight connectors that do not require other additional sealing material. Connectors must resist the insertion of foreign objects.

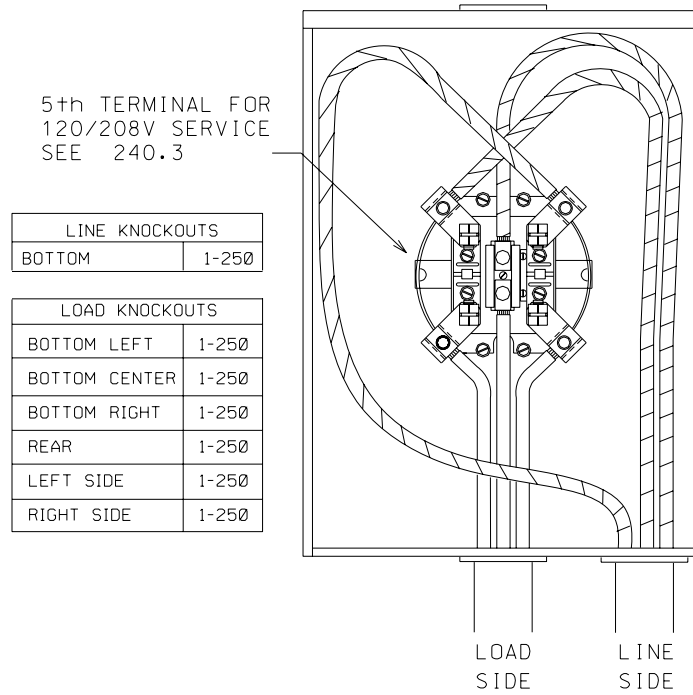
540.6 The meter and switchgear may also be mounted side by side.

540.7 The center of the meter shall be no lower than 4 feet or higher than 6 feet (5 feet preferred) above final grade or the final grade of the traveled surface.

540.8 A clear space (see definition "[Clear Space](#)") shall be maintained.

550 UNDERGROUND 200 AMP AND LESS, SINGLE PHASE, 3-WIRE, 240/120 V or 208/120 V LINE & LOAD

Stock Number 65.7370



NOTE: METER ADDRESS TO BE NOTED INSIDE ENCLOSURE (NOT ON COVER) IN A LEGIBLE AND PERMANENT MANNER. SEE SEC. 220.7

550.1 The Customer shall leave ample line and load conductor for the Company to train, terminate and connect to the meter terminals.

550.2 Effective June 9, 1999 the Company began allowing electrical contractors to make up Customer owned conductor connections in meter sockets equipped with "lay-in-type" connectors. Contractors making these connections will do so as indicated in [Section 240.4](#).

550.3 Cable where entering and exiting the meter base shall have watertight connectors that do not require other additional sealing material. Connectors must resist the insertion of foreign objects.

550.4 See [Section 700](#) for approved conductor sizes and Sections [710/720](#) for meter base sizes.

550.5 See [Section 730](#) for the approved entry and exit knockouts on Company meter bases. No holes shall be cut without securing Company approval. The existence of a knockout does not necessarily mean it can be used.

550.6 A clear space (see definition "[Clear Space](#)") shall be maintained.

555 UNDERGROUND 320 AMP (400 AMP MAX), SINGLE PHASE, 3-WIRE, 240/120 OR 208/120 V

Stock Number 65.7412

555.1 The Customer shall leave ample line and load conductor for the Company to train, terminate and connect to the meter terminals.

555.2 Two separate panels may be served from this meter base. The dual set screw terminals have a range of #6 to 250 kcm.

555.3 The bypass handle **MUST NOT** be used to make or break load.

555.4 Cable where entering and exiting the meter base shall have watertight connectors that do not require other additional sealing material. Connector must resist the insertion of foreign objects.

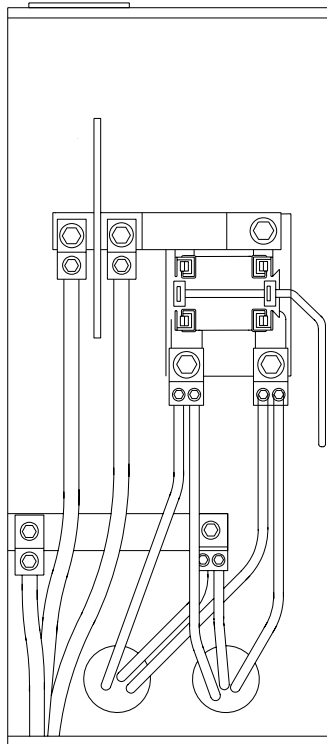
555.5 See [Section 700](#) for approved conductor sizes and Sections [710/720](#) for meter base sizes.

555.6 See [Section 730](#) for the approved entry and exit knockouts on Company meter bases. No holes shall be cut without securing Company approval. The existence of a knockout does not necessarily mean it can be used.

555.7 A clear space (see definition "[Clear Space](#)") shall be maintained.

LINE KNOCKOUTS	
BOTTOM	1-500

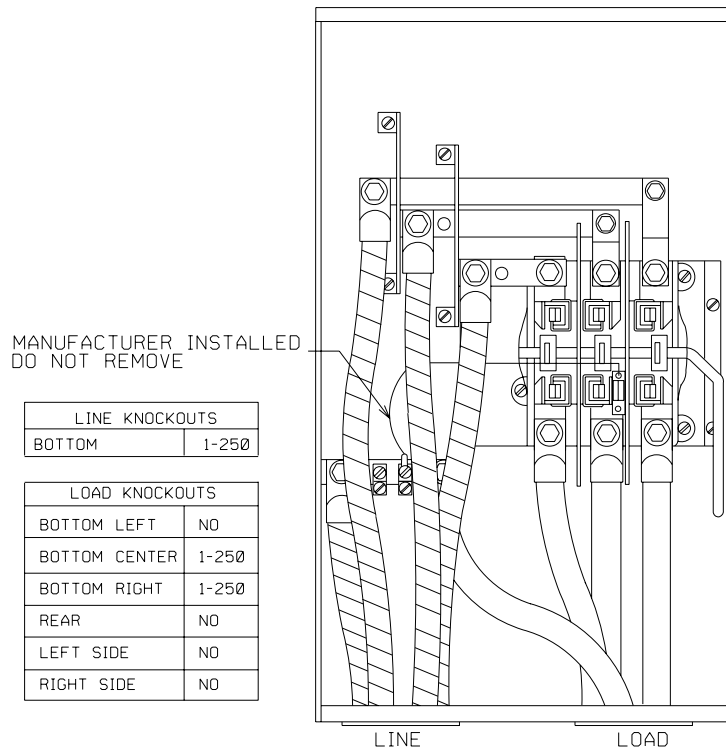
LOAD KNOCKOUTS	
BOTTOM LEFT	NO
BOTTOM CENTER	1-500
BOTTOM RIGHT	1-500
REAR-LEFT	1-250
REAR-RIGHT	1-250
LEFT SIDE	1-250
RIGHT SIDE	1-250



NOTE: METER ADDRESS TO BE NOTED INSIDE ENCLOSURE (NOT ON COVER) IN A LEGIBLE AND PERMANENT MANNER. SEE SEC. 220.7

560 UNDERGROUND 200 AMP MAXIMUM, THREE PHASE, 4-WIRE, 240/120 OR 208/120 V

Stock Number 65.7425



NOTE: METER ADDRESS TO BE NOTED INSIDE ENCLOSURE (NOT ON COVER) IN A LEGIBLE AND PERMANENT MANNER. SEE SEC. 220.7

560.1 The Customer shall leave ample line and load conductor for the Company to train, terminate and connect to the meter terminals. The Company will only accept compression connectors on this meter base.

560.2 On 240/120 volt three phase, the 208 volt leg must be identified with the color orange (NEC 230.56) and connected to "C" phase. "C" phase marking is a Company requirement due to the need to have wiring practices that are consistent with our existing metering.

560.3 Cable where entering and exiting the meter base shall have watertight connectors that do not require other additional sealing material. Connectors must resist the insertion of foreign objects.

560.4 The by pass handle **MUST NOT** be used to make or break load.

560.5 See [Section 700](#) for approved conductor sizes and Sections [710/720](#) for meter base sizes.

560.6 See [Section 730](#) for the approved entry and exit knockouts on Company meter bases. No holes shall be cut without securing Company approval. The existence of a knockout does not necessarily mean it can be used.

560.7 A clear space (see definition "[Clear Space](#)") shall be maintained.

565 UNDERGROUND 320 AMP (400 AMP MAX), THREE PHASE, 4-WIRE 208/120 V

Stock Number 42.016148

565.1 The Customer shall leave ample line and load conductor for the Company to train, terminate and connect to the meter terminals. The Company will only accept compression connectors on this meter base.

565.2 Two separate panels may be served from this meter base.

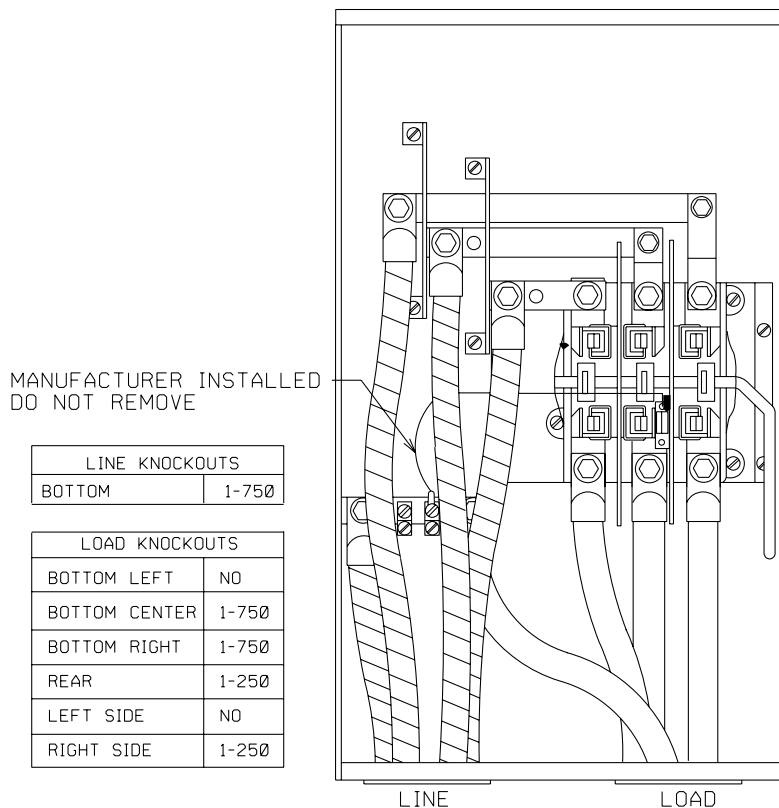
565.3 The by pass handle **MUST NOT** be used to make or break load.

565.4 Cable where entering and exiting the meter base shall have watertight connectors that do not require other additional sealing material. Connectors must resist the insertion of foreign objects.

565.5 See [Section 700](#) for approved conductor sizes and Sections [710/720](#) for meter base sizes.

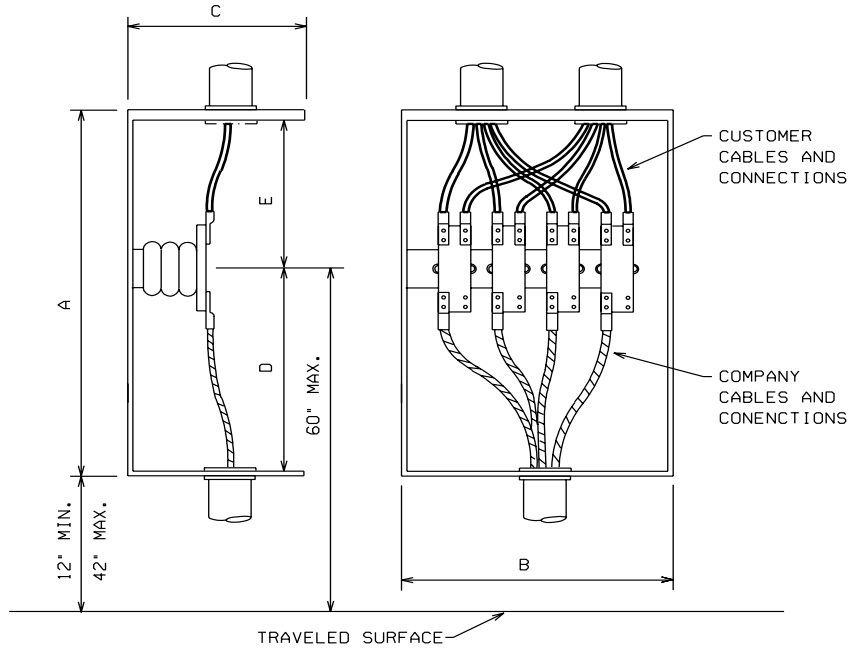
565.6 See [Section 730](#) for the approved entry and exit knockouts on Company meter bases. No holes shall be cut without securing Company approval. The existence of a knockout does not necessarily mean it can be used.

565.7 A clear space (see definition "[Clear Space](#)") shall be maintained.



NOTE: METER ADDRESS TO BE NOTED INSIDE ENCLOSURE (NOT ON COVER) IN A LEGIBLE AND PERMANENT MANNER. SEE SEC. 220.7

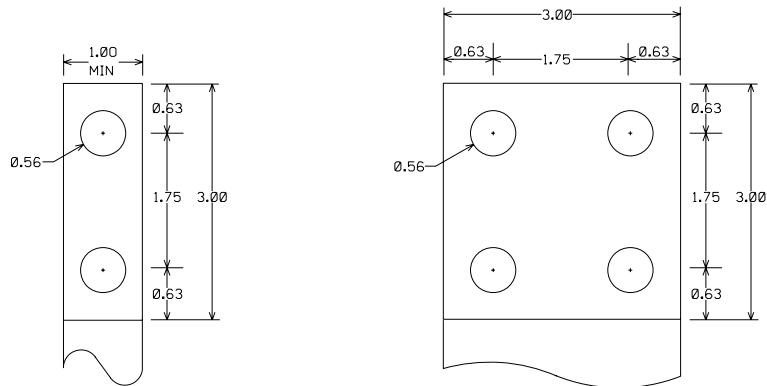
590 TYPICAL CUSTOMER OWNED CONNECTION BOX, 600 V OR LESS,



MINIMUM DIMENSIONS

Sets of Conductors	MINIMUM DIMENSIONS					Bus Bars		Spacing Between Bars
	A	B	C	D	E	Width	Thickness	
1	36"	24"	10"	18"	18"	2"	1/4"	2"
2 - 3	42"	36"	12"	24"	18"	4"	1/2"	4"
4 - 8	60"	42"	19"	36"	24"	4"	3/4"	5"

590.1 The connection box shall be of sufficient size, for the transition and make up of the Customer's and the Company's conductors. The Customer and Company shall connect their respective conductors to the bus bars that shall have, at a minimum, the standard 4 hole NEMA spacing at each end.



590.2 The Customer shall furnish and install all material shown except: on indoor installations, the Company will install the service lateral to the connection box provided its location meets the Five Foot Rule. On outdoor installations, the Company installs the service lateral and service entrance conduit(s) to the connection box. The Customer shall provide holes in the box for the Company's conduit(s).

590.3 The connection box shall be constructed to NEC specifications. NEC Article 314.

590.4 The connection box shall be sealable.

590.5 The bus bar sizes given are for copper. If aluminum bars are used, they must have equivalent current carrying capacity.

590.6 On 120/240 volt three phase, the 208 volt leg must be identified with the color orange (NEC 230.56) and connected to “C” phase. “C” phase marking is a Company requirement due to the need to have wiring practices that are consistent with our existing metering.

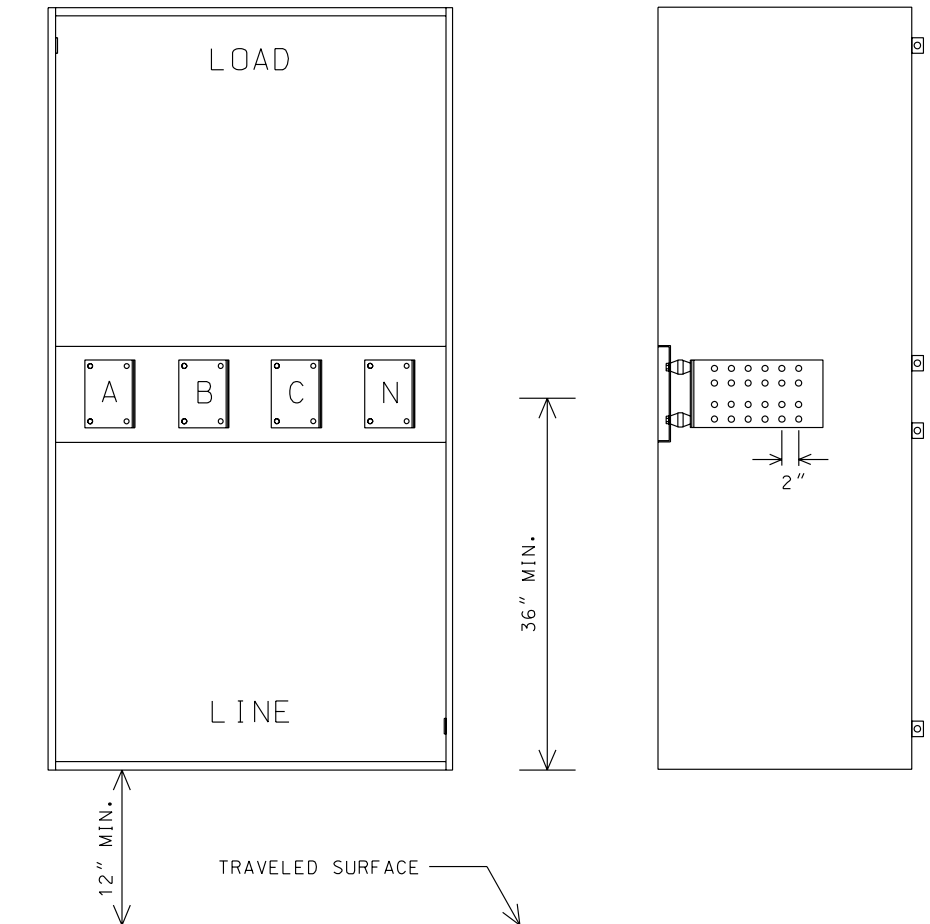
590.7 The phases and neutral bus bars shall be clearly identified.

590.8 A clear space (see definition “[Clear Space](#)”) shall be maintained.

590.9 For more than 8 sets of conductors, please contact Dominion for guidance.

590.10 Dominion will only install compression connectors to this type of arrangement. See 240.6.

595 CONNECTION BOX GREATER THAN EIGHT SETS OF CONDUCTORS



595.1 The connection box shall be of sufficient size, for the transition and make up of the Customer's and the Company's conductors. Unless otherwise notified, the Company will install multiple sets of 750 kcm compressed aluminum with compression terminations.

595.2 The Customer shall furnish and install all material shown except on indoor installations, the Company will install the service lateral to the connection box provided its location meets the Five Foot Rule. On outdoor installations, the Company installs the service lateral and service entrance conduit(s) to the connection box. The Customer shall provide holes in the box for the Company conduit(s).

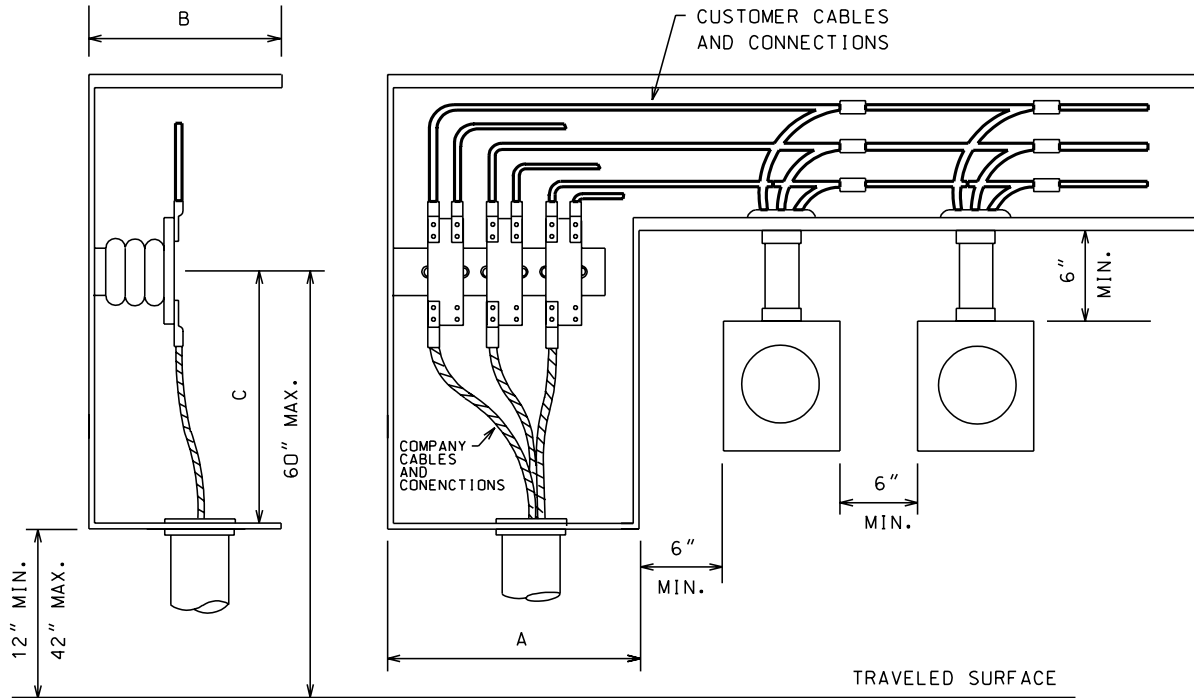
595.3 The connection box shall be constructed to NEC specifications (Article 314).

595.4 The connection box shall be sealable.

595.5 The phases and neutral shall be clearly identified as shown.

595.6 A clear space (see definition "Clear Space") shall be maintained.

600 CUSTOMER OWNED TROUGH WITH CONNECTION BOX, 6 METERS OR LESS,



MINIMUM DIMENSIONS

Sets of Conductors	MINIMUM DIMENSIONS			Bus Bars		Spacing Between Bars
	A	B	C	Width	Thickness	
1	24"	10"	18"	2"	1/4"	2"
2 - 3	36"	14"	24"	4"	1/2"	4"
4 - 8	42"	19"	36"	4"	3/4"	5"

Note: See notes on next page.

600 CUSTOMER OWNED TROUGH WITH CONNECTION BOX, 6 METERS OR LESS

600.1 The bus bars shall have the standard 4 hole NEMA spacing at each end.

600.2 The connection box at one end of the trough is the space reserved as a transition and make up area for the Customer's and Company's conductors. The Customer and Company shall connect their conductors to the bus bars.

600.3 The Customer shall furnish and install all material shown except: on indoor installations, the Company will install the service lateral to the connection box provided its location meets the Five Foot Rule. On outdoor installations, the Company typically installs the service lateral and service entrance conduit(s) to the connection box. The Customer shall provide holes in the box for the Company conduit(s).

600.4 The connection box and trough shall be constructed to NEC specifications. NEC Article 314.

600.5 The connection box shall have a separate cover to allow the Company to access its conductors without having to remove the trough cover. Both connection box and trough must be sealable.

600.6 Only line conductors are allowed in the trough.

600.7 Where the Customer and Company each have only one conductor per phase, instead of the connection box, the trough may turn 90 degrees and extend vertically a minimum of 2 feet and the bus bars omitted.

600.8 On meter bases where the Company terminates Customer conductors, the Customer shall leave ample line and load conductor for the Company to train, terminate and connect to the meter terminals. These connections are to be made with the conductors de-energized.

600.9 Service entrance conductor where entering and exiting meter bases shall have watertight connectors that do not require other additional sealing material. Connectors must resist the insertion of foreign objects.

600.10 The centers of the meters shall be no lower than 4 feet or higher than 6 feet (5 feet preferred) above final grade or the final grade of the traveled surface.

600.11 When two or more meters are located on the same building or structure, whether the meters are grouped or not, the Customer shall mark each meter base or ganged socket clearly identifying the service that is connected to the meter. The marking shall be legible and permanent and placed inside and outside the meter enclosure. The inside marking must be somewhere other than on the cover. The meter's corresponding Customer load panel shall be marked in a similar manner.

600.12 A clear space (see definition "[Clear Space](#)") shall be maintained.

600.13 The phases and neutral bus bars shall be clearly identified.

600.14 Dominion will only install compression connectors to Dominion conductors in this type of arrangement. See 240.6.

Proper Lifting Prevents Back Injuries!

Keep the object or load close to you.

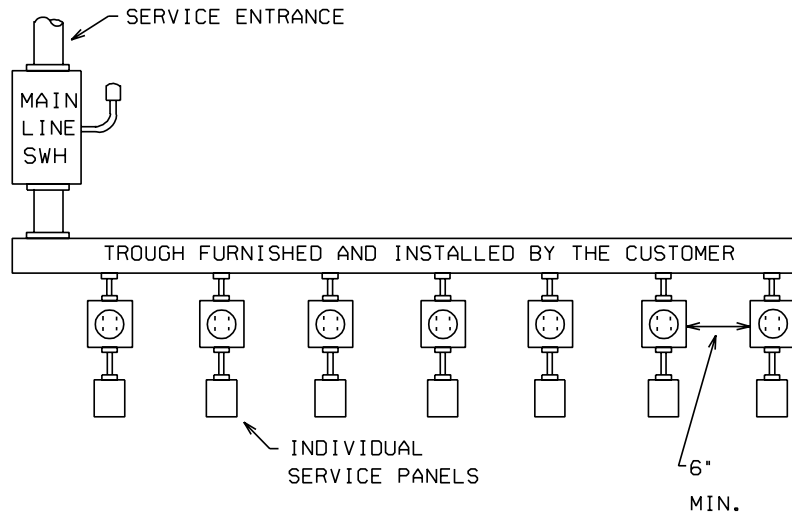
Let your legs do the work.

Get a firm footing.

Pivot properly. Keep your feet and shoulders in line.

MISCELLANEOUS METERING

610 INSTALLATION FOR SEVEN OR MORE METERS FROM ONE SERVICE



610.1 When two or more meters are located on the same building or structure, whether the meters are grouped or not, the Customer shall mark each meter base or ganged socket clearly identifying the service that is connected to the meter. The marking shall be legible and permanent and placed inside and outside the meter enclosure. The inside marking must be somewhere other than on the cover. The meter's corresponding Customer load panel shall be marked in a similar manner.

610.2 Where space does not permit a continuous row of meters, double rows may be installed with Company approval.

610.3 The centers of the meters shall be no lower than 4 feet or higher than 6 feet (5 feet preferred) above final grade or the final grade of the traveled surface.

610.4 Only Customer line side conductors are to be installed in the trough. The mainline switch and trough must be sealable.

610.5 When the service is provided from a 208/120 volt, three phase, 4 wire source, the Company will provide, install and wire a fifth terminal in single phase sockets. The Customer shall wire so as to balance the load among the three phases.

610.6 Cable where entering and exiting the meter base shall have watertight connectors that do not require other additional sealing material. Connectors must resist the insertion of foreign objects.

610.7 Where Company owned conductors terminate at the mainline switch, the line side terminals of the switch shall be designed for compression connectors having one 9/16 inch hole or two 9/16 inch holes spaced 1-3/4 inch on center. The length of the studs must be sufficient for two 750 kcmil aluminum stacking terminal connectors. If stacking lugs are to be used, the provisions for the two hole connector must be made. Where more than two 750 kcmil aluminum conductors per phase are required and/or the terminal compartment is not large enough to accommodate Company conductors, the Company shall be consulted.

610.8 A clear space (see definition "[Clear Space](#)") shall be maintained.

LET'S BE SAFE!

Always leave machine guards in place.

Use a push stick to feed materials into moving machinery.

Keep your hands away from pinch points when lifting.

Use brushes, not hands, to sweep up metal or wood chips.

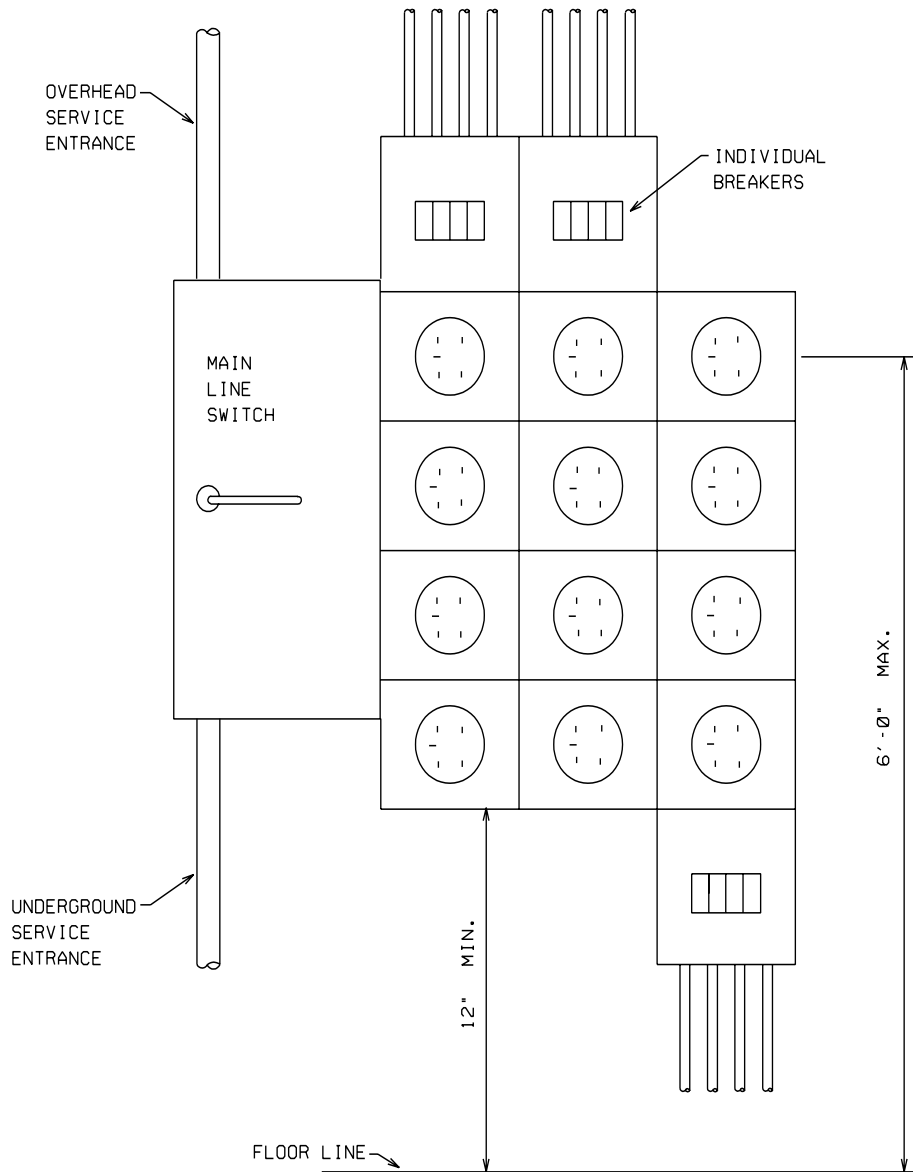
Keep hands away from moving machine parts.

Select the proper hand tool for the job and use it correctly.

Check gloves for rips and holes.

620 CUSTOMER FURNISHED COMBINED METER STACK/CIRCUIT BREAKER PANEL

Customer Furnished Combined Meter Stacks and Circuit Breaker Panel Installation for Multiple Occupancy: Single Phase 3-Wire, 208/120 V, 240/120 V or Three Phase 4-Wire, 208/120V



Note: See notes on next page.

620 CUSTOMER FURNISHED COMBINED METER STACKS AND CIRCUIT BREAKER PANEL BOARD INSTALLATION FOR MULTIPLE OCCUPANCY: SINGLE PHASE 3-WIRE, 208/120 V, 240/120 V OR THREE PHASE 4-WIRE, 208/120V

620.1 Meter sockets are furnished and installed by the Customer, type and manufacturer of equipment shall be approved by the Company prior to purchase and installation.

620.2 The meter and the circuit breaker shall be in separate compartments or shall be partitioned by a non-conducting material.

620.3 On three phase applications, number 14 gauge or thicker wire must be used (for strength) from the seventh jaw to the ground terminal. Each socket shall have a lever bypass rated to the size of the service.

620.4 The individual circuit breakers must be serviceable with the meters in place.

620.5 The meter sockets shall be equipped with a fifth terminal. When single phase service is provided from a 208/120 volt three phase four wire source, the load must be balanced among all three phases.

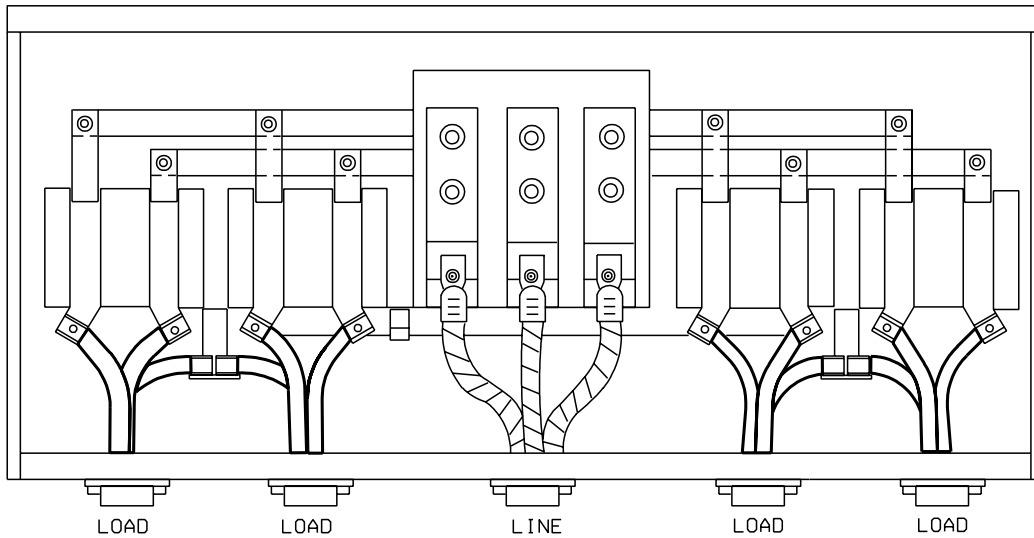
620.6 When two or more meters are located on the same building or structure, whether the meters are grouped or not, the Customer shall mark each meter base or ganged socket clearly identifying the service that is connected to the meter. The marking shall be legible and permanent and placed inside and outside the meter enclosure. The inside marking must be somewhere other than on the cover. The meter's corresponding Customer load panel shall be marked in a similar manner.

620.7 Where Company owned conductors terminate in the Customer owned meter stack, the switch or landing area shall have a single 3/8 inch stud for each terminal connector with at least 1 inch minimum clear length above the tang. The studs shall be equipped with captive Belleville washers and nuts (9/16 inch wrench size).

620.8 The meter sockets and all compartments, wireways and switches on the line side of meters shall have provisions for sealing using a twist off lock or barrel lock.

620.9 A clear space (see definition "[Clear Space](#)") shall be maintained.

640 GANGED METER TROUGH, SINGLE PHASE, 3-WIRE 240/120, 200 AMP MAX/PHASE



<u>SERVICE SIZE</u> <u>AMPERES</u>	<u>NUMBER OF</u> <u>POSITIONS</u>	<u>COMPANY STOCK NUMBER</u>
100	2	65.7300
100	3	65.7315
100	4	65.7325
100	5	65.7329
100	6	65.7330
150/200	2	65.7305
150/200	3	65.7320
150/200	4	65.7328
150/200	6	65.7335

640.1 Cable where entering and exiting the meter base shall have watertight connectors that do not require other additional sealing material. Connectors must resist the insertion of foreign objects.

640.2 The Company must be contacted before using these meter bases in contaminated areas.

640.3 See [Section 700](#) for approved conductor sizes and Sections [710/720](#) for meter base sizes.

640.4 See [Section 730](#) for the approved entry and exit knockouts on Company meter bases. No holes shall be cut without securing Company approval. The existence of a knockout does not necessarily mean it can be used.

640.5 When two or more meters are located on the same building or structure, whether the meters are grouped or not, the Customer shall mark each meter base or ganged socket clearly identifying the service that is connected to the meter. The marking shall be legible and permanent and placed inside and outside the meter enclosure. The inside marking must be somewhere other than on the cover. The meter's corresponding Customer load panel shall be marked in a similar manner.

640.6 A clear space (see definition "[Clear Space](#)") shall be maintained.

PROTECT UNDERGROUND UTILITIES!
CALL 48 HOURS BEFORE DIGGING!

Miss Utility in Virginia

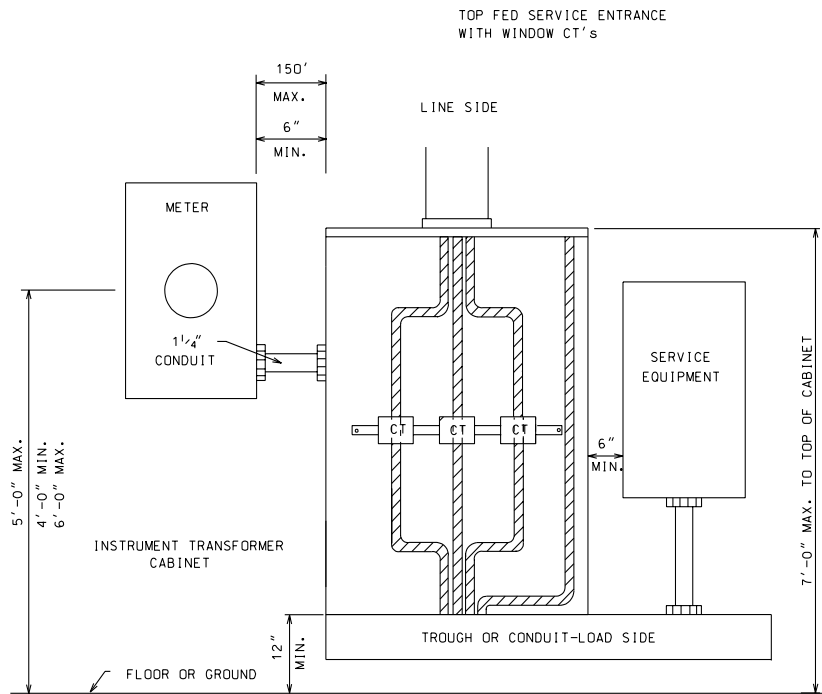
811

North Carolina One Call Center

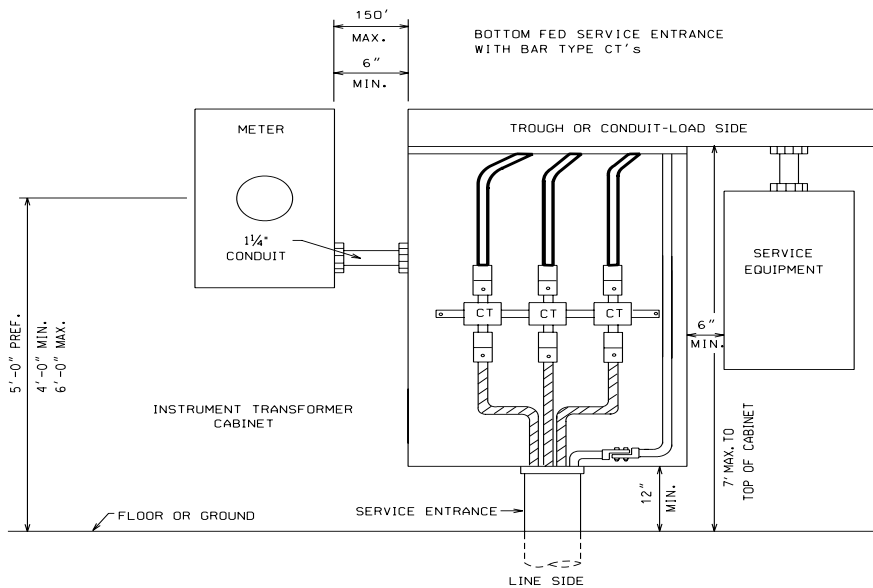
811

650 CURRENT TRANSFORMER (CT) INSTALLATION (ILLUSTRATIONS)

Notes on following pages. Drawings are illustrations of just two examples. Variations exist depending on project.



NOTE: USE WATERTIGHT CONNECTORS



NOTE: USE WATERTIGHT CONNECTORS

650 CURRENT TRANSFORMER (CT) INSTALLATION

650.1 Requests for secondary voltages considered non-standard voltages (see Section 120) must have prior approval from the Company's Planning or Design Engineering departments, as well as approval by the Company's Metering department.

650.2 The Customer must secure, through the local Company office, detailed information and approval from the Company's Metering department before being issued any Current Transformer (CT) equipment or proceeding with any Current Transformer (CT) work. This pertains to new and existing installations.

650.3 The Current Transformer (CT) cabinet furnished by the Company is provided solely for the purpose of housing the Company's metering auxiliaries and shall not be used as a location for Customer owned equipment. The Company will accept up to eight conductors per phase, with a maximum size of 750 kcmil aluminum, in an Current Transformer (CT) cabinet. When more than eight conductors per phase are used, the Customer provides and installs at their expense, a suitable Company approved compartment or cubicle for the Company's Current Transformers (CT)s. A maximum of eight conductors may be connected directly to a bar type Current Transformer (CT).

650.4 The Customer shall leave ample line and load conductor for the Company to train, terminate and connect to the bar CT terminals

650.5 Customer disconnects are not allowed on the line side conductor feeding the Current Transformer (CT) compartment, unless required by the authority having jurisdiction.

650.6 Meter trim, meter enclosure, Current Transformer (CT) cabinet and current transformers (CT)s are supplied by the Company and installed by the Customer. Meter wiring is installed by the Company.

650.7 The Customer shall install a minimum 1-1/4 inch metering conduit. This conduit may be PVC minimum schedule 40 or greater as required by code and is to be anchored securely. Excessive runs and turns may require pull boxes. The maximum conduit distance is 150 feet, and can have no more than 2 - 90 degree bends or a total of 180 degrees in bends.

650.8 The Customer neutral and Company neutral are to be tied together but are not to be bonded to the cabinet bonding stud. This neutral connection must be isolated from the meter enclosure.

650.9 Meter(s) may be installed on either side of the Current Transformer (CT) cabinet. When more than one set of meters are to be provided, the service entrance conductors must be installed in a suitable trough ahead of the Current Transformer (CT) cabinet. The taps made to each set of meters and/or current transformers (CT)s must be made in the trough.

650.10 In order to facilitate company metering personnel's ability to inspect and verify wiring, no splices shall be allowed in the Current Transformer (CT) cabinet and the cabinet is not intended to be used as a junction box.

650.11 When window type current transformers are used, the customer's service entrance conductor shall be continuous through the Current Transformer (CT) cabinet.

650.12 All load side conductors on bar type current transformers must be in parallel (conductors of like size and type electrically joined at both ends to form a single conductor) from the Current Transformer (CT) cabinet to the customer's disconnecting means. Only one disconnect is allowed on the load side

conductors originating from the CT cabinet. Mechanical lay-in type connectors are not allowed on bar type CT's.

Exception: More than one disconnect may be installed on the load side of the CT cabinet provided these disconnects are all grouped in one location on the same wall in the same room. This arrangement must be approved by the authority having jurisdiction. Parallel conductors between the CT and each disconnect must be of like size, type and length.

Note: The Company allows only one (1) additional set of conductors on the line side and they can only go to one (1) additional metered service (example: a fire pump or a non-emergency service, but not both). The ampacity of this addition may not exceed the ampacity or capability of existing Company equipment. The added conductors may not exceed the size of the largest existing line side conductor. See Section 200.8 or 650.17 regarding service to a fire pump.

650.13 The service neutral conductor must be routed through the Current Transformer (CT) cabinet for metering purposes however the Customer grounding electrode conductor is not permitted in the Current Transformer (CT) cabinet.

650.14 The line and load conductors must enter the Current Transformer (CT) cabinet at the top and bottom, and at opposite ends. Line and load conductors are not to cross in the Current Transformer (CT) cabinet. Only line conductors are permitted in the half of the Current Transformer (CT) cabinet where line conductors enter and only load conductors are permitted in the half of the Current Transformer (CT) cabinet where load conductors enter.

650.15 For loads of 800 amperes or less, consisting of one set of conductors, the load conductors may enter the Current Transformer (CT) cabinet on the side at the extreme top or bottom.

- For single phase residential loads of 800 amperes or less, the load conductors may enter the Current Transformer (CT) cabinet on the back at the extreme top.

650.16 Due to concerns about bonding, equipment, and consistent wiring practices, service entrance (SE) cables and bare concentric neutral cables are not allowed on the load side of either Company or Customer owned Current Transformer (CT) cabinets.

650.17 In accordance with NEC Articles 695 and 230.82 and when approved by the local inspection authority, the Company will allow electric service to a fire pump ahead of the Customer's service disconnecting means via a separate metered service, the load side of a CT metered service, or from the line side of a CT metered service to an additional separate metered service.

650.18 The Current Transformer (CT) installation may be made on a board similar to that shown for pole mounting of ganged meter bases. When the installation is outside, outdoor equipment will be provided. Outdoor installations require that the Customer provide the holes in the Current Transformer (CT) cabinet for the Company's service conduit. Watertight connectors that do not require other additional sealing material shall be used on outdoor installations. Connectors must resist the insertion of foreign objects.

650.19 Where overhead service is provided, or the Customer installs the underground service lateral, window type current transformers will generally be used.

650.20 The white H 1 polarity marks must all face the same direction, preferably the line side.

650.21 Single phase CT rated services installed in conduit or trough serving more than two (2) panels require prior approval by the Company's Metering Department.

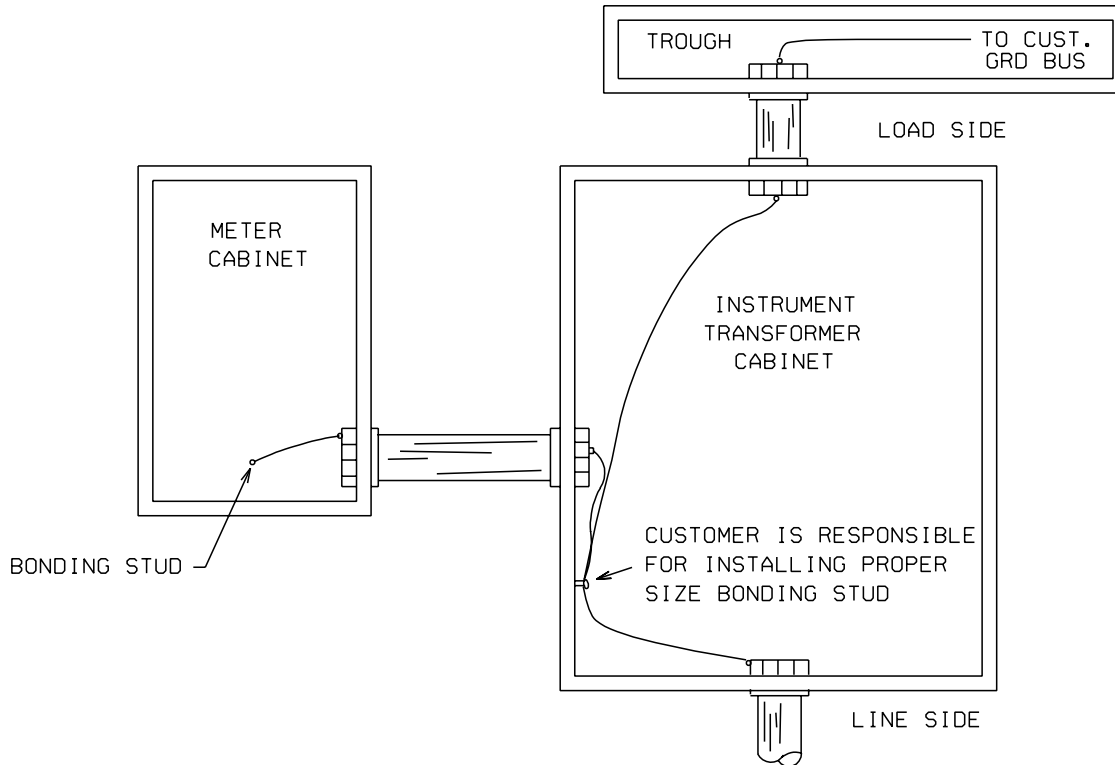
650.22 The maximum size and number of sets of conductors allowed in the Company's Current Transformer (CT) cabinets and the size of the cabinets are:

- Stock No. 65.1100 (30" wide x 36" high x 12" deep) 1 - 500 kcmil or 2 - 4/0
- Stock No. 65.1110 (36" wide x 48" high x 14" deep) 3 - 750 kcmil
- Stock No. 65.1120 (44" wide x 60" high x 14" deep) 8 - 750 kcmil

650.23 Load side conductors must exit the Current Transformer (CT) cabinet in conduit or trough.

650.24 On three phase grounded wye service, a grounded fourth conductor is always required to provide a ground fault return path to the source transformer. The grounded conductor cannot be less than NEC 250.66.

660 CABINET BONDING - METALLIC CONDUIT



660.1 All conduit, bonding bushings and bonding wire are furnished and installed by the Customer.

660.2 For consistent wiring practices, the Customer neutral and the Company neutral are to be tied together but are not to be bonded to the cabinet bonding stud. This neutral connection must be isolated from the meter enclosure.

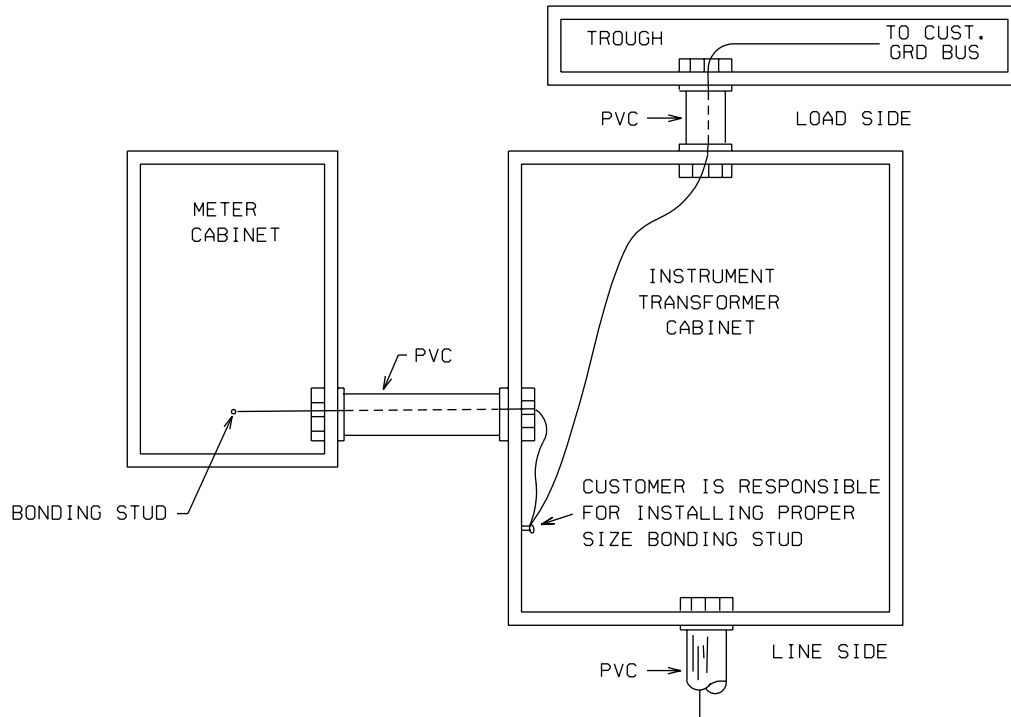
660.3 The conduit nipples shall be metal. All integral or associated couplings, connectors and fittings shall be metallic and approved for the purposed.

660.4 Punched knockouts will require the use of a minimum No. 10 copper equipment bonding jumper. See NEC 250.92(B), 250.102 and Table 250.122.

660.5 Listed pressure connectors/clamps, threaded couplings made up wrenchtight, threadless couplings made up tight, and bonding-type locknuts/bushings are acceptable methods of bonding. See NEC 250.8 and 250.92(B).

660.6 On installations where any portion of the conduit is concealed, the bonding wire shall be attached at each end and run continuously through the conduit.

670 CABINET BONDING - NON-METALLIC AND EMT CONDUIT



670.1 All conduit bushings and bonding wire are furnished and installed by the Customer.

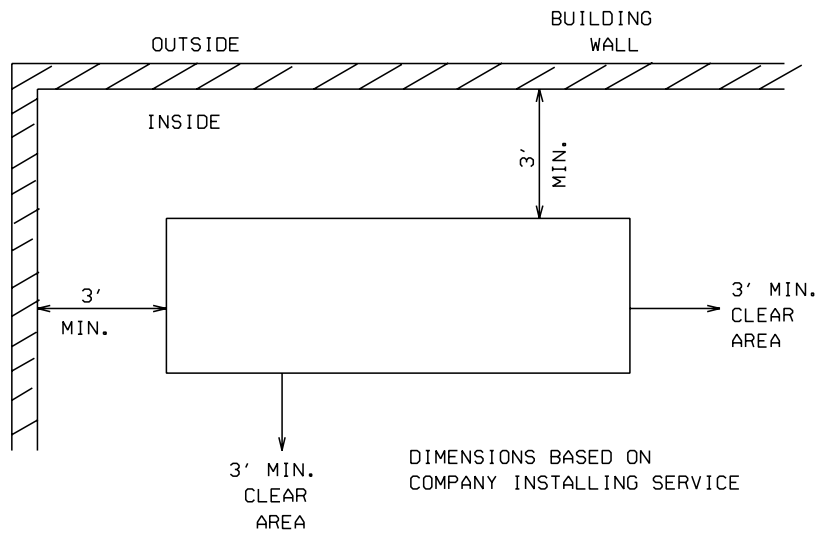
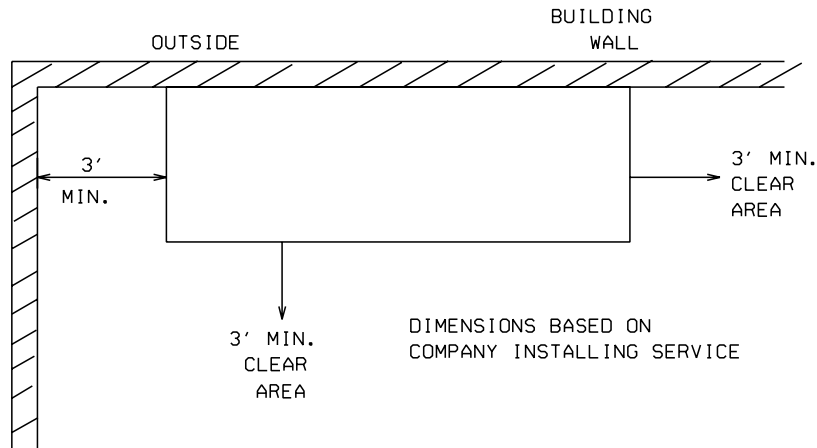
670.2 For consistent wiring practices, the Customer neutral and the Company neutral are to be tied together but are not to be bonded to the cabinet bonding stud. This neutral connection must be isolated from the meter enclosure.

670.3 A minimum No. 10 copper equipment bonding jumper is required from the Meter Cabinet to the Current Transformer (CT) cabinet. See NEC 250.102 and Table 250.122.

670.4 A main bonding jumper is required from the Current Transformer (CT) cabinet bonding stud to the Customer ground bus. This jumper is to be sized according to NEC Table 250.66. See NEC 250.28.

680 CUSTOMER OWNED SWITCHGEAR

Customer Owned Switchgear, 600 Volts and Below, Housing Company Current Transformers (CT)s



Note: See notes on following pages.

680 CUSTOMER OWNED SWITCHGEAR, 600 VOLTS AND BELOW, HOUSING COMPANY CURRENT TRANSFORMERS (CT)S

680.1 The Company's Current Transformers (CT)s may be installed in Company approved Customer owned switchgear. **Prior to purchase, the Customer must submit a drawing of the bus and/or switchgear**, which shows all necessary dimensions for the installation of Current Transformers (CT)s and the service lateral. The drawing and drawing number must refer to the Current Transformer (CT) compartment of the switchgear to be approved. If approved, the type and mounting dimensions of the current transformers (CT)s and bus arrangement for the service cables will be given to the Customer. Approval is given by the Company's Regional Metering department however submittal should be made through the local Company office.

680.2 The Current Transformer (CT) compartment shall be completely isolated from the remainder of the switchboard by barriers and equipped with a hinged door. It, and any panels covering unmetred portions of the switchboard are to be sealable with a twist off lock or a barrel lock. This compartment is to house the Company's current transformers and not for Customer auxiliary. It must be accessible at all times.

680.3 Customer disconnects are not allowed on the line side conductor feeding the Current Transformer (CT) compartment unless required by the authority having jurisdiction.

680.4 The Customer shall provide nonferrous mounting brackets for the current transformers.

680.5 The Customer may provide removable links for current transformers:

- Bars for 400 to 1200 ampere links shall be no more than 2 inches wide.
- Bars for greater than 1200 ampere links shall be no more than 4 inches wide.

680.6 The current transformer bus bars and links shall have the following minimum separations:

- 400 to 1200 ampere services, the center to center spacing shall be 9 inches and the center to the side of the compartment shall be 7 inches.
- Greater than 1200 to 4000 ampere services, the center to center spacing shall be 11 inches and the center to the side of the compartment shall be 10 inches.
- Greater than 4000 to 6000 ampere services, the center to center spacing shall be 13 inches and the center to the side of the compartment shall be 10 inches.

680.7 The wireway area for the Company service conductors, on equipment containing removable links, shall have the following minimum dimensions from the termination point to the bottom of the switchgear.

- 400 through 1200 amperes - 24 inches
- 1600 through 2500 amperes - 30 inches
- 3000 through 6000 amperes - 36 inches

680.8 On equipment where links are not provided, window type current transformers will be used and the service conductors threaded through the windows. The wireway area on this equipment shall have the following minimum dimensions:

- For 400 through 1200 ampere services, the vertical distance from the bottom of the compartment to the current transformer support shall be a minimum of 24 inches and the vertical distance from the current transformer support to the termination point shall be a minimum of 16 inches.
- For 1600 through 2500 ampere services, the vertical distance from the bottom of the compartment to the current transformer support shall be a minimum of 30 inches and the vertical distance from the current transformer support to the termination point shall be a minimum of 18 inches.
- For 3000 through 6000 ampere services, the vertical distance from the bottom of the compartment to the current transformer support shall be a minimum of 36 inches and the vertical distance from the current transformer support to the termination point shall be a minimum of 18 inches.

The lug landing provisions for the switchgear shall be to NEMA standards for two hole terminal connectors and as follows:

<u>Service Amperes</u>	<u>Minimum NEMA Drillings Sets Per Phase</u>
Less than 800	1
801 through 1000	2
1001 through 1500	3
1501 through 2200	4
2201 through 3000	5
Greater than 3000	9

680.9 The neutral must be available in the Current Transformer (CT) compartment. The neutral bus shall be located in the compartment with a number 10-32 tapped hole. Alternately, a pad with a number 10-32 tapped hole shall be located in the compartment connected to the neutral bus by a number 8 conductor.

680.10 Each phase bus must have a number 10-32 tapped hole for voltage measurement on the line side of the current transformers.

680.11 All bus bar sizes are for copper rated at 1000 amps per square inch. If aluminum bars are used, they must have equivalent current carrying capacity.

680.12 As per NEC 408.3(E) and its Exception, the phase arrangement on 3-phase buses shall be A, B, C from front to back, top to bottom, or left to right as viewed from the front of the transformer compartment.

680.13 The Customer shall install a minimum 1-1/4 inch continuous conduit extending from the Current Transformer (CT) compartment to the meter. This conduit may be PVC with a minimum thickness of schedule 40 or greater as required by code. See illustration at end of section. The conduit is to be anchored securely and proper bonding must be done (See Sections 660 and 670).

680.14 Neither the meter nor its enclosure shall be installed on or in the switchgear.

680.15 On existing installations, no additional connections are permitted to unmetered conductors without Company approval.

680.16 Where the Company is installing the service lateral the Customer must furnish and install the conduit for the Company's service cable (see Section 490). This conduit shall be installed so that the Company's service conductors are not blocked by the switchboard, structural members or the load bus. Service conduit openings shall be directly below the line terminals to prevent severe bending of the cable.

680.17 Switchgear requiring access on both sides shall not be installed against a wall.

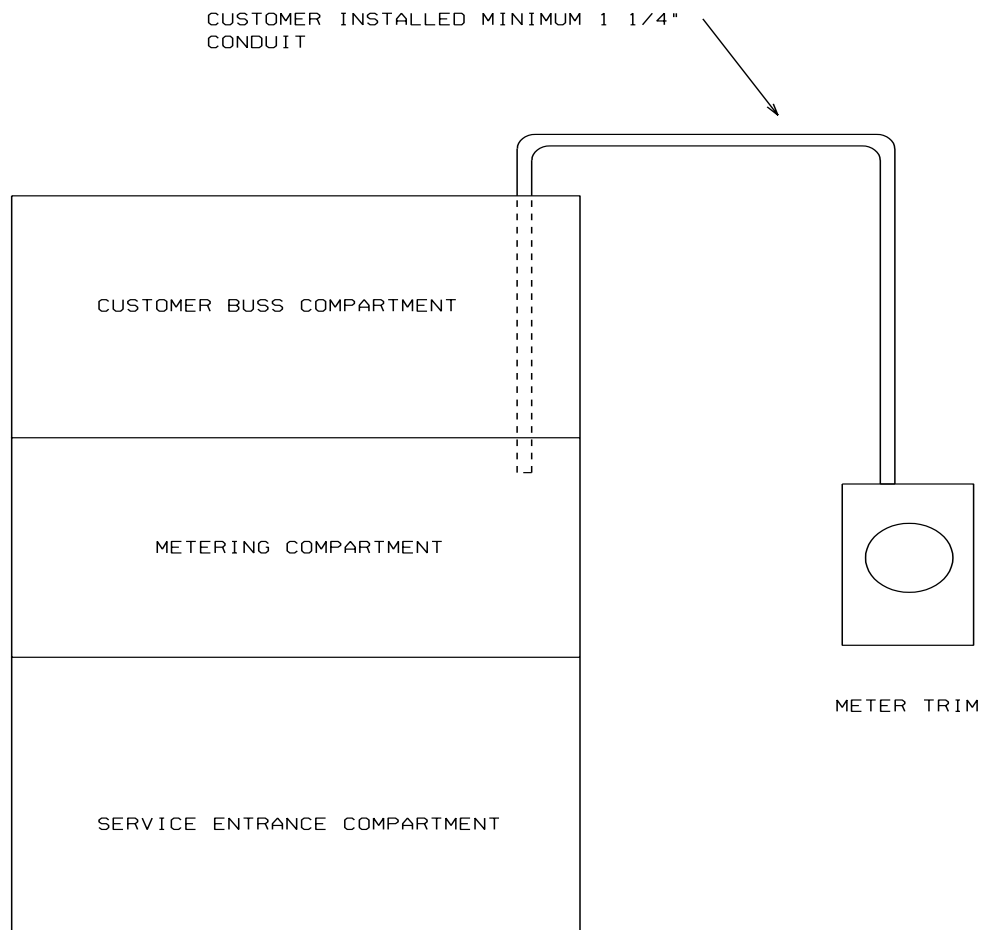
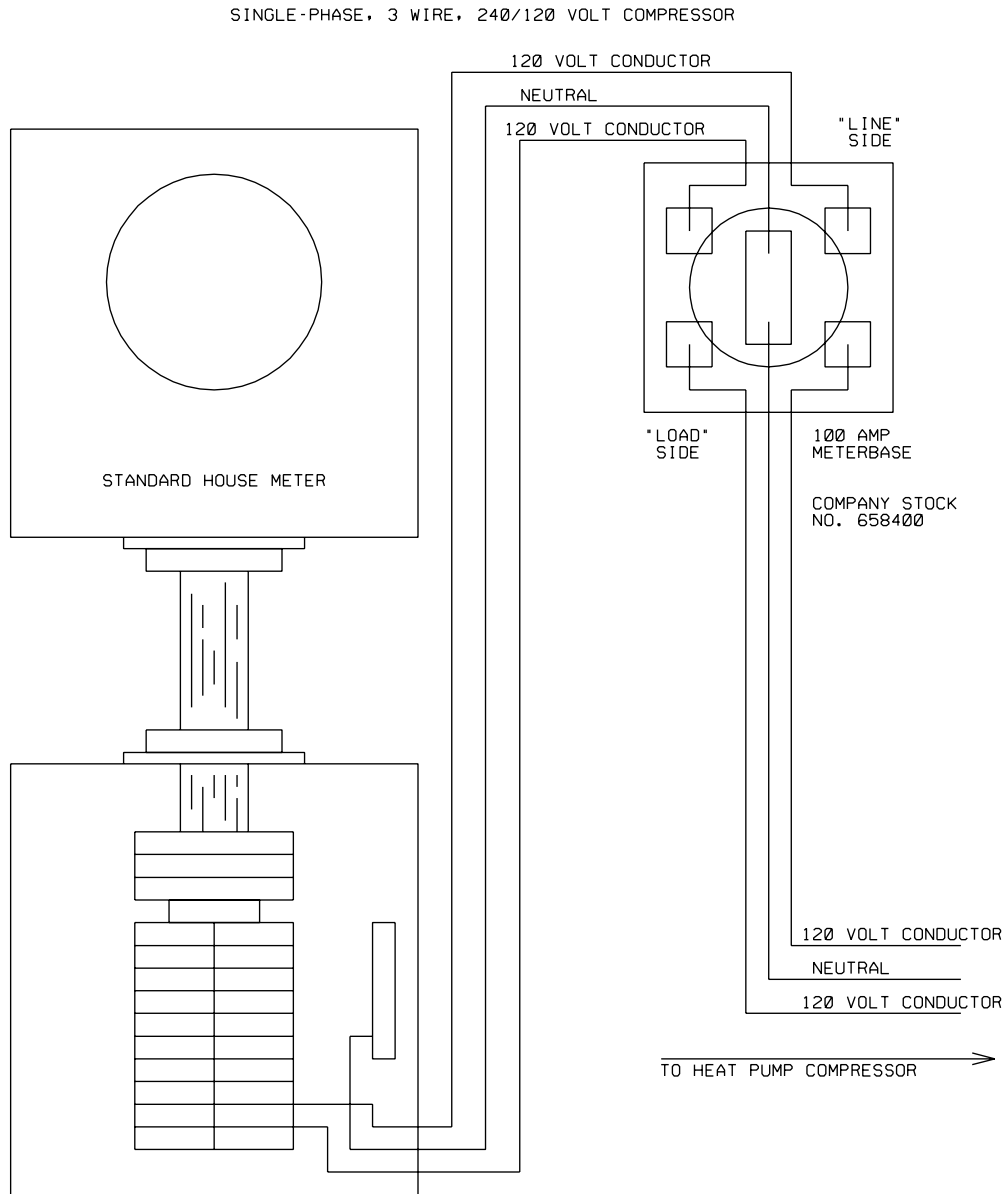


ILLUSTRATION OF 680.13

THE CONDUIT MUST EXTEND INTO THE CT COMPARTMENT

690 NORTH CAROLINA METERED DUAL FUEL SERVICE



690.1 The 100 amp meter base will be furnished by Dominion North Carolina Power and will be installed by the Customer in accordance with local codes at the same level as the existing house meter with approximately eight (8) inches separation.

690.2 Dual fuel meter bases are to be installed electrically in series with the heat pump compressor circuit only.

690.3 Line side conductors from the circuit panel are to be connected to the top terminals of the meter base and the load side conductors to the compressor are to be connected to the bottom terminals.

APPENDIX

700 APPROVED CUSTOMER CONDUCTORS - 600 VOLTS AND BELOW

700.1 Company approved conductors are listed below. Except for metering equipment having lay-in terminals, the Company will furnish and install **compression** connectors for these conductors, and will make the connections on Customer owned conductors attached to Company owned equipment.

700.2 Connectors for the following Company approved conductors typically are readily available.

4 al/cu stranded & compact

2 al/cu stranded & compact

1/0 al/cu stranded, compressed & compact

2/0 al/cu stranded, compressed & compact

4/0 al/cu stranded, compressed & compact

477 kcmil al/cu stranded

500 kcmil al/cu stranded, compressed & compact

750 kcmil al/cu stranded, compressed & compact

700.3 **Advance notice is always required** for the Company to obtain connectors and/or the installation dies for the following Company approved conductors. Eight (8) weeks notice is suggested.

3/0 al/cu stranded, compressed & compact

250 kcmil al/cu stranded, compressed & compact

300 kcmil al/cu stranded, compressed & compact

336.4 kcmil al/cu stranded & compressed

350 kcmil al/cu stranded, compressed & compact

394.5 kcmil al stranded

397.5 kcmil al/cu stranded

400 kcmil al/cu stranded, compressed & compact

600 kcmil al/cu stranded, compressed & compact

700 kcmil al/cu stranded, compressed & compact

795 kcmil al/cu stranded

1000 kcmil al/cu stranded & compact

710 METERING EQUIPMENT DIMENSIONS

710.1 Dimensions shown are typical and may vary due to manufacturer or to the date of manufacture.

710.2 6" of clear space is required on each side. See definition of "[Clear Space](#)" for clear space needs.

710.3 See Section 600 for an example of a multiple meter installation.

Meter Enclosures						
Service Ampere Rating	Stock Numbers (Ringless / Ring Type)	Phasing	Voltage	Height	Width	Depth
60 - 100	65.840000	1	120/240 or 120/208	11"	8"	4"
150 - 200	65.737000	1	120/240 or 120/208	17"	11"	5"
320)	65.741200	1	120/240 or 120/208	34"	15"	6"
400	65.350500	1	120/240 or 120/208	36"	18"	6"
60 - 100 (2 Position)	65.730000	1	120/240 or 120/208	15"	25"	6"
60 - 100 (3 Position)	65.731500	1	120/240 or 120/208	15"	33"	6"
60 - 100 (4 Position)	65.732500	1	120/240 or 120/208	15"	41"	6"
60 - 100 (5 Position)	65.732900	1	120/240 or 120/208	15"	49"	6"
60 - 100 (6 Position)	65.733000	1	120/240 or 120/208	15"	57"	6"
150 - 200 (2 Position)	65.730500 / 65.730600	1	120/240 or 120/208	15"	25"	6"
150 - 200 (3 Position)	65.732000	1	120/240 or 120/208	15"	33"	6"
150 - 200 (4 Position)	65.732800	1	120/240 or 120/208	15"	41"	6"
150 - 200 (6 Position)	65.733500	1	120/240 or 120/208	15"	57"	6"
60 - 200	65.742500	3	120/240 or 120/208	27"	16"	6"
320	42.016148	3	120/208	40"	20"	7"
Current Transformer (CT) Cabinets						
Service Ampere Rating	Stock Numbers	Phasing	Voltage	Height	Width	Depth
60 - 400	65.110000	1 or 3	120 - 480	36"	30"	12"
401 - 1200	65.111000	1 or 3	120 - 480	48"	36"	14"
1201 - 3300	65.112000	1 or 3	120 - 480	60"	44"	14"
Meter Base Trims Used With Current Transformer (CT) Cabinets						
Service Rating	Stock Numbers	Phasing	Voltage	Height	Width	Depth
Single Phase Services	42.014647	1	N/A	20"	12"	5"
Three Phase Services	42.014638	3	N/A	20"	12"	5"

730 METER BASES - APPROVED KNOCKOUT LOCATIONS & CONDUCTOR SETS/SIZES

NOTE: Up to two (2) sets of 4/0 conductors on the load side are allowed through separate knockouts on the 320 amp meter bases. Two knockouts are available in the rear of the 320 amp single phase meter base. Each knockout can accommodate up to one set of 250 Al. No conductor smaller than #4 is allowed in meter bases larger than 100 amps.

STOCK NUMBER OF METER BASE	MAX. AMP SIZE	PHASE	No. OF METERS	TYPE	LINE KNOCKOUT ALLOWED		LOAD KNOCKOUT ALLOWED						
					TOP	BOTTOM	BOTTOM LEFT	BOTTOM CENTER	BOTTOM RIGHT	REAR	LEFT SIDE	RIGHT SIDE	
65.8400	100	1	1	OH	1-1/0	NO	1-#2	1-1/0	1-#2	1-#2	1-#2	1-#2	1-#2
65.7300	100	1	2	OH UG	1-500	1-500	N/A	1-1/0	N/A	N/A	N/A	N/A	N/A
65.7315	100	1	3	OH UG	1-500	1-500	N/A	1-1/0	N/A	N/A	N/A	N/A	N/A
65.7325	100	1	4	OH UG	1-500	1-500	N/A	1-1/0	N/A	N/A	N/A	N/A	N/A
65.7329	100	1	5	OH UG	1-500	1-500	N/A	1-1/0	N/A	N/A	N/A	N/A	N/A
65.7330	100	1	6	OH UG	1-500	1-500	N/A	1-1/0	N/A	N/A	N/A	N/A	N/A
65.7370	200	1	1	OH UG	1-250 —	— 1-250	1- 250 1- 250	1-250 1-250	1- 250 1- 250	1- 250 1- 250	1-250 1-250	1-250 1-250	1-250 1-250
65.7305 / 65.7306*	200	1	2	OH UG	1-750	1-750	N/A	1-250	N/A	N/A	N/A	N/A	N/A
65.7320	200	1	3	OH UG	1-750	1-750	N/A	1-250	N/A	N/A	N/A	N/A	N/A
65.7328	200	1	4	OH UG	1-750	1-750	N/A	1-250	N/A	N/A	N/A	N/A	N/A
65.7335	200	1	6	OH UG	1-750	1-750	N/A	1-250	N/A	N/A	N/A	N/A	N/A

730 METER BASES - APPROVED KNOCKOUT LOCATIONS & CONDUCTOR SETS/SIZES

NOTE: Up to two (2) sets of 4/0 conductors on the load side are allowed through separate knockouts on the 320 amp meter bases. Two knockouts are available in the rear of the 320 amp single phase meter base. Each knockout can accommodate up to one set of 250 Al. No conductor smaller than #4 is allowed in meter bases larger than 100 amps.

STOCK NUMBER OF METER BASE	MAX. AMP SIZE	PHASE	No. OF METERS	TYPE	LINE KNOCKOUT ALLOWED		LOAD KNOCKOUT ALLOWED					
					TOP	BOTTOM	BOTTOM LEFT	BOTTOM CENTER	BOTTOM RIGHT	REAR	LEFT SIDE	RIGHT SIDE
65.7412	320	1	1	OH UG	1-500 —	— 1-500	1-500 NO	1-500 1-500	1-500 1-500	1-250 1-250	1-250 1-250	1-250 1-250
65.7425	200	3	1	OH UG	1-250 —	— 1-250	1-250 NO	1-250 1-250	1-250 1-250	NO NO	1-250 NO	NO NO
42.016148	320	3	1	OH UG	1-500 —	— 1-750	1-750 NO	1-750 1-750	1-750 1-750	1-250 1-250	1-250 NO	1-250 1-250

* Ring Type Meter Base

Note: Stock # for 200 amp 5th terminal is 65.700200

Stock # for 320 amp 5th terminal is 65.701500

WHAT PROTECTS YOU!

A SYSTEM ground primarily protects machines, tools, and insulation against damage.

An EQUIPMENT ground helps protect the equipment operator.

ARE YOU GROUNDED?

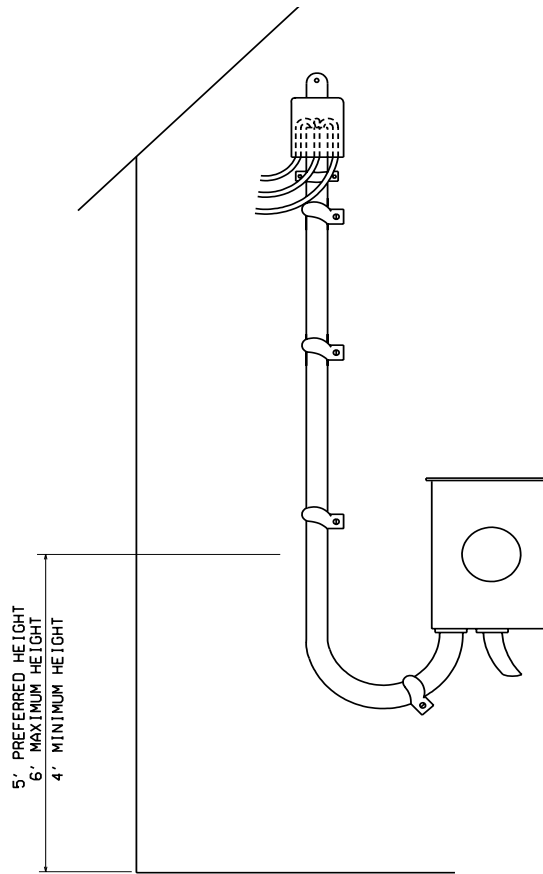
COASTAL OR CONTAMINATED AREAS

800 COASTAL OR CONTAMINATED AREAS

800.1 Contaminated areas are generally coastal areas where salt contamination is present or where other contaminants exist, i.e. dust, fertilizer, corrosives, etc. Each Company office operating near this type of environment has established boundaries for contamination.

800.2 Coastal or contaminated areas require aluminium meter bases. Call the Company for guidance prior to installing the meter base.

800.3 All service entrance conductors shall enter the meter base at the bottom. Refer to the drawing below.



810 METERING EQUIPMENT DIMENSIONS FOR CONTAMINATED AREAS

810.1 Dimensions shown are typical and may vary due to manufacturer or to the date of manufacture.

810.2 6” clear space is required on each side. See definition of “Clear Space” for clear space needs.

Contaminated Area Meter Enclosures						
Service Ampere Rating	Stock Numbers	Phasing	Voltage	Height	Width	Depth
150 - 200	65.737500	1	120/240 or 120/208	15”	11”	5”
320	65.741400	1	120/240 or 120/208	26”	15”	6”
60 - 320	42.016205	3	120/208	30”	20”	7”
Contaminated Area Current Transformer (CT) Cabinets						
Service Ampere Rating	Stock Numbers	Phasing	Voltage	Height	Width	Depth
0 - 400	42.009612	1 or 3	120 - 480	36”	30”	12”
401 - 1200	42.009614	1 or 3	120 - 480	48”	36”	14”
1201 - 3300	42.009617	1 or 3	120 - 480	60”	44”	14”
Contaminated Area Meter Base Trims Used With Above Current Transformer (CT) Cabinets						
Service Rating	Stock Numbers	Phasing	Voltage	Height	Width	Depth
Single Phase Services	65.181000	1	N/A	24”	12”	12”
Three Phase Services	65.181000	3	N/A	24”	12”	12”

Note: Adapter for 65.181000: Single Phase - 93XTT020

Three Phase - 93XTT021

820 CONTAMINATED METER BASES - APPROVED KNOCKOUT LOCATIONS & MAXIMUM CONDUCTOR SIZE

NOTE: Up to two (2) sets of 4/0 conductors are allowed on the 320 amp meter bases. No conductor smaller than #4 is allowed in meter bases larger than 100 amps.

STOCK NUMBER OF METER BASE	MAX. AMP SIZE	PHASE	TYPE	LINE KNOCK-OUT ALLOWED		LOAD KNOCKOUT ALLOWED						
				TOP	BOTTOM	BOTTOM LEFT	BOTTOM CENTER	BOTTOM RIGHT	REAR	LEFT SIDE	RIGHT SIDE	
65.7375	200	1	OH	—	1-250	1-2/0	1-250	1-2/0	1-2/0	1-2/0	1-2/0	1-2/0
			UG	—	1-250	1-2/0	1-250	1-2/0	1-2/0	1-2/0	1-2/0	1-2/0
65.7414	320	1	OH	—	1-500	1-500	1-500	1-500	1-250	1-250	1-250	
			UG	—	1-500	NO	1-500	1-500	1-250	1-250	1-250	
42.016205	320	3	OH	—	1-750	NO	1-750	1-750	1-250	NO	1-250	
			UG	—	1-750	NO	1-750	1-750	1-250	NO	1-250	

Note: Stock # for 200 amp 5th terminal is 65.700200

Stock # for 320 amp 5th terminal is 65.701500