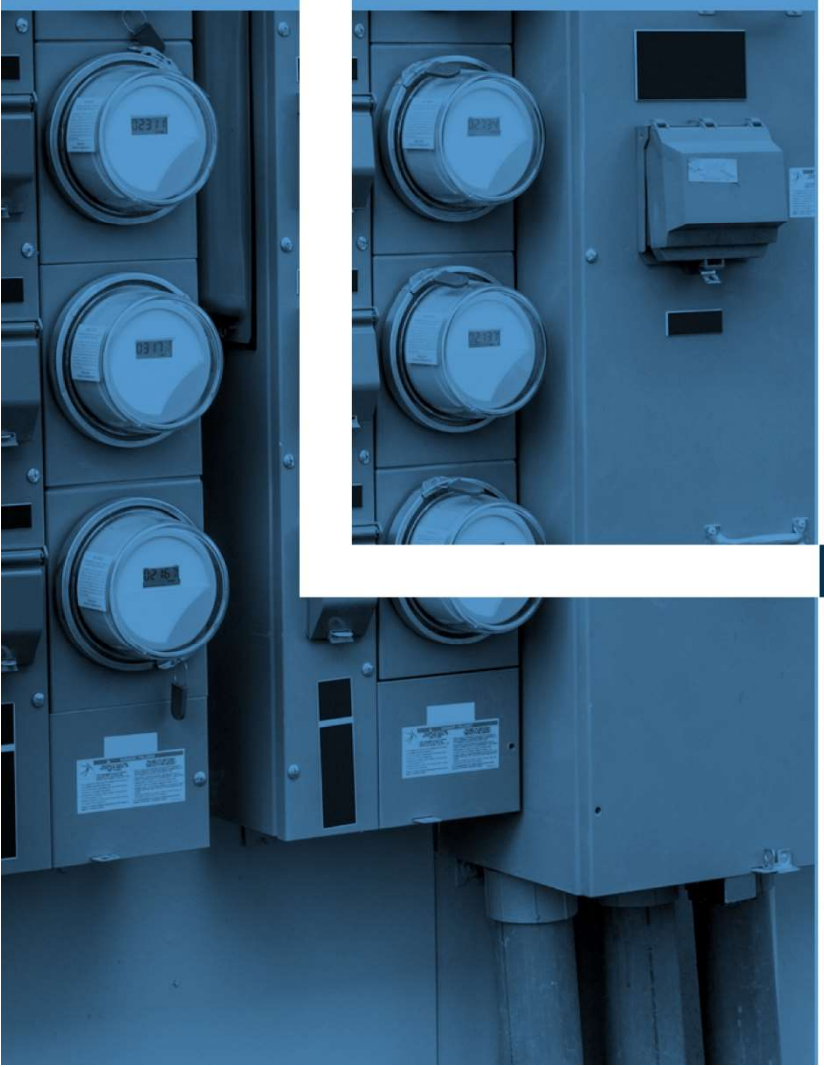


ELECTRIC SERVICE STANDARDS

evergy

Revision: 4/21/2021

Contents

1 – Introduction

Evergy hereinafter will be referred to as the “Company”. Although Evergy is legally the name of the company, the operational rules and regulations of the different territories are still separate. We are continually making progress to combine our processes, and this will take time. Persons making regular use of this standard should maintain contact with the Company due to constant progress in the development of materials and methods. Some procedures outlined herein may be modified. Upon request, information will be supplied concerning changes and revisions.

The Company is dedicated to helping its customers realize optimum value and utility from their electrical service. To accomplish this, the Company must effectively utilize its production and supply capabilities, while ensuring safe, reliable, and consistent service to all its customers. Experience has shown that uniform standards for installation, wiring, and system design are the best way to accomplish our common goals. These Standards and requirements are not intended to be restrictive or burdensome, but to assist in expediting service connections and establishing appropriate customer classifications for service and billing. It is, therefore, required that customers’ wiring and installations intended for connection to the Company’s system comply with these Standards, the National Electrical Code, and any other codes or regulations in effect in the area served.

This is designed to assist customers, architects, engineers, contractors, electricians, and inspectors in planning electric service installations. It is not intended to ensure adequacy and safety of the customer’s own wiring and equipment or for safety and reliability to serve when customer load substantially increases subsequent to service origination. Such responsibility remains with the customer. The Company does not inspect the customer’s wiring for compliance with requirements of electrical codes or regulations established by public bodies. This is the prerogative of municipal and other governmental inspection authorities.

The Company should be contacted about each installation as early as possible to provide time for necessary job checking, scheduling, proper coordination, and design. Service connections made after normal business hours will be charged appropriately.

Where new electrical installations, additions, or alterations are contemplated, inquiry should be made in advance of design or purchase of equipment relative to current, voltage, location of point of delivery, and any necessary extension of the electric distribution system.

The customer is responsible for locating the service entrance equipment and meter socket at a place as designated by the Electric Service Standards. Failure to do so may result in unnecessary costs to the customer for service relocations and possible delay in providing service.

The impression generally prevails that compliance with the National Electrical Code and state, county, or city ordinances or statutes guarantees to the customer a wiring installation complete and adequate for the full use of electric service now and in the future. Unfortunately, this is not always the case, inasmuch as the Code, ordinances, and statutes are designed to provide only the minimum requirements considered necessary for safety. The Code itself states, “This Code contains provisions considered necessary for safety. Compliance therewith and proper maintenance will result in an installation essentially free from hazard but not necessarily efficient, convenient, or adequate for good service or future expansion of electrical use.”

1.A – Key Contacts

Evergy Kansas Metro, Evergy Missouri Metro, Evergy Missouri West Contacts

Customer care - 1-888-471-5275 or 816-471-5275

General Offices, Downtown Kansas City - (816) 556-2200

For emergencies, power out or lines down, call toll-free – 1-888-544-4852 (1-888-LIGHT-KC)

Evergy Kansas Central Contacts

Residential 1-800-383-1183

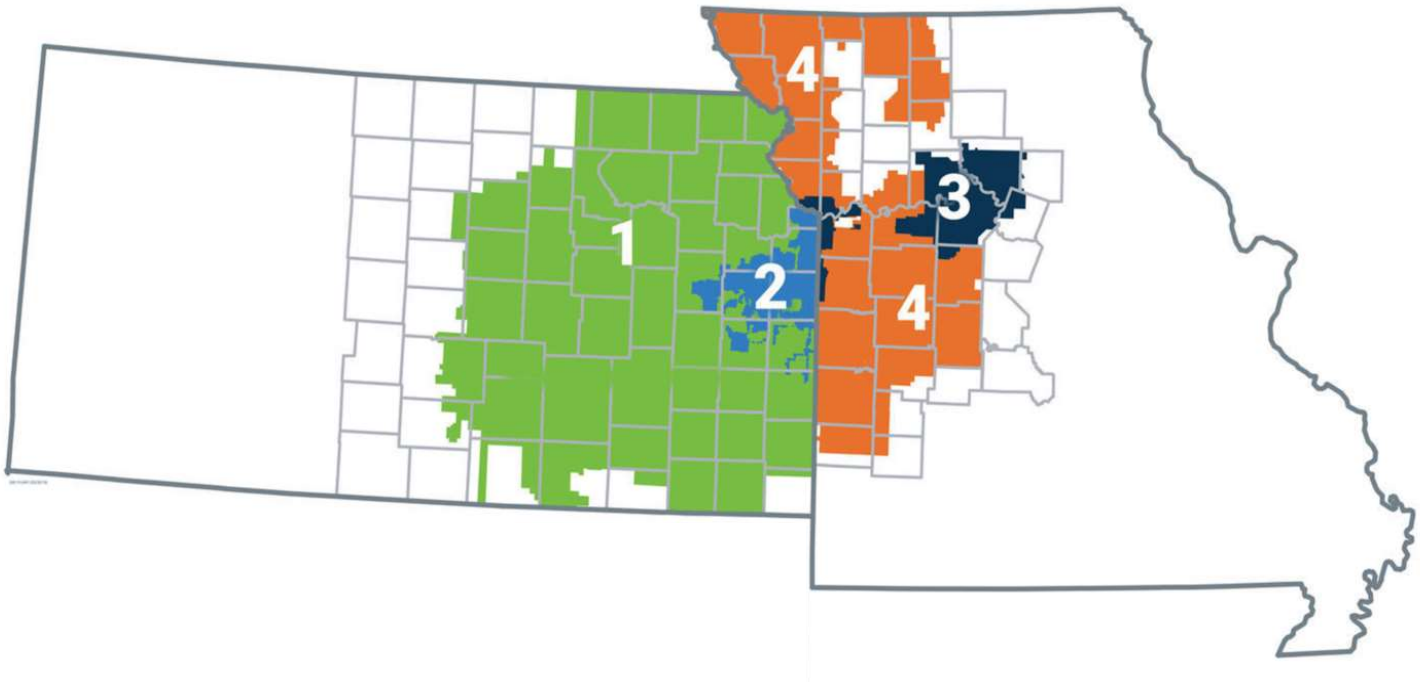
Business 1-800-401-5666

Utility One Call

Missouri – 1-800-344-7483 (1-800-DIG-RITE)

Kansas One-Call – 811 or 1-800-344-7233 (1-800-DIG-SAFE)

1.B – Service Territory



Evergy name
1. EVERGY KANSAS CENTRAL
2. EVERGY KANSAS METRO
3. EVERGY MISSOURI METRO
4. EVERGY MISSOURI WEST

1.C – Definitions

Alterations – Any act of changing an existing electrical service.

Application for Service – A customer applying for electric service shall, if requested by the Company, furnish sufficient information on the size and characteristics of the load and the location of the premises to be served and such additional information as to enable the Company to designate the class or classes of electric service it will supply to the customer and the conditions under which they will be supplied. A separate application shall be made for each class of electric service to a customer at each premises of the customer.

AWG – American Wire Gauge

Cogeneration – Using one energy source to produce two separate forms of energy. It is also known as combined heat and power (CHP). In a correctly designed application, one of these forms of energy may be considered "free", since it is a by-product of the production of the primary energy form.

Commercial Development – Any development of buildings or facilities that are not considered residential class of service.

Communications Company – Cable TV, telephone, or similar communications business.

Company – Collective term for Evergy Missouri Metro, Evergy Missouri West, Evergy Kansas Metro, and Evergy Kansas Central. If not applicable to all territories in this document, the individual, applicable names will be used.

Company Representative – Shall be a person designated by the local operations manager.

Commission(s) – The Missouri Public Service Commission for business in the state of Missouri and the Kansas Corporation Commission for business in the state of Kansas.

Conduit – A U.L. approved pipe for electrical conductors to provide protection from damage. Conduit may be galvanized rigid steel or schedule 40 (or schedule 80) gray PVC, depending on its usage, in accordance with codes and standards.

Corner Ground – Multiphase three wire (delta) system in which one of the phases is intentionally grounded as described in NEC 250.26.

C.T. – Current transformers are used in conjunction with metering equipment. They are designed to permit measurement of currents beyond the range of a self-contained meter.

Customer – Any person applying for, receiving, using, or agreeing to take a class of electric service supplied by the Company under one rate schedule at a single point of delivery and for use within the premise either (a) occupied by such persons, or (b) as may, with the consent of the Company, be designated in the service application or by other means acceptable to the Company.

Customer's Installation – All wiring, appliances and apparatuses of every kind and nature on the customer's premises on the customer's side of the point of delivery (except the Company's meter installation) used or useful by the customer in connection with the receipt and utilization of electric service supplied by the Company. Normally, a residential customer's wiring installation is terminated on the load side of the Company's meter.

Easement – An incorporated right, liberty, privilege, or use of another entity's property, distinct from ownership, such as a right-of-way.

EKC – Evergy Kansas Central

EKM – Evergy Kansas Metro

Electric Service – The availability of electric power and energy supplied by the Company at a point of delivery within the Company's service territory on or near the customer's premises, at approximately the standard voltage and frequency for a class of service made available by the Company in that area, which source is adequate to meet the customer's requirements as stated or implied in the customer's service agreement, regardless of whether or not the customer makes use of such electric service.

EMM – Evergy Missouri Metro

EMW – Evergy Missouri West

High-Rise Multi-family - A multi-occupant residential apartment, loft or condominium building having four or more levels and usually an elevator, with a single point of service to multi-metered, ganged locations.

Low-Rise Multi Family - A multi-occupant residential apartment building composed of three levels or less, with a single point of service to multi-metered, ganged locations.

Meter Socket – A metal cabinet which contains a socket for inserting a meter in order to measure consumption of electrical energy (also referred to as a meter box, meter can, or meter enclosure).

Meter Pole – Pressure treated wood pole with meter. See section 10.10 for meter pole specifications

Meter Riser – The service entrance conduit that extends up out of the meter socket to the weatherhead and contains the service entrance conductor.

Mobile Home – A large trailer, fitted with parts for connection to utilities that can be installed on a relatively permanent site and that is used as a residence, also called a manufactured home.

NEC – National Electric Code

NEMA – National Electrical Manufactures Association

NESC – National Electrical Safety Code

Net Metering – Using a "single meter" to measure the consumption and generation of electricity by a small generation facility; such as a house with wind or solar photovoltaic generation. The "net" energy produced or consumed is purchased from or sold to the utility provider, respectively.

Parallel Generation – Operating an electric generator device, such as an engine driven generator, solar photovoltaic cells or wind turbine in "parallel" with, or connected to, an electric utility's distribution system.

Permanent Foundation – Subgrade foundation compromised of perimeter footings and loadbearing walls extending below the frost line or constructed as per local building codes.

Permanent Identification – A label or placard, minimum of ¾ inches in height, that shall be permanently affixed to the equipment and shall not be hand written. A label shall be a 30-year label and shall be of sufficient durability to withstand the environment involved.

Point of Delivery - The point at which the Company's conductors and/or equipment (other than the Company's meter installation) make electrical connection with the Customer's Installation, unless otherwise specified in the Customer's service agreement.

Proctor – A test control specification devised to evaluate compaction of cohesive soils. In this standard the maximum density for cohesive compacted materials shall be determined in accordance with ASTM D698. ASTM D698 shall apply to compaction of disturbed soil under pads for equipment, backfill of trenches for underground electric lines and any other similar application.

Pull Rope –pull rope (E.G. nylon, polypropylene, etc.) with breaking strength of at least 350 lbs.

Provisions – Electric service will be supplied to the customer under the provisions of the customer's service agreement which shall also include the provisions of (a) the Company's applicable rate schedule, rules and regulations in effect and on file with the Commission, (b) the Commission's applicable rules and general orders, and (c) any special contract with the customer.

Rural Customer – A customer taking electric service (except electric service used in connection with a commercial enterprise not related to residential or farming purposes) who uses such electric service for residential purposes in a district which has not been platted and recorded, or in connection with the carrying on of farming or other agricultural pursuits. The Company reserves the right in all instances to designate whether a customer is or is not a rural customer.

Service Drop – A service drop is the overhead line running to the customer's building or pole.

Threaded Hub – A coupling between the meter socket and riser to create a rain tight connection. A piercing screw coupling is not acceptable.

U.L. – Underwriters Laboratory

1.D – Policy

This standard is issued by the Company as a guide for obtaining electric service and to set forth the services available, conditions for service, and the standards for materials and construction in the customer's entrance installation. It is not the purpose of the Company in this standard to specify or limit the design of the customer's wiring or equipment. The standards for materials and construction are necessary to safeguard all customers and to secure maximum use of the Company's service and are the minimum under which the Company will supply service. Nothing contained in the Standards shall require the Company to install area feeder circuits underground or require existing facilities to be put underground.

These standards are supplementary to and are not intended to conflict with the General Rules and Regulations on file with the public utility regulatory commissions of Missouri and Kansas, the National Electrical Code, the National Electrical Safety Code, and such state, county, and

municipal laws, ordinances, and statutes as may be in force within the cities, towns, or areas in which the Company furnishes electric service. In the absence of appropriate regulation, industry standards, e.g., those of UL may be invoked.

These standards supersede all previous publications of Electric Service Standards issued by the Company prior to this date and are subject to change without notice.

The Company has representatives whose services are available to customers largely without charge. They endeavor to keep abreast of developments in safe and adequate practices in wiring, the latest developments in lighting and power application, and other data, which pertain to the most efficient use of electricity. The Company will consider requests for further information or to investigate difficulties arising from utilization. Customers should call upon the Company any time they believe the Company's knowledge and experience may be of assistance.

The customer shall give duly authorized agents and employees of the Company, when properly identified, full and free access to the premises of the customer at all hours. This access shall be for the purpose of installing, reading, inspecting, adjusting, repairing, maintaining, replacing, or removing any of the Company's facilities on the premises of the customer or for any other purpose incidental to the electric service supplied by the Company. Where meters are located beyond locked doors or padlocked gates, the customer's locking device shall have a keyway for dual key capacity that accommodates a Company master key (Keys may vary by jurisdiction)

Each Company employee whose duty requires access to premises of the customer is furnished with a card bearing photo identification. The customer should deny admittance to anyone claiming to be an employee who refuses to display a properly approved identification card. Any uncertainty of identity or purpose or any unreasonable number of calls should be reported to the Company immediately.

Employees of the Company may neither demand nor accept any compensation from a customer for service rendered in the line of duty. However, certain employees do collect money from customers for settlement of accounts due the Company, of which the customer is already aware.

The customer is responsible for all increased costs for rock excavation during the installation of electrical facilities. This includes rock encountered when setting poles or other equipment or excavation of trench. Where practical the customer will be given the option of paying the increased costs or providing the excavation of rock at no cost to the Company.

In addition to non-refundable charges referred to in this standard that may be required for the Company to make extensions of its facilities to provide electric service, the Company may require potentially refundable charges for construction for amounts not covered by non-refundable charges in accordance with the Company's Rules and Regulations.

The breaking of seals, tampering with meters, wires, or any other property of the Company is prohibited and may be punishable by law. Tampering fees may apply.

The customer always shall protect the property of the Company on the premises of the customer and shall permit no persons other than the employees and agents of the Company and other persons authorized by law to inspect, work on, open, or otherwise handle the wires, meters, or other facilities of the Company. In case of loss or damage to the property of the

Company due to carelessness, neglect, or misuse by the customer, customer's family, agents, servants, or employees, the customer shall, at the request of the Company, pay to the Company the cost of any necessary repairs or replacements of such facilities or the value of such facility.

The customer shall not use any other electric power or lighting service, including stand-by generators and renewable generation, in conjunction with the Company's service without the written consent of the Company. Such written consent may be granted at the sole discretion of the Company if the customer has critical operation where stand-by service is desirable. Apply for written consent through the appropriate customer service center.

Devices or attachments shall not be connected to the Company's facilities in such a manner as to permit the use of unmetered energy except with prior written consent of the Company.

Electric service supplied by the Company is for the exclusive use of the customer on the premises to which such service is delivered. The Company will not supply electric service to a retail customer for resale by the customer. Redistribution, by a retail customer, requires the expressed consent of the appropriate State Commission.

The rates for electric service rendered by the Company are on file with the Missouri Public Service Commission and the Kansas Corporation Commission. The rate schedules of the Company currently in effect and on file with the commissions will be made available by the Company for inspection by any customer during working hours at any of the Company's regular business offices. Upon request, representatives of the Company will explain rate schedules and assist in selection of the applicable rate best suited to the customer's requirements. The customer will be responsible for the final selection of the applicable rate schedule.

Attachments of any kind or nature shall not be permitted on Company poles without previous execution of the Company's License for Pole Attachments. Care must be taken when making installations of equipment near Company lines so that under all conditions the installation will not be under or fall across Company lines nor contact them in any way and thereby create a hazard to life and property.

The customer will provide or procure for the Company such rights-of-way as are satisfactory to the Company across property owned or otherwise controlled by the customer, for the construction, operation, and maintenance by the Company of facilities necessary or incidental to the supply of electric service. Certain installations will require the customer to sign an indemnification agreement.

For line extensions and service to a customer, the customer is responsible for tree trimming, per Company standards, on customer's own property. The customer shall permit the Company to trim or remove any trees that may interfere with the safe operation of the Company's facilities. Routine trimming around power lines is vital to maintaining reliable service, and is performed at no cost to the customer. To avoid future problems and inconvenience, it is strongly recommended that customers avoid planting tall-growing species under or near overhead lines and underground facilities.

Electric service is subject to occasional rapid voltage variations that may adversely affect the operations of sensitive controls on a customer's electric equipment. Devices available for use with most electric equipment will minimize the effect of such disturbances. The Company will assist the customer in identifying the source of the disturbance. The Company will not assume

liability for damage to the customer's equipment nor for disturbances in any customer processes arising from such variations.

When lightning arresters are installed by the customer, they must either be connected to customer's facilities on the load side of main entrance fuses or circuit breakers, or be of the ground lead disconnecting type.

The Company shall not be considered in default of its service agreement and shall not otherwise be liable on account of any failure by the Company to perform any obligation if prevented from fulfilling such obligation by reason of delivery delays, breakdowns of, or damage to facilities, acts of God or public enemy, strikes or other labor disturbances, actions of civil, military, or governmental authority, or any other cause beyond the control of the Company.

The street address of the premises requiring new service shall be plainly displayed. Contractors and others installing electric work should place their names and addresses on each installation.

In apartments or other buildings where a number of meters are installed, each service switch and meter enclosure or socket must be plainly marked by the building owner, the customer or their agent with a permanent identification of the apartment or space that it serves. General services and electric heat service must be similarly distinguished. The building owner, the customer, or their agent holds the responsibility of seeing that wiring in such locations connects to the proper meter or meters. Mismarked service switches, breakers or meter enclosures must be corrected by the building owner, the customer or their agent. The Company will not render service until all switches and meter enclosures are properly marked.

Power factor corrective equipment, flashing signs, high frequency equipment, spark discharge devices, radio transmitters, X-ray machines, experimental devices, motors, welding machines, or any other equipment which could cause abnormal voltage fluctuations shall be designed and operated so as not to adversely disturb the Company's electrical system. Customers must inform the Company of the characteristics of any such equipment prior to placing it in service. If a customer uses its building wiring as a carrier system for communication or signaling purposes, the customer shall install suitable electrical filtering equipment to keep the Company's distribution facilities free from carrier frequency currents.

The Company does not design, plan, install or maintain the customer's wiring or electric equipment. The responsibility for installation and maintenance of service equipment depends on the service area.

The customer is responsible for installing and maintaining the service point of attachment, weatherhead, conduits, meter riser, slip joint, meter socket, and all equipment past the point of delivery. This is best accomplished by a licensed electrician and may require a local inspection.

When extending electric service to customers, the route and location of Company facilities, including lines and services shall be determined by Company pursuant to the extension policy contained in the Company's Rules and Regulations on file with the Commission. The location and route of facilities installed shall be in conformance with good practice for the overall electric distribution system taking all factors into consideration including safety, present and estimated future capacity requirements, and overall installation costs.

INSPECTION AND CERTIFICATION OF CUSTOMER'S WIRING

New wiring and alterations in wiring in many municipalities are required by law to be approved by the local electrical inspector's office prior to being connected by the Company. The Company shall not render service until the Company receives approval(s) from the appropriate authority having jurisdiction. If there is no governing body, the Company reserves the right to not connect service. The Company may need to inspect the meter base and riser outside the customer's building. The Company will schedule a service crew to connect the new service following receipt of approval from the customer's jurisdiction.

The responsibility of the customer regarding use of electric service supplied by the Company is not set aside and the Company shall in no way be liable on account of any inspections or recommendations by the Company which are made as a courtesy to the customer or as a protection to the electric service supplied by the Company to its other customers. The Company reserves the right but assumes no duty to inspect the customer's service installation. Company personnel inspect only the customer's service equipment and conductors to assure compliance with these Electric Service Standards.

1.F – Provisions

The Company will make only one service connection for each type of electric service to a customer's premises except where required by (a) regulations or codes promulgated by municipal or other governmental authorities or (b) the customer's load being of such size and character and so located as to make it advisable, in the opinion of the Company, to install more than one service connection.
In serving any customer, the Company will, at its sole option and subject to its General Rules and Regulations on file with the appropriate regulatory bodies:

(A) Determine the point and character of electric service from which it will supply a customer;
(B) Approve the location of the customer's entrance and the design of the electric system to this location from the Company's supply point; and
(C) Develop a detailed plan to modify the Company's facilities to suit the customer's desires, if practicable. The customer may be required to make a capital contribution for any excess cost.
(D) If revisions in plans (see (c) above) are required after they have been presented to the customer, the time required to revise those plans will be charged to the customer.

Contractors and others installing electrical work shall balance the load on three-wire and four-wire systems. Balancing the load is advantageous to the customer as well as to the Company because it provides the customer better voltage regulation and maximum use of service entrance equipment.

The customer shall furnish and install Underwriters' Laboratories, Inc., listed disconnecting devices in accordance with the provisions of the National Electrical Code and local ordinances. In addition to those requirements, the Company requires a fused disconnect or breaker within 15 feet of the meter (local jurisdiction may be more stringent). A fused disconnect or breaker shall be installed at the meter location if there will be more than 15 feet of conductor between the load side of the meter base and the main panel or fuse box.

A fuse or circuit breaker shall not be installed in the neutral or the ground conductor of the service entrance. Exposed conductive material enclosing electric wiring and equipment is to be

grounded by the customer on customer's premises in accordance with the provisions of the National Electrical Code.

2 – Metering

2.A –General Metering Information

Meter socket supplied by:

> The Customer will supply Company approved meter socket (400 amps and smaller). Visit the Company website, or contact Customer Service for list of approved meter sockets.

For location of meters, see section 2.B. Call Customer Service to have a representative verify the correct meter location. Service shall not be connected if the meter is installed in an unapproved location.

Customer-furnished meter sockets shall have a nationally recognized testing laboratory seal. Meter socket shall be grounded per NEC requirements. See section 3 for approved grounding methods.

Disconnects ahead (i.e. on the source side) of the meter shall not be allowed except with written permission by The Company or as allowed by the NEC when there are more than 6 service disconnects grouped at one location. NEC 230.40 exception no 2. (exception - 480V metering is required to have a weatherproof, load-breaking, non-fused disconnect switch on the line side).

For 100 ampere installations the customer is allowed to feed the load with 100 ampere service wire, but the meter socket shall be a designated 200 ampere unit.

Metered and unmetered conductors shall not be installed in the same conduits or raceways. Unmetered service conductors shall not be permitted to exit metering equipment. Metering socket shall not be used as a raceway for feeder circuits. NEC 230.7

Exceptions

Exceptions may be made only with the written permission of the Company, which shall be based on the joint inspection and approval by representatives of customer service and meter departments.

2.B – Location of Meters

Meters shall be located on the exterior side of the building nearest to the Company's facilities. Meters shall not be located in areas subject to vibration, jarring, gasses, dust, fluids, etc., that may affect the accuracy of the meter.

Meters shall be installed at a height not less than 42" or more than 60". Where a driveway or walk exists, meters shall be 78" above the level on which Company personnel will stand.

A 2" x 6" support shall be nailed between studs at the meter location to provide a strong structural support into which meter socket mounting screws shall be driven.

Please contact the local company service center to verify the correct meter location. Service may be denied if the meter is installed at an unapproved location.

Platforms and Decks - Meters shall not be located above or below platforms without permission from the company. Platforms shall be built to all applicable codes, must be accessible by stairs, and must be a permanent structure. A ladder is unacceptable in place of stairs. Platforms must

have suitable railings, while still meeting all clearances set forth in section 2.C and drawing 10.8. Structures built near meters sockets should be reviewed by the company to prevent possible relocation of meter sockets. Designs of structures and platforms may need to be submitted for approval. Design considerations must include continuous and unobstructed way of egress travel with dimensions no less than 7 ft high and 4 ft wide.

Provisions for a Company-locking device shall be included when access is restricted.

2.C – Electric Meter Clearance

Meter socket shall have a minimum of 30 inches of working space from the center of the socket to at least one side. Meter enclosure shall be located a minimum of 3 ft. of swing doors, windows and other openings. The meter enclosure shall have a working space with 4 ft. min clearance in front of the meter enclosure. Gas meters, air conditioning units and other equipment shall not be located within the clear working space surrounding the meter. Pane windows that are specifically designed without any kind of a mechanism or means to open them may be treated like part of a wall for the purposes of the 3 ft clear working space, however no equipment shall be installed upon, nor conduit run directly on the outside of the window. Meter enclosure shall be located in an area so that any building overhang is not less than 7 ft above final ground level. Gas meter shall be located a minimum of 3 ft away from electrical equipment.

See 10.8 for drawing.

2.D – Multiple Meters

Except as allowed by law, regulation, or order, in multiple-occupancy buildings, each of the premises shall be individually metered, as well as the common use facilities used in common if applicable. Each service switch and meter enclosure is to be plainly marked by the building owner, the customer, or agent with a Permanent Identification of the apartment or space, which it serves. General services and electric heat services shall also have permanent identification. In addition to the permanent identification, the inside back of each meter enclosure near the meter socket clips shall have the correct apartment number inscribed in permanent marker or paint.

The Company may check multi-metered units to verify accurate identification. The building owner, the Customer, or their agent must be on hand at this time. Mismarked service switches, breakers, or meter enclosures must be corrected by the building owner, the Customer, or their agent. It is the responsibility of the building owner, the Customer, or their agent to see that the breaker panel connects to the proper meter or meters. The Company will not render service until all switches, meter enclosures, and entrance panels are properly marked. Each individual apartment unit doorway shall be identified to allow the Company to test for correct connections.

2.E – C.T. Rated Metering

The installation requires a C.T. rated meter for services larger than:

1. 400 amps single phase
2. 400 amps three phase

The Company will provide the meter socket and the C.T.'s. The customer is responsible for the purchase and installation of the C.T. cabinet. Cabinets must be approved by the Company. Additional time must be allowed for approval process.

The Company has a list of approved cabinet models ranging up to 4000 amps. (see section 10.9 for a list of approved C.T. cabinets).

The C.T. cabinet must be installed on an outside wall or a meter stand shall be installed. The C.T. cabinet must be readily accessible to Company personnel only. The C.T. cabinet shall not be used as splice boxes or raceways.

All C.T. meter installations require a 5/8” x 8’ copper clad steel ground rod as near as possible to the location of the meter socket. The upper end of the rod shall be flush with or just below grade. The meter socket shall be grounded to the rod using a solid bare copper wire at least #6 AWG.

The customer shall furnish and install 1-1/4” metallic conduit, with sufficient pull boxes, from the C.T. cabinet to the meter socket. The conduit will bond the C.T. cabinet to the meter socket. This control cable shall not exceed 65’ in total length.

C.T.’s shall be installed with polarity identification mark toward The Company source and shall be separate from other metering or control circuits.

2.F – Transformer Metering (EKC only)

For metering requiring C.T.’s, padmount transformer metering is an option. The preferred meter location is that the metering will be installed on the building adjacent to the transformer when the building is within 50 ft. of the transformer (note section 2.E- This control cable shall not exceed 65’ in total length). Otherwise, it will be necessary for the customer to install a meter stand freestanding near the transformer pad. There shall be 4 feet of clear space in front and 3 feet on the sides of the stand. The stand should be clear from the opening of the doors of the transformer. Underground conduit for the control cable and metering shall be non-metallic, a minimum of 1-1/4”, and utilize sweeps. A pull string shall be supplied for pulling. Contact local service center when determining the location.

2.G – Commercial Metering

The type and kind of service that is used in industrial and commercial application is quite diverse and requires special attention.

The customer shall provide and install a Company approved meter socket for all self-contained metering installation. See the Electric Service Guide for Commercial Construction, visit the Company website, or call the Customer Contact Center for a list of approved meter sockets.

The meter enclosure and/or service entrance should be located on the outside of the building and on the side of the building facing The Company's line/padmount transformer.

Unmetered cables shall not be run through buildings without approval from the Company.

Devices, fittings, clamps or equipment shall not be permitted to be installed or attached to any metering cabinet or meter fitting without written permission from the meter department unless it is for the installation of the metering cabinet or meter fitting in accordance with The Company's standards.

For services that require a C.T. rated meter, The Company will provide the meter socket and C.T.s. Metering transformers (C.T.s) will be installed by the customer in the customer's meter transformer enclosure or as an integral part of the:

a. Bus and bus extension
b. Switchgear
c. Metering enclosure (C.T. cabinet)

2.G.1 – Self-Contained Metering

Self-contained metering applies to services less than or equal to:

1. 400 amps Single Phase
2. 400 amps Three Phase

The customer shall provide and install a Company approved meter socket.

For multi-occupancy buildings, the customer may purchase and install prefabricated package-type multiple metering and service entrance equipment. The customer shall obtain approval by The Company of such installation and equipment prior to purchase of equipment.

For 480V installations, the customer shall furnish and install an additional weatherproof, load-breaking, non-fused disconnect switch on the line side of each meter socket for use by Company personnel only. The disconnect shall have a hasp for a Company lock. This applies to overhead, underground and temporary service.

2.G.2 – C.T. Rated Metering

For services larger than listed in 2.G.1, Refer to section 2.E

2.G.3 – Three-Phase Switchgear Installed Metering

All installations where switchgear is used (with a customer requirement of 1200 amps or more) require special consideration. The Company representatives shall work closely with the customer to develop a mutually acceptable plan. The Company should be contacted as early as possible to coordinate the work. The Company shall provide the meter socket, metering C.T.'s and P.T.'s, and the terminal blocks. Customer switchgear shall conform to The Company Specification S8, available from Customer Service.

2.H – Inside Metering requirements (Residential High-rises)

2.H.1 – Information

- For buildings having 4 floors or greater, meters will be consolidated in one common meter room. If that is not possible, meter locations will be on every 3rd floor.
- Meters will be located in rooms on outer portion of the buildings i.e., room should have an exterior wall.
- The Company is to have access 24/7 to the building and meter locations (door locks will be keyed to a Company master key).
- Meter communication antennas and associated equipment may be required – Customer is to bear all costs associated with this installation. An initial payment maybe collected before any Company work can begin. This charge is not subject to any revenue justification. Once the antenna installation has been completed, if there is a difference the customer will be reimbursed or invoiced for the difference.
- Antenna installation is required for both residential & commercial meters.

- Proposed meter room location(s) should be shown in riser diagram submitted with service application.

2.H.2 – Standard Antenna Installation

(CUSTOMER IS RESPONSIBLE FOR INSTALLATION OF ITEMS BELOW)

- One 2-inch conduit connecting each of the meter rooms to a common meter room. A pull rope is required in all conduits.
- From the common meter room, a single 2-inch conduit connecting to an exterior point outside the building. The conduit shall be less than 80 feet in length. The conduit shall be no greater than 35 feet and no less than 15 feet above ground level at the exterior point outside the building.
- A flat surface (wood, cement, brick, etc.) on the exterior of the building is required where 8-inch brackets can be mounted for each antenna.
- A weather-head on the exterior conduit is required.
- All conduit runs are allowed no more than 3 bends total. Two vertical bends are 90º, one horizontal bend up to 90º.
- Space shall be provided to install up to 2 – 18 inch antennas on the interior and/or up to 3 – 18 inch antennas on the exterior of the building.
- 2 feet wide by 3 feet tall of interior wall space for the installation of the RF transceivers.
- One 120 volt power source in each room required for equipment installation. Standard 120 volt / 15 amp receptacle or junction box shall be acceptable.

NOTES:

For buildings having fewer than 4 floors, the Company and the customer will agree upon the meter locations. Other than the possible deviation on meter locations, all other items listed above will be standard for inside metering.

2.I – Storm Meter Socket

The Kansas City Metro Electric Utilities Committee, made up of Evergy, Board of Public Utilities (BPU), and Independence Power & Light (IPL) have been working on establishing a metro wide meter socket that can be used by customers, contractors, electricians, manufacturers and suppliers in a storm (e.g., ice, wind, tornado) situation. Each utility, for its service area, will determine the time frame or duration of the emergency meter allocation. This information will be distributed to the manufacturers.

This setup does not override any of the electric utilities present standards and those standards are to be used at all times, with the exception of a meter socket shortage in a storm situation where there are no other options for repair to damaged overhead services.

The storm meter socket requirements are as follows:

- Overhead, residential service ONLY.
- Must be a 200 amp self-contained meter installation.
- Hub opening (top) to accept ANSI small hub.
- The meter may be either 4 or 5 lugs.
- A locking mechanism (front cover knockout, locking ring, etc.). The tab or tongue through the meter can lid is not an acceptable locking device.
- The meter can size shall be between 11” X 14” X 4-1/8” and 14” X 15-1/2” X 5”. The electric utility standards for that area will be used first

- A horn bypass is acceptable.
- Lugs – hex head is preferred. No star configuration.
- Obtained from an approved meter socket vendor.

Below is a list of manufacturers with approved meter sockets:

- Milbank
- Durham
- Landis & Gyr
- Durham – those that manufacture for Square D, Cutler Hammer (Eaton), and Midwest Electric Products.

NOTE: USE THE APPROPRIATE/REQUIRED UTILITY METER SOCKET FIRST.

3 – Grounding

3.A – Information

All conduit, cable sheath, meter enclosures, and equipment shall be grounded in accordance with the requirements of the NEC 250.

Insulated ground wire color is green and insulated neutral wire color is white.

On all Single-phase 120/240 volt three-wire services, the neutral conductor will be grounded at the transformer station by the Company. The company requires the customer to provide and install a driven ground rod and connect it to the meter socket. The customer will need to provide an additional ground(s), per NEC. See section 10.2 for Grounding Diagrams.

Neutral identification, service neutrals shall be easily identifiable with tape in accordance with NEC 200.6(E).

3.B – C.T. Meter Installations

All C.T. meter installations require a 5/8" x 8' copper clad steel ground rod as near as possible to the location of the meter socket. The upper end of the rod shall be flush with or just below grade. The meter socket shall be grounded to the rod using a solid bare copper wire at least #6 AWG. Use 1 ¼" galvanized rigid metallic conduit for bonding the meter socket to the C.T. cabinet.

Enclosures shall be bonded per the NEC.

4 – Residential Services

4.A - Information

The Company provides single-phase, 60 Hertz, 120/240 volts, three-wire service to residential customers. Three-phase service availability is subject to the discretion of The Company and may not qualify for a residential rate.

It is the customer's responsibility to install service equipment in accordance with the provisions of the National Electrical Code as a minimum. Installations shall be in accordance with the NEC, NESC, Local Code, and The Company.

Architects, engineers, contractors, builders, etc., are requested to consult in advance with The Company to obtain any special specifications and directions for the proposed service entrance. This may avoid delay and expense if carefully observed and followed.

In planning installations, the customer should bear in mind that the point of attachment of the Company's service drop on a building must be of sufficient height to give a minimum clearance above the ground at any point in the span as required by the National Electrical Safety Code and any local requirements. See section 10.3 for details

The Company in extending the service drop from its last pole and will not attach to anything else other than the building to be served or to a suitable support, as approved in advanced by The Company.

The National Electrical Code shall be followed for clearances of windows, doors, porches, fire escapes or similar locations.

The address of premises where new service is required shall be plainly displayed on the house or a stand that is visible from the street in numbers and letters no smaller than 6" with a weather-resistant method.

Point of Delivery is on the line side of the Company's meter where the Company's service conductors terminate. See section 10.1 for details.

Available fault currents will vary with each installation. Inquiry for a particular location should be directed to the appropriate service center.

Table 1 – Typical Available Fault Current for Residential Service Equipment

Single Phase Transformer Size	200 or 400 Amp services at 120/240V
37.5 KVA and smaller	10,000 Amperes symmetrical
50 KVA and 75 KVA	20,000 Amperes symmetrical
100 KVA and larger	50,000 Amperes symmetrical

4.B – Overhead

4.B.1 – Information

The Company shall install and maintain a service cable that shall run from the pole directly to a service mast or attachment on the house as applicable. The Company does not assume any responsibility for damages to person or property resulting from the use of a service mast.

Maximum service span length

Size of Service Entrance	Type of Cable	Service Length*
100 Amp 200 Amp	1/0 Triplex	90 ft. or Less
400 Amp	Triplex Cable Sized to Load	70 ft. or Less

*Contact the Company for longer span lengths.

Customer's Point of Attachment at House

Section 10.4 shows methods of attaching service bale directly to the house provided that proper clearances can be maintained between the service cable and surface grade. Customer shall install service attachment items as shown in 10.4 adequate to support at least 900 pounds of cable tension.

Maximum overhead service supplied is 400 amps.

4.B.2 – Specific Services

Single Family service

The Company provides single-phase, 60 Hertz, 120/240 volts, three-wire service to residential customers.

Mobile Home service

The Company provides single-phase, 60 Hertz, 120/240 volts, three-wire service to residential customers.

The customer shall install and maintain an adequate meter pole adjacent to each mobile home at a point approved by the Company. The pole must be of a height and strength adequate to support the Company's service drop. On this pole the customer shall install a main disconnect with protective devices, install a ground and grounding electrode, install service entrance conductors from the disconnect to a meter socket, furnish and install a Company approved meter socket, and furnish and install a conduit riser, and weather head, and service conductors with 3ft. of conductor extending from the weather head to provide for connection to an adequate drip loop. The Company will furnish and install the service drop and make the connections of the customer's service conductors to the service drop and install the meter.

Low-Rise Multi-Family Service

The Company provides single-phase, 60 Hertz, 120/240 volts, three-wire service to residential customers.

Residential buildings requiring three-phase service for loads such as elevators or large central cooling units will be served as a commercial customer and in accordance with Service Standards for that type of customer. The Company will determine the service characteristics of the living units and there may be a charge for certain services.

Rural/Farm Service

For rural, farm applications, a meter pole may be installed when multiple customer owned services are needed, 200 amps or smaller. When the meter is located on a Company meter pole, the Company will provide and install the wire to the service mast from its last pole.

If the service is not on a Company owned pole, the customer must provide, install, and maintain the pole. The Company can provide and install the pole for the service mast, and may require

payment from the customer. The customer is responsible for maintaining the pole. The customer shall provide and maintain all other equipment.

4.C – Underground

4.C.1 - Information

When requested by the customer, The Company will install underground service cables in areas currently served with overhead distribution. A customer may request underground supply. This type of service shall be provided in accordance with The Company's “general terms and conditions for electric service.” The customer may be billed for the additional cost of underground service that is above the cost of a comparable overhead service.

The customer shall install, own and maintain continuous conduits from the meter socket or pedestal to a designated location. The Company will work with the customer to provide conduit specifications. See Section 6: Underground Construction for more information.

Maximum service length is 135 feet. For services over 135 feet, contact the Company.

4.C.2 – Specific Services

Single Family service

The Company provides single-phase, 60 Hertz, 120/240 volts, three-wire service to residential customers.

Mobile Home service

The Company provides single-phase, 60 Hertz, 120/240 volts, three-wire service to residential customers.

The Company will furnish and install the service conductors to each meter position, the meter socket connections, and install the meter. The customer shall pay the Company for the difference in estimated cost of overhead and underground distribution and service. The Company will furnish and install the service conductors to each meter socket.

The mounting pedestal stake cannot be made of wood; a galvanized steel post or unistrut needs to be installed.

The customer shall install the meter socket or meter pedestal and main disconnect and install the necessary service entrance conductors and conduit from the main disconnect to the mobile home. It is recommended that 200 amps capacity be provided, due to the frequent use of electric heating in mobile homes. It is required to install a 200 amp rated meter socket for each unit.

The customer may purchase and install a pre-fabricated pedestal that includes the meter socket, main disconnect with protective devices, and (optional) receptacles as a combination unit in lieu of using separate components. If such a pedestal is used, the Company must approve it in advance.

Low-Rise Multi-Family Service

The Company provides single-phase, 60 Hertz, 120/240 volts, three-wire service to residential customers.

Residential buildings requiring three-phase service for loads such as elevators or large central cooling units will be served as a commercial customer and in accordance with Service

Standards for that type of customer. The Company will determine the service characteristics of the living units and there may be a charge for certain services.

Residential Subdivision Design- EKM, EMM, EMW

The Company considers 5 or more lots to be Residential Subdivision. The Company prefers "front of lot" electric distribution system be specified to minimize future operating costs, service restoration times, and possible damage to customer landscaping. Electric distribution facilities will be installed on the building lots along or near the front line. For situations in which a local ordinance requires "rear of lot" construction the Company will comply with the ordinance when presented in writing to the Company from the local jurisdiction.

The development requesting service must be platted, with the plats filed and graded to within 6" of final grade before the Company will begin construction. In the event that minimum clearance to conduit is no longer met, costs to rectify must be covered by the developer. Electronic copies of a filed plat must be furnished to the Company. The developer shall provide, at no cost to the Company, all rights-of-way and easements required for the Company's primary, secondary, and service cables, pad-mount transformers, secondary pedestals, and any other facilities that may be required to serve the area. The developer shall provide all-weather hard-surface access for Company vehicles to all electrical facilities prior to sodding, landscaping, and fencing. Lots and pad locations must be pinned or staked and the easement cleared of all trees, stumps and obstructions before the Company will begin construction. Excessive spoils (rocks, tree stumps, etc.) resulting from the installation of the Company facilities is the responsibility of the developer to remove.

The developer shall provide and install all conduits for the Company's primary, secondary, service, and all future cables. The Company will provide all transformer pads, sectionalizers, ground rods, and service pedestals for installation by the developer.

The developer shall install conduits and sweeps in the general direction of future homes. Conduits shall be installed with the ends capped and a pull rope shall be installed in the conduit.

The developer shall reimburse the Company for the cost of relocating, replacing, repairing, re-leveling, and/or raising transformers, secondary pedestals or other Company equipment that are damaged, destroyed, or buried during the construction process. For a period of 12 months following the Company energizing facilities, the developer will be held responsible for the structural integrity of all facilities installed by the developer or the developer's contractor.

The developer and/or property owner shall be responsible for planning, planting, and maintaining any landscaping required by any local ordinances around Company facilities.

The developer and others installing electrical work are to place their names and addresses on each installation. In a new development or other area where permanent street signs have not yet been installed, the developer or contractor shall identify streets to facilitate the location of addresses.

Residential Subdivision Design- EKC

Cable-In-Duct (CID) can be installed in lieu of separate conduit for specific applications. The Company will provide the developer with a list of contractors that have been pre-qualified to install the CID.

Contact local designer for additional information.

5 – Commercial Services

5.A – Information

The voltages the Company offers for commercial/industrial customers are as follows:

- Single-phase, three-wire, 120/240 V, 120/208 V, or 240/480 V, 60Hz
- Three-phase, four-wire, 120/208 V or 277/480 V, 60Hz
- Under certain conditions, primary service at three-phase, four-wire, 7200/12,470 wye or 7620/13,200 wye volts, 60Hz, and three-phase, three-wire, 240 V or 480 V (overhead transformation only), 60Hz

Upon the customer's request, the Company will specify the type of electric service available at any given location for use by the customer.

Installations shall be in accordance with the NEC, NESC, Local Code, and the Company.

Per Article 230 of the National Electric Code (NEC) a building or other structure served shall be supplied by only one service unless permitted in 230.2(A) through (D). In section (A) it provides provisions for additional services to be permitted to supply the following

- Fire Pumps
- Emergency Systems
- Legally Required Standby Systems
- Optional Standby Systems
- Parallel Power Production Systems

If the service size exceeds what the Company can provide with a single service, additional services may be supplied as allowed by NEC Article 230.2(C).

To avoid expensive alterations later, the service entrance should be adequate for future growth as well as for present requirements. It is recommended that 200 amps capacity be provided. It is required to install a 200 amp rated meter socket for each unit. It is the customer's responsibility to install service equipment in accordance with the provisions of the NEC and this manual.

Available fault currents will vary with each installation. Contact the Company for an inquiry for a particular location.

Contractors and others installing electrical work shall balance the load on three-wire and four-wire systems. Balancing the load is advantageous to the customer as well as to the Company because it provides the customer better voltage regulation and maximum use of service entrance equipment.

The address of premises where new service is required shall be plainly displayed facing the road in numbers and letters no smaller than 6" with a weather-resistant method.

Contractors and others installing electrical work shall place permanent identification of the address of the customer on each meter socket. In a new development or other area where permanent street signs have not yet been installed, the developer or contractor shall identify streets to facilitate the location of addresses.

5.B – Overhead

5.B.1 - Information

Maximum overhead service supplied is 800 amps for 120/208 V and 400 amps for 277/480 V.

The Company shall install and maintain a service cable(s) that may run from the pole directly to a service mast or attachment on the building as applicable. Service cable sizes and installation drawing numbers are shown in the table below. The Company does not assume any responsibility for damages to person or property resulting from the use of a service mast.

Customer will supply 2 dead-end eyes for parallel services if so utilized. These shall be a minimum of 12 inches apart.

For parallel services, each conductor has its own dead-end capable of 900 pounds maximum design tension.

Maximum Length of Overhead Service

Conductor (Triplex, or Quadraplex)	Maximum Service Span* in Feet (Utility pole to Point of Attachment)
#2	90
1/0	90
4/0	70
336	60
500	50
*Service tension is limited to 900 lbs under ½" ice loading conditions at 32°	

5.B.2 – Specific Services

Single Occupant Commercial/Industrial Facility

The Company will furnish and install the service drop. The customer's service conductor shall run from the meter socket through the service conduit riser with at least 36" of conductor extending from the weather head to provide for connection to the service drop with an adequate drip loop. The Company will make the connections to the customer's service conductors and install the meter. The service conduit mast and service hook shall be capable of holding 900 pounds and of sufficient height to provide for proper clearances for the Company's service drop.

Multi-Occupant Commercial/Industrial Facility

The customer shall furnish and install a Company approved meter socket, conduit and conductors from the service entrance and equipment to the meter socket, a conduit riser, weather head, and service conductors to attach to the service bus. The Company will furnish and install the service drop to the building and the service bus. The service conduit riser or service hook shall be of sufficient strength adequate for the span tension and of sufficient height to provide proper clearances for the Company's service drop. The customer's weather head shall be above the service bus and the customer's service conductors shall run from the meter socket through the service conduit riser with at least 36" of conductor extending from the weather head to provide for connection to the service bus with an adequate drip loop. The Company will make the connections of the customer's service conductors to the service bus and install the meter.

For applications where a transformer serves multiple facilities (buildings), the use of a raceway/cable tray requires a main disconnect be placed prior to connection of the raceway/cable tray

5.C – Underground

5.C.1 – Information

A customer may request underground supply from overhead primary. This type of service shall be provided in accordance with the Company's “general terms and conditions for electric service.” The customer shall be billed for the additional cost of underground service that is above the cost of a comparable overhead service.

The customer must coordinate with Company representatives to determine if an existing Company service pole can be used or if a pole needs to be installed. When practical, the pole should be set prior to conduit installation. The customer shall extend conduit to within 7” of the base of the designated pole. The Company will designate the quadrant of the pole for the customer to stub up the conduit. The customer shall provide enough conduit to the top of the pole. The Company will complete the installation of conduit up the service pole.

EKM, EMM, EMW - The customer shall provide a continuous length of service conductors at the service pole with enough length to reach the top of the pole, as specified by the Company to allow connection to the Company’s distribution system.

EKC – The company shall provide the service conductor from the pole to the customer’s metering.

The customer shall supply all three phase transformer pads and 250KVA* single phase pads (*EKM, EMM, EMW does not currently offer 250 KVA single phase transformers). The Company shall supply single phase poly-pads for 167KVA & smaller.

The Company will not take title to, own, or maintain underground commercial or industrial service facilities. At the customer’s request, the Company may agree to install pad-mounted transformers. In certain instances, vault type transformers may be utilized to serve the customer’s load. The Customer may be required to pay the Company the cost difference between underground and overhead installation. The customer shall contact the Company prior to construction and work out the details of meter location and equipment requirements. Fiberglass box pads, supplied by the Company, may be used for single-phase transformer installations where approved by the Company.

The customer’s service conductors are required to be no greater than 500-KCM copper or aluminum, with one exception; up to 750-KCM compact aluminum may be used for three phase applications. Aluminum conductors are required to be AA-8000 series electrical grade aluminum alloy. **WITH NO EXCEPTIONS, THE CABLE MUST HAVE ‘AA-8###’ STAMPED ON THE OUTER JACKET, ### MAY VARY AMONG MANUFACTURERS.** A maximum of 8 sets of conductors may be installed as the standard, up to 12 sets may be allowed with designer approval.

Services from a submersible type transformer requires copper conductor with a maximum 500 KCM cable, for additional requirements please obtain a copy of Specification S5 from the Customer Contact Center. Service cables shall be continuous from the Company’s service point to the Customer’s disconnect, splices in the service cables are not acceptable.

The Company requires service conductors installed by the customer to be in conduit. The minimum depth to the top of the conduit shall be 30”. In solid rock this may be reduced to 12” provided 2” of concrete is poured on top of the conduit. Refer to sections 10.17 and 10.18

The customer shall provide, install, own, and maintain all primary, secondary, and service conduit on the customer’s property required by the Company for the installation of electric facilities for industrial, commercial, and multi-family developments. The customer is responsible for installing the conduit within the easements or right-of-ways designated for use by the Company and in accordance with Company specifications. Underground conduit installed by the customer shall be manufactured according to NEMA standard TC-2 for Electrical Plastic Conduit.

5.C.2 – Specific Services

High-Rise Multi-Family

The Company provides single-phase, 60 Hertz, 120/240 volts, three-wire service or three-phase, 60 Hertz, 120/208V.

The customer shall extend their underground service conductors in conduit to the service pedestal or low voltage compartment of the pad-mounted transformer, if this source is on their property or at their property line. The transformer location shall be immediately adjacent to a paved area and accessible by vehicle for maintenance. The customer shall install and maintain the necessary electrical conduits, without sharp bends or indentations, for the Company’s primary cables in a straight run between the transformer and the customer’s property line. A pull rope shall be provided in the conduit. The Company shall be given an opportunity to inspect these conduits before back filling is done. All runs must be designed in cooperation with the Company. Call to schedule a meeting with the Company to install all conduit bends into energized sources. The customer shall install, according to the Company’s specifications, the concrete pads, concrete pull boxes, concrete bases, and ground rods as required for the transformer(s) and other equipment which is located on the customer’s property or at customer’s property line and is to be used exclusively to serve that customer.

The Company will install the transformer and will connect the service conductors in the service pedestal or transformer. The customer may be required to pay the Company the cost difference between underground and overhead installation.

In a group of adjoining occupancies served by two or more service entrances from common outside service bus conductors, each service entrance shall be separately grounded by the customer.

Single Occupant Commercial/Industrial Facility

The Company must approve the type and size of the equipment in advance. All pulling space provided in the customer’s equipment for termination of the Company’s service conductors shall conform to the size requirements set forth in the National Electrical Code covering pull boxes. In this case, the building owner or customer’s agent will own and maintain the meter sockets and enclosures and the Company will own and maintain the meters.

Multi-Occupant Commercial/Industrial Facility

The customer shall extend their underground service conductors in conduit to the service pedestal or low voltage compartment of the pad-mounted transformer if this source is on their property or at their property line. (EKC will extend conductor to the meter or designated point of

delivery). The transformer location shall be immediately adjacent to a paved area and accessible by vehicle for maintenance. The customer shall install and maintain the necessary electrical conduits, without sharp bends or indentations, for the Company's primary cables in a straight run between the transformer and the customer's property line. A pull rope shall be provided in the conduit. The Company shall be given an opportunity to inspect these conduits before back filling is done. All runs must be designed in cooperation with the Company. Call to schedule a meet with the Company to install all conduit bends into energized sources. The Customer shall install, in accordance with the Company's specifications, the concrete pads, concrete pull boxes, concrete bases, ground rods, and fiberglass box pads as required for the transformer(s) and other equipment which is located on the customer's property or at the property line and is to be used exclusively to serve that customer. The ground rods and fiberglass box pads are supplied by the Company. Fiberglass box pads should be used for single phase transformer installations. The Company will own and install all primary conductors, transformers, and primary switchgear and will make all terminations in the transformer.

If the transformer is not located on the customer's property or at the property line, the customer shall extend underground service lateral conductors to customer's property line at a point designated by the Company, and shall leave an added length of continuous conductors as specified by the Company. The Company will connect of the service lateral conductors to the transformer. The customer may be required to pay the Company the cost difference between underground and overhead installation.

For applications where a transformer serves multiple facilities (buildings), the use of a raceway/cable tray requires a main disconnect be placed prior to connection of the raceway/cable tray.

6 – Underground Construction

6.A – General Conduit Installation

The following specifications shall be followed to insure an acceptable installation:

1. Conduit shall be installed according to the design provided by the Company. Revisions or field changes are not allowed unless prior, documented approval is given by the Company.
2. Customer/Developer must contact utility one-call when trenching or digging. Contact the Company when trenching or digging near Company equipment.
3. Right-of-way and side property lines shall be marked for the Company employee to insure proper installation of conduit and placement of Company equipment, such as transformers, pedestals, and sectionalizers. Cul-de-sacs, curved streets, or rear property installations may require additional staking at the request of the Company employee.
4. Conduit shall be installed within proper utility easements.
5. The Company must inspect and approve the conduit installation, including street crossings, before installing the electrical facilities. Once requested by the customer/developer, the Company will make the inspection. Conduit trenches shall not be backfilled until approved by the Company employee.
6. The developer/customer shall correct conduit that is improperly installed, which includes outside of easements, improper depth, street crossings relative to lot lines, etc.
7. If changes to the conduit system or service equipment locations are required due to replatting or other modifications in the property lines, it is the customer's/developer's responsibility to make these changes before the Company will install any cable or equipment.
8. The developer is required to obtain a properly marked survey showing the utility easement so that the Company can verify that all conduits are within the utility easement. Plats must be recorded and monies paid before the Company will install any cable or equipment in the conduit system.
9. Any relocation of Company facilities after they have been installed will be at the customer's/developer's expense.
10. The Customer/Developer shall provide conduit, connectors, and bends. The Customer/Developer shall install all concrete bases and conduit systems. Transformer pads, sectionalizers, ground rods, and service pedestals will be provided by the Company and shall be installed by the Customer/Developer.
11. PVC conduit joints shall be glued together with PVC cement. Bands, clamps, or other connecting devices are not allowed. Polyethylene conduit joints shall be made with fittings designed for use with polyethylene. Glue and fittings should be designed for use on polyethylene.
12. PVC pipe pre-glued prior to installation and plowed/pulled under tension will NOT be acceptable to the Company.
13. Conduits, including street crossings, shall be installed deep enough to allow a minimum of 41" of cover for primary and secondary conduits when measured from final grade. Service Conduits should be a minimum of 30". Different depths may be required for switchgears, sectionalizers, etc.). In areas of solid rock or obstructions which make these trench depths impractical, the depth may be reduced to 12", provided 2" of red concrete is poured on top of the conduit. Conduit should be installed when grade is within 6" of final grade. See sections 10.17 and 10.18.
14. Conduit at transformers, service pedestals, and sectionalizer locations shall turn up as shown on Company service drawings using pvc 36" radius bends. Long radius 36" elbows shall be used on all horizontal bends, such as around corners or at a change in direction.

15. Open ends of conduit shall be capped without pvc glue or covered with duct tape to prevent debris and wildlife from entering.
16. Conduit shall be of proper size as noted on Company construction drawings.
17. Backfill shall be clean and adequately tamped to prevent future settling.
18. Care should be taken during backfilling not to damage conduit or disturb arrangement of vertical conduit that has been turned up at transformers, pedestals, or sectionalizer locations.
19. A pull rope shall be installed in all conduit runs by the customer. If the customer's pull rope breaks, it is the responsibility of the customer to pull in a new one.
20. If the Company is unable to install cable in conduit due to plugged, broken or otherwise damaged conduit after it has been inspected and backfilled, it is the developer's/customer's responsibility to make repairs.
21. The conduit shall be installed in a straight line if possible. Conduit runs are allowed no more than 3 bends total. Only two vertical 90º bends are allowed. If a horizontal turn is needed, one horizontal bend up to 90º.
22. Red danger tape will be installed 6" – 12" below final grade
23. Multiple conduit installations shall have the conduits separated by no more than 4 inches between conduits.
24. Where customers installed conduit interconnects with the Company's conduit, customer shall not use half sizes (I.E. 2 ½'. 3 ½', Etc.) The conduits shall be free of burrs and have clean bores.
25. Primary, secondary, service conduits shall be NEC approved conduit, such as UL listed rigid schedule 40 gray PVC or electrical grade SDR13.5 black polyethylene with red stripe.
26. Riser conduits shall be gray UL listed rigid PVC schedule 40 or schedule 80.
27. Primary Conduit bends shall have 36" radius sweeps and specified as below.
    A. EKC – NEC approved rigid metal
    B. EKM, EMM, EMW – NEC approved PVC conduit
28. Secondary and service conduit bends shall have 36" radius sweeps and NEC approved PVC conduit.
29. Slip Joints are required for meter risers.
30. <u>Conduit Sizing</u>
    A. <u>Primary Cable Conduit</u>
    Contact the company for the correct design and layout.
    For planning purposes, typical sizes are below.
    Single phase primary installations – 2"
    Three phase primary installations:
    loads less than 4000 kva – 4"
    loads greater than 4000 kva – 6"
    B. <u>Service/Secondary Cable Conduit</u>

Service Entrance Size	Minimum Conduit Requirements			
	3-Wire 1 Phase		4-Wire 3 Phase	
	Qty	Min Size	Qty	Min Size
200A	1	3"	1	3"
400A	1	3"	1	4"
600A	2	3"	2	4"
800A	2	4"	2	4"
1200A	3	4"	3	4"
Sizes Not Listed Above – Contact the Company				

This chart shall not mandate the Company to install service cables to meet the ampacity of the customer installed service entrance. However, the Company shall keep that option available.

CID (Cable-in-Duct) option (EKC only)

CID can be installed in lieu of separate conduit for specific applications. The Company will provide the developer with a list of contractors that have been pre-qualified to install the CID.

Current cable sizes offered are

Type	Location
#2 Aluminum	Primary
4/0 Aluminum	Primary
#6 Aluminum Duplex	Secondary
350 Aluminum triplex	Secondary

Conduit Clearances

The horizontal and/or vertical clearance between conduit and other underground facilities shall be controlled at a minimum of 12 inches, or more if necessary, to permit access and maintenance to either facility without damage to the other. See NESC 320.

Location and Routing of Conduit for Cables

A. Conduit should be located so as to be subject to the least disturbance practical. Conduit to be installed parallel to other subsurface structures should not be located directly over or under other subsurface structures.
B. The conduit shall be installed in a straight line if possible. Conduit runs are allowed no more than 3 bends total. Only two vertical 90º bends are allowed. If a horizontal turn is needed, one horizontal bend up to 90º.
C. The location of structures in the path of the proposed cable route shall, as far as practical, be determined prior to the routing and trenching operation.
D. Cables should not be installed directly under building or storage tank foundations unless approved by company.

Street or Road Crossings

EKC requires street and road crossings to use 6” galvanized steel. All other products must be approved by the company.

6.B – Additional Information

Transformer Pad Construction

The customer shall supply all three phase transformer pads and 250KVA single phase pads. The Company shall supply single phase poly-pads or fiberglass pads for 167KVA & smaller.

The portion of the transformer pad which supports the transformer must be on level undisturbed earth at final grade. If any excavation is necessary under this part of the pad, adequate provision must be made to prevent settling of the pad.

If customer desires a concrete pad, then the customer shall supply the concrete pad constructed in accordance with the Company's specifications shown in the drawings section.

Padmount Transformer Accessibility

Transformers must be located so that it is accessible to the Company crews at all times. Three phase transformers must be within 15 feet of a paved surface. No portion of the building shall extend over the transformer. If the transformer is surrounded by obstacles, then passageways adequate to accommodate trucks or other necessary lifting and hauling equipment must be provided to allow for the replacement of the transformer.

Transformer Vault Construction

When transformers are to be installed in vaults, the vault shall be designed by the Company.

Connections

The Company shall connect both the primary and the secondary cables to the transformer terminals. The customer/contractor shall be responsible for the correct markings of customer's cables.

On multiple cable installations, all "A" phase, "B" phase, "C" phase and neutral cables should be identified and grounded per NEC requirements. The Company may request verifications of markings before connections are made to the transformer.

Manholes & Pedestals

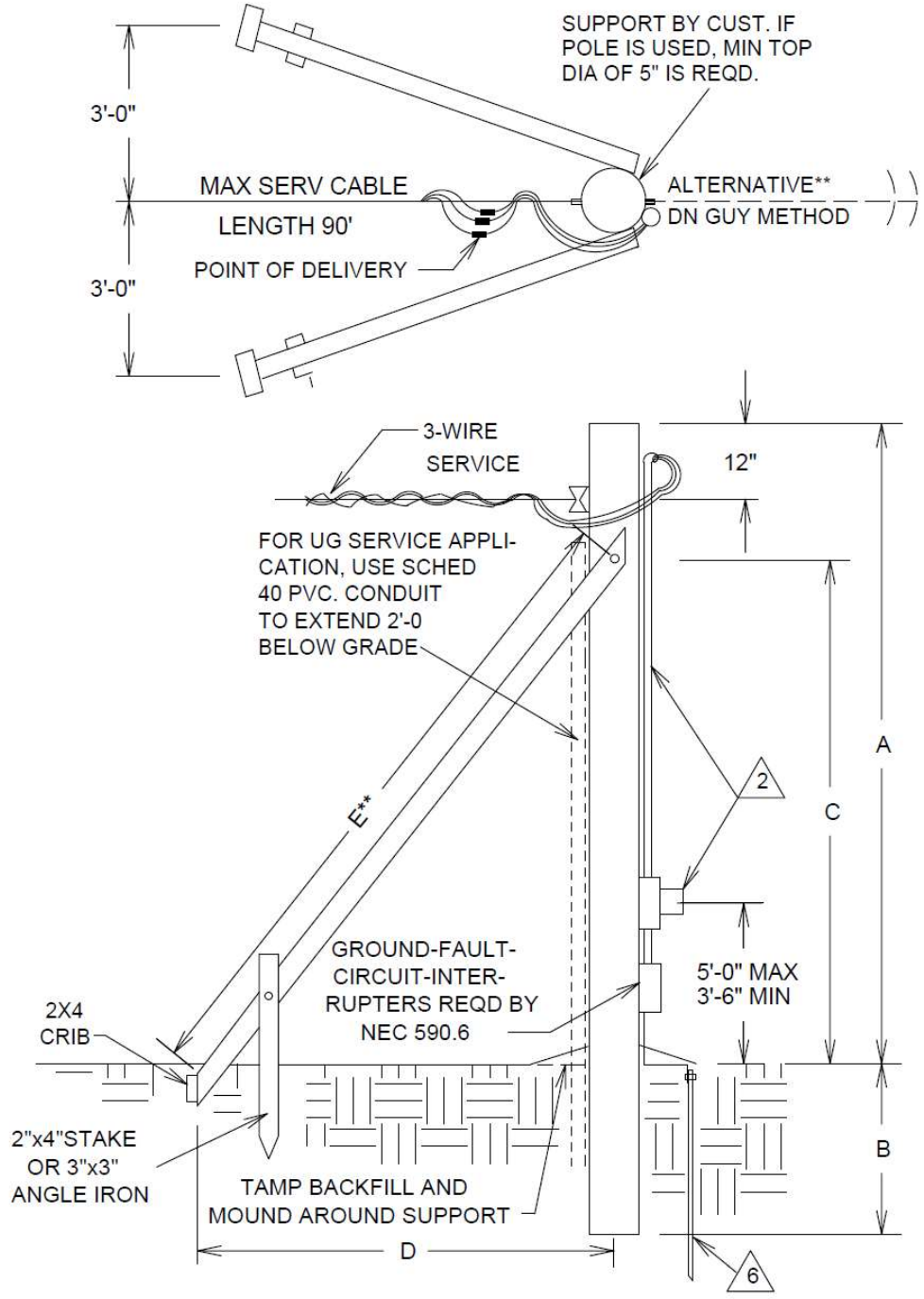
A. If a conduit and primary cable run exceeds 250 feet, or has 90 degree turns, one or more manholes or primary pedestals may be required in accordance with the Company specifications and engineering. The customer, or the customer's representative shall consult with the Company in determining application of the manholes or primary pedestals. Costs of conduit, pedestals, padmount transformers, and conductors may be billed to the customer/contractor/developer. Contact the Company to determine costs that may apply to the installation.

B. Primary pedestals need 10 feet of clear, unobstructed working space directly in front of the pedestal (in the direction from which the pedestal is opened). Additionally, 3 feet of clearance is necessary around the pedestal in all other directions.

7 – Temporary Services

7.A – Overhead

Customer Provided Temporary Service



Notes:

1. Ground meter socket to system neutral.
2. Customer to provide NEC approved metallic or gray PVC schedule 40 or schedule 80 conduit with conductors and weatherhead. Conductor sized to accommodate customer load requirements.

The customer will supply Company approved meter socket.

3. Where local ordinances require inspection of construction meter installations, service cannot be energized until released by the inspection authority.
4. When construction service crosses street or road, the Company shall provide poles as required on each side of crossing, and the additional cost may be charged to the customer.
5. Exact address or legal description of the premises where construction meter is set shall be plainly displayed on the stand while at the construction site and the location shall also be provided to the Company before the meter can be set.
6. The service disconnect shall be grounded using a customer supplied and installed #6 or larger solid copper wire and an 8 foot long, 5/8" diameter, U.L. listed, copper covered steel ground rod.
7. Point of attachment should be an eye-bolt or equivalent that supports 900 lbs.
8.

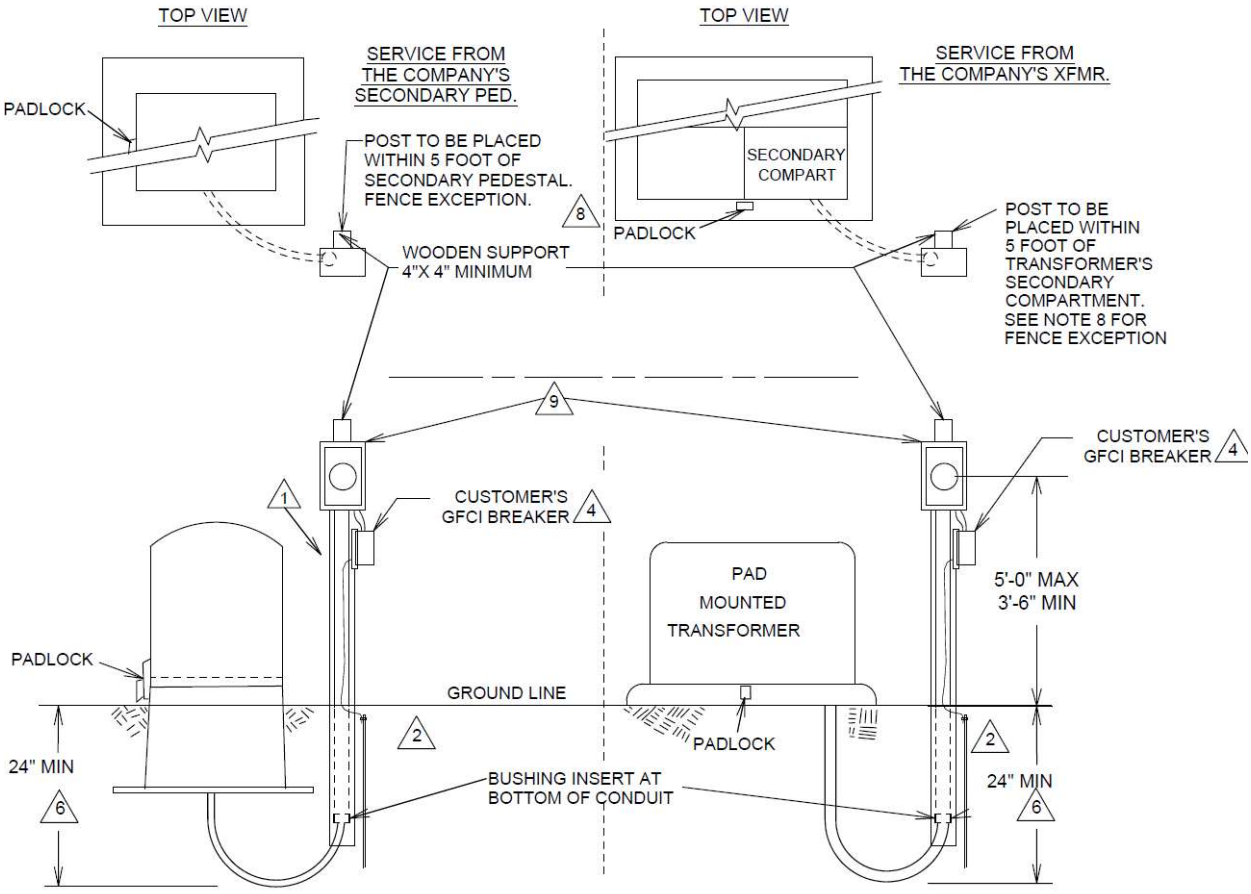
Overall Support Height	A	B	C	D	E**
* 16'	12'-0	4'-0	9'-0	9'-0	2"X4"X14'
18'	13'-6	4'-6	9'-6	9'-6	2"X4"X14'
20'	15'-6	4'-6	10'-6	10'-6	2"X6"X16'
22'	17'-6	4'-6	Use Down Guy		
24'	19'-6	4'-6	Use Down Guy		
30'	25'-0	5'-0	Use Down Guy		

* Shall be a 5" X 5" solid wood post if a pole is not used

** Down guy may be used instead of braces as long as it is properly installed and can withstand 900# cable tension.

7.B – Underground

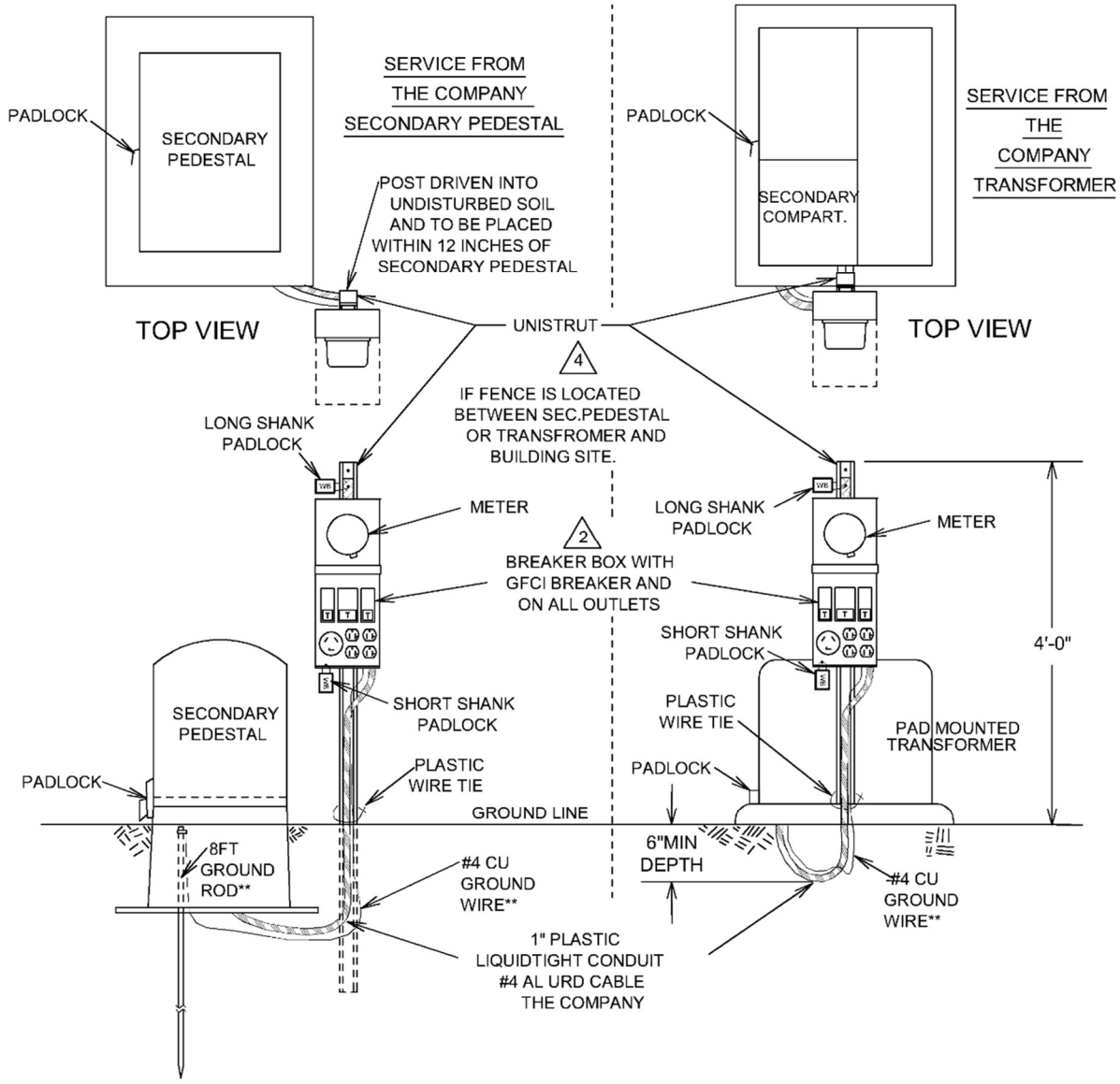
Customer Provided Temporary Service



1. Customer to own, install and maintain conduit from meter to underground trench. EKC shall provide conductors from the padmount transformer or secondary pedestal to the meter.
2. Customer to furnish and install an 8 foot ground rod and #6 or larger bare copper conductor outside the conduit and attach the conductor to the ground rod in accordance with the National Electric Code. NEC 250.53 and 250.66 ground rod shall be at least 6 feet from the transformer or pedestal.
3. Customer shall furnish and set a 4” X 4” support or equivalent. For unusual circumstances contact the Company office for approval.
4. Customer provided ground-fault circuit-interrupters required by NEC 590.6.
5. Where local ordinances require inspection of construction meter installations, service cannot be energized until released by the inspection authority. Installation shall be in accordance with NEC, NESC and local codes.
6. Depth of construction meter service conductors shall be a minimum of 24” or sufficient depth as to protect the cable from damage imposed by expected surface usage.

7. Exact address or legal description of premises where construction meter is to be installed must be provided to the Company before meter can be set. Address shall be plainly marked at the construction meter location while at the construction site.
8. If a fence is between the construction site and transformer (or secondary pedestal), the temporary service shall be set within 5 ft. of the construction side of the fence and in close proximity of the transformer (or secondary pedestal). The NEC required the disconnect to be readily accessible NEC 230.70.
9. The customer will supply Company approved meter socket.

Company Provided Temporary Service



Notes:

1. The Company will install, own and maintain the conduit, conductors, support, enclosure, GFCI breakers and outlets.
2. Ground-fault circuit-interrupters (GFCI) required by NEC 590.6.

3. Exact address or legal description of premises where construction temporary is to be installed must be provided to the Company before temporary service can be set. Address shall be plainly marked at the construction meter location while at the construction site.

⚠4. This service is not available if there is a fence between the construction site and the transformer/secondary pedestal NEC 230.70.

5. Tampering or damaging the builder's choice meter installation will result in removal of service, forfeiture of service fee, and recovery of repair costs.

** If required by local inspection, ground rod may need to be installed in secondary pedestal if not present.

8 – Motors

8.A – Motor Information

All motors with a rated capacity of more than 10 horsepower shall be equipped with motor soft start equipment to limit the current inrush. All motors with one start per hour or less shall have starting currents that will not cause more than a 2% primary distribution voltage dip, as measured on the primary side of the service transformer. Where customers' requirements are such that the inrush current may exceed the above amounts, the customer may submit a written application to the Company to use such equipment setting out the detailed specification of the motor and starting equipment proposed to be used. The Company will consider such application, and if it determines that the use of such equipment will not be detrimental to the service supplied to other consumers of the Company written permission will then be given by the Company for use of the equipment specified in the customer's letter. It is the customer's responsibility to ensure all new motor installations will comply with Institute of Electrical and Electronics Engineers (IEEE) 1453 Standards. Customers found to be out of compliance with this standard will be required to install the necessary equipment to bring equipment within compliance at their own expense.

120 Volt Circuits - Industry standards permit the installation of motors up through 1 hp on 120 volt circuits if the starting current is below 50 amperes. Customers have had starting troubles with 3/4 and 1 hp motors of this voltage. Therefore, the Company highly recommends that 1/2 hp to be the largest 120 volt motor.

240 Volt Circuits - Motors up through 10 hp may be installed on single phase 240 volt circuits in urban areas. Motors up to 7.5 hp may be installed on single phase 240 volt circuits in rural areas and small towns in rural areas. The locked rotor current of motors or air conditioners should not exceed 300 amperes. Motors larger than above shall be approved by Company's Engineering Departments before they are installed.

Motor Protection -The Company uses single-pole switches and single-phase fuses in its distribution system. Accordingly, the customer must protect all three-phase motors and equipment from a single-phase operating condition. In addition, suitable protection must be provided by the customer for all motors in accordance with the National Electrical Code in order to protect the motor and equipment from improper or dangerous operation due to motor overloads or the failure to start.

(A) All motors shall be protected against overload by the installation of adequate over-current, thermal protective devices in all phases.

(B) Three-phase motors that operate apparatus that may be subjected to damage due to a reversal of rotation shall be protected with reverse-phase relays.

The Company shall not be responsible for any damage to the customer's equipment due to improper protective devices or the improper functioning of protective devices.

It is necessary to contact the Company representative and obtain written permission from the Company's engineering department when planning the installation of any motor indicated in the following table:

Urban Areas

Motor Rating	NEMA Code Letter
Single Phase: 10HP/50,000*BTUH or More	Any Code Letter
Three Phase: 20HP/225,000*BTUH or More 20 HP 25HP 30HP 40HP 50HP 60HP 75HP Over 75HP	Any Code Letter T or Greater R or Greater P or Greater L or Greater J or Greater H or Greater F or Greater Any Code Letter

*BTUH – British Thermal Units Per Hour

Rural Areas & Small Towns in Rural Areas

Motor Rating	NEMA Code Letter
Single Phase: 7.5HP/50,000*BTUH or More	Any Code Letter
Three Phase: 10HP/50,000*BTUH or More	Any Code Letter

NEMA Code Letter Preference	
NEMA Code Letter	Locked Rotor KVA/HP
A B C	0.00 – 3.14 3.15 – 3.54 3.55 – 3.99
D E F	4.00 – 4.49 4.50 – 4.99 5.00 – 5.59
G H J	5.60 – 6.29 6.30 – 7.09 7.10 – 7.99
K L M	8.00 – 8.99 9.00 – 9.99 10.0 – 11.1
N P R	11.2 – 12.4 12.5 – 13.9 14.0 – 15.9
S T U V	16.0 – 17.9 18.0 – 19.9 20.0 – 22.3 22.4 & Above

Notes:

1. These values apply to combined light and power secondary systems. In case of either automatic or non-automatic equipment, not more than four starts per hour are expected with long periods of continuous operation at maximum load. This does not apply to domestic laundry equipment.
2. Where equipment contains more than one motor and some motors are arranged for starting in sequence, the maximum total current should not exceed these values and the interval between steps should not be less than one-half second.

3. Where design of equipment produces unequal currents caused by auxiliary motors, the maximum total current should not exceed these values.
4. Air conditioning or heat pump equipment is rated in BTUH* in accordance with ARI standards and NEMA standards.
5. 12,000 BTUH is equivalent to one ton of air conditioning.
   *BTUH – British Thermal Units Per Hour

9 – Distributed Energy Resources

9.A – Standby Generation

Connection of standby generation is permitted with use of break-before-make main switch(es) so that standby generation cannot back feed the Company's facilities. The switch must be compliant to NEC code article 702. The customer must submit to the Company detailed plans which may include specifications, equipment description, and other details pertinent to the proposed installation. The Company must approve these plans, specifications, etc., before operation will be allowed. Submit plans to Customer Service.

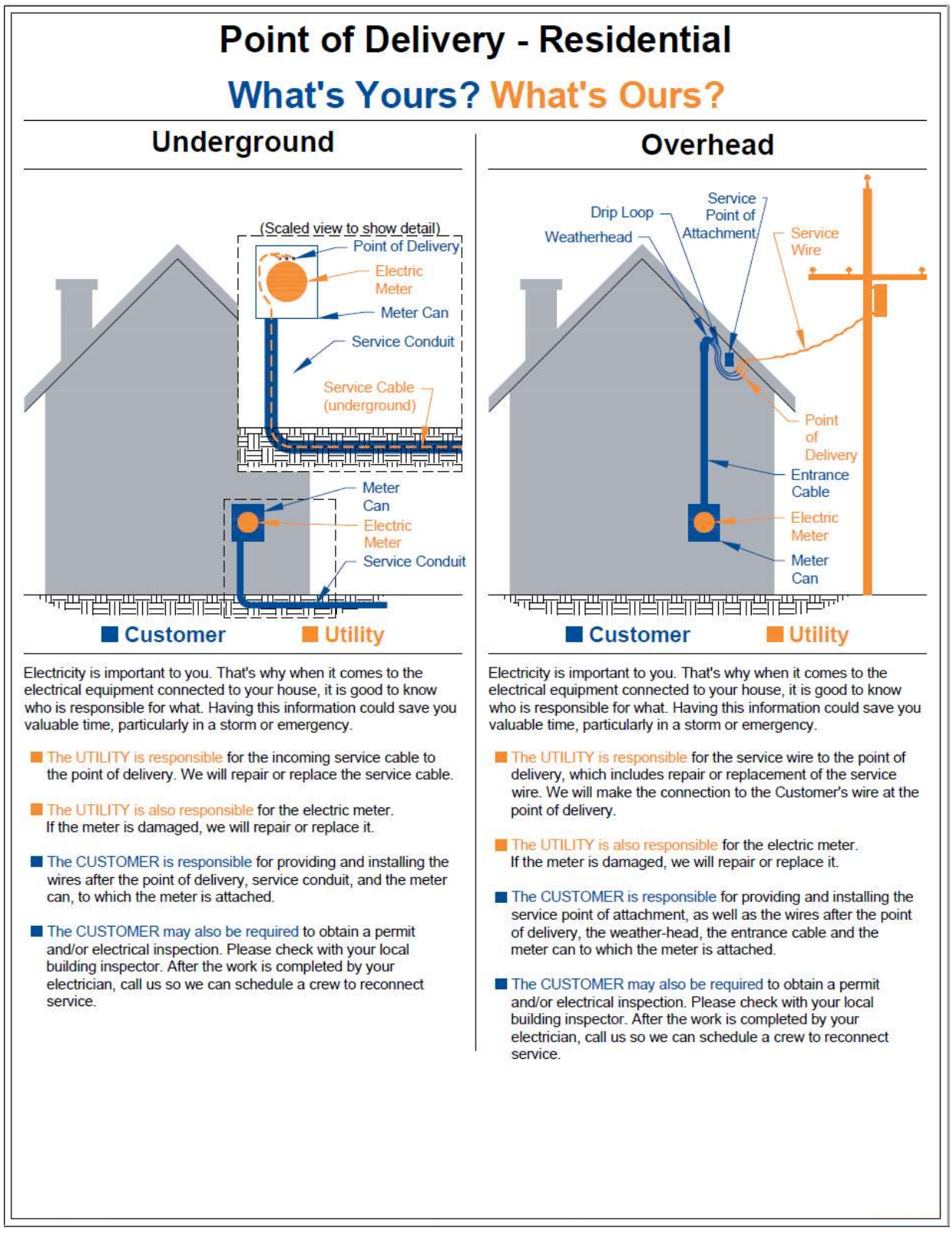
See section 10.39 for examples

9.B – Customer Owned Generation

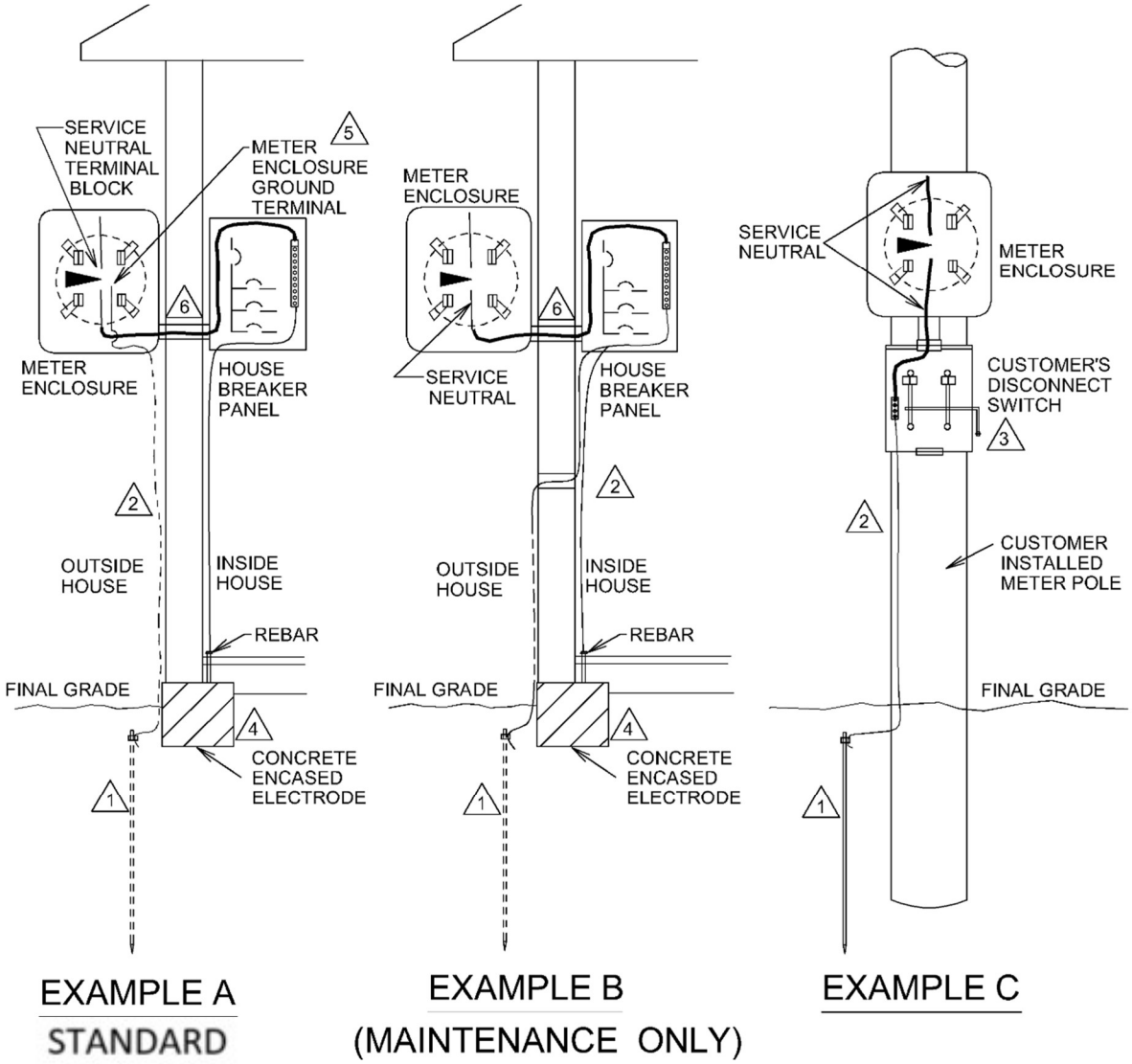
Please refer to the Company's facility connection standard on the ESS website http://ss.wr.com/

Drawings

10.1 – Point of Delivery



10.2 – Grounding Diagrams

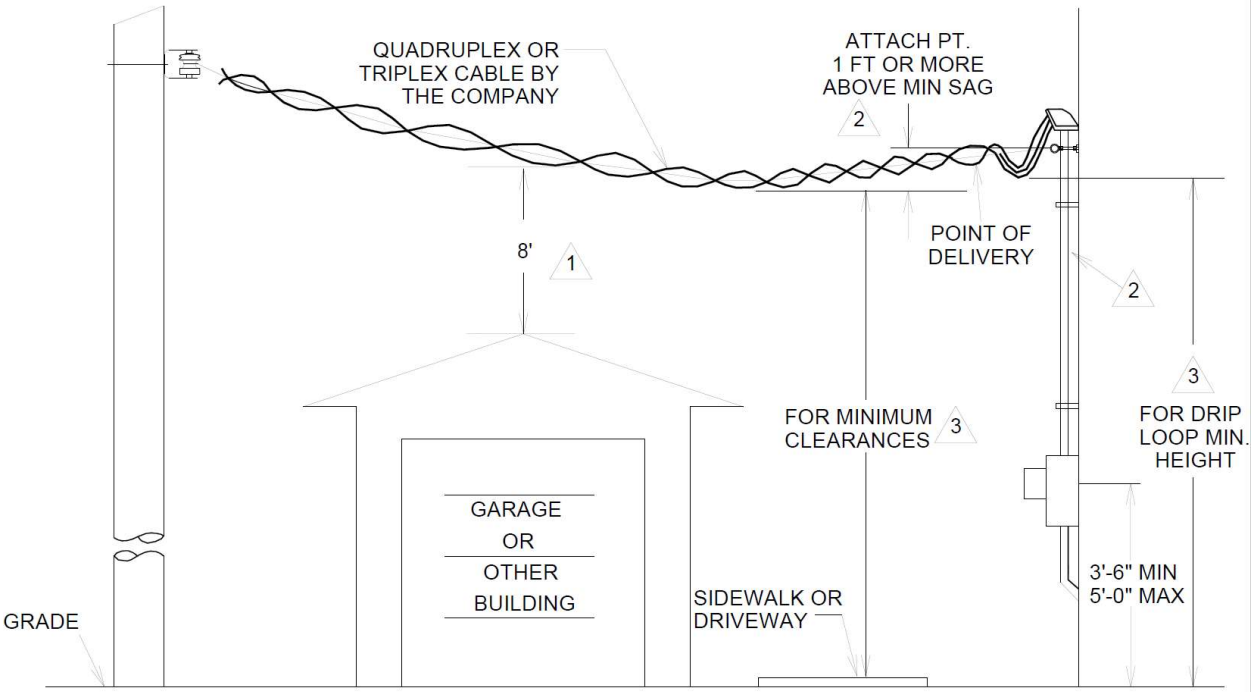


Notes:

1. Customer to install adequate grounding for service entrance according to NEC 250. This may consist of a 5/8” diameter by 8 ft. steel copper clad ground rod that is driven vertically the entire length into undisturbed earth with #6 copper wire connected between the ground rod and the meter enclosure (or disconnect device) if concrete encased electrode is not available, NEC 250.52(A)(5)(b). Ground rod to be located exterior to house; consult local inspection authorities.
2. All examples are acceptable to the NEC, NESC and Company. New construction for buildings shall follow Example A. however, customer/developer should first check with the local code authority to determine the example that the local code authority also requires.

3. Weather proof breaker panel may be substituted for disconnect as long as it complies with the NEC.
4. Concrete encased electrode as specified in NEC 250.52(A)(3) (if applicable)
5. Grounding electrode conductor connection shall be made in the house breaker panel if the meter enclosure ground terminal is not available.
6. Equipment grounding shall not be installed between the meter and the house breaker panel per NEC 100 definition egc.

10.3 – Overhead Service Clearance



1. The 8 ft. clearance must be maintained above the flat roof including the area extending 3 feet out from the edge of the roof. – Exception – where the voltage between conductors does not exceed 300 volts and the roof has a slope of not less than 4 inches drop in 12 inches of run, the clearance may be reduced on multiplex conductor not less than 3' – 6" NESC 234-1
2. The customer/developer will supply Company approved meter socket. Meter pole, riser, riser conductor and weather head furnished and installed by customer/developer. Customer/developer shall allow 3 ft. excess wire out of top of mast. Point of attachment at residence shall be 1 foot or more above the minimum conductor height to allow for conductor sag.
3.

Voltage Limits Location of Service Wire	Multiplex Cable Limited to 150 V. to Ground 120/240 1ϕ 120/208 Y	Multiplex Cable Limited to 300 V. to Ground 240/480 1ϕ, 240Δ 120/240 4WΔ 277/480 Y	Open Wire Limited to 600 V. to Ground 480Δ
Drip loop service entrance	10'-0 NEC 230.24(B)(1)	15'-0 NEC 230.24(B)(2)(3)	18'-0 NEC 230.24(B)(4)

Areas accessible only to pedestrian ∗, resident driveway	12’-0 NESC T232-1	12’-6 NESC T232-1	15’-0 NEC 230.24(B)
Driveways ∗∗, public streets, alleys, roads, & parking areas	18’-0 Company∗∗∗	18’-0 Company∗∗∗	18’-0 NEC 230.24(B)(4)
In Wichita or within 3 miles of city limits for public streets, alleys, and roads.	19’-0 City ordinance 45987 KGE franchise agreement	19’-0 City ordinance 45987 KGE franchise agreement	19’-0 City ordinance 45987 KGE franchise agreement
In Newton or within 3 miles of city limits for public streets, alleys, and roads	22’-0 City ordinance 3668 KGE franchise agreement	22’-0 City ordinance 3668 KGE franchise agreement	22’-0 City ordinance 3668 KGE franchise agreement

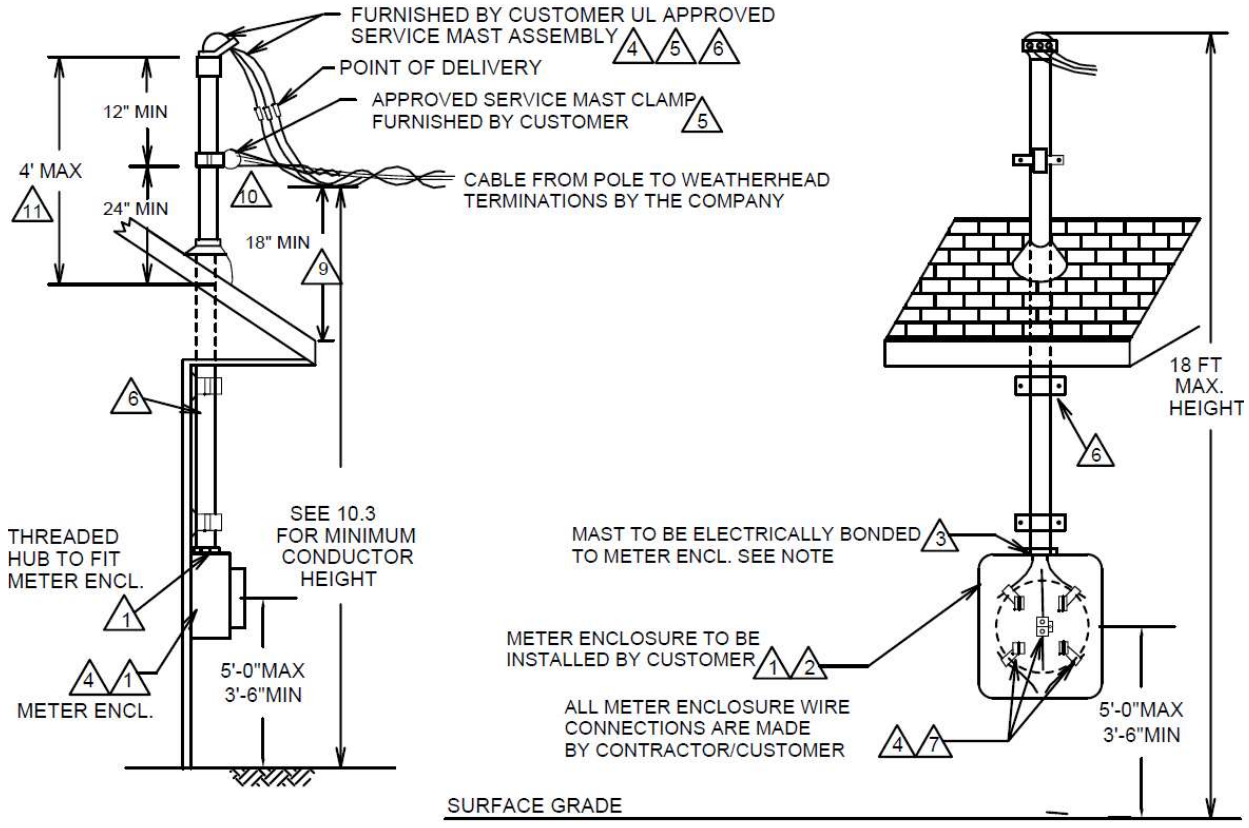
∗ Where building does not allow clearance, see NESC T232-1 Footnote 8.

∗∗ Driveways subject to truck traffic.

∗∗∗NESC Table 232-1 requires 16’-0. However, The Company standards require 18’-0.

4. Where applicable due to service length, The Company may supply spot/lift pole.

10.4 – Service Attachment Points/Mast Assembly



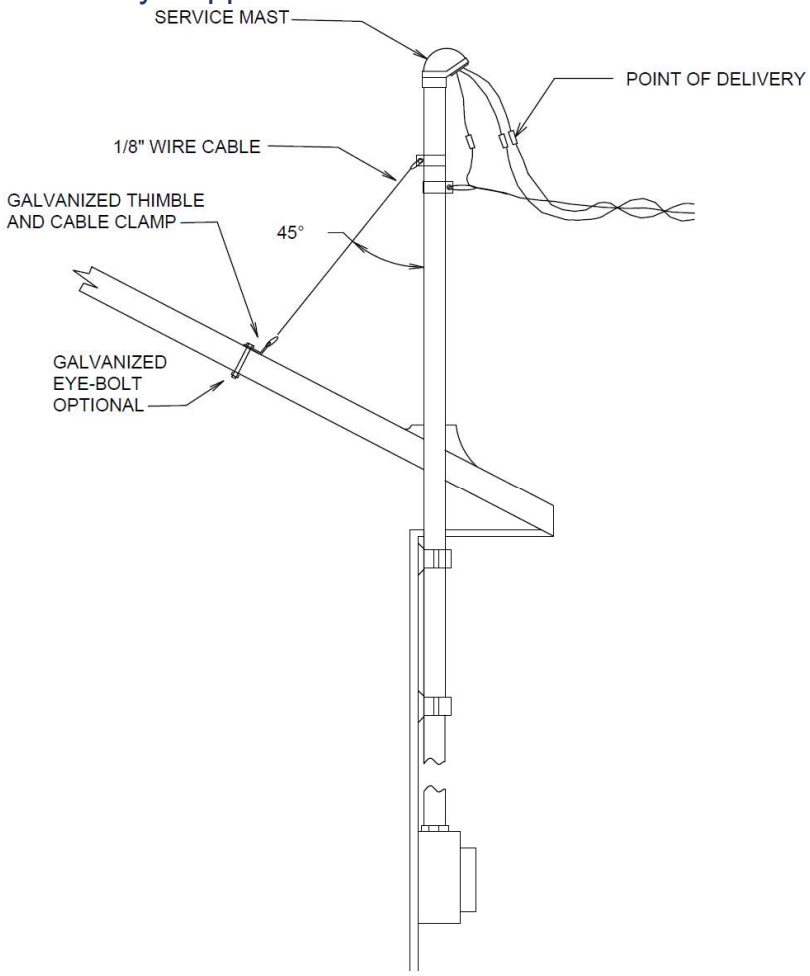
Notes:

1. The customer/developer will supply Company approved meter socket. Meter enclosure shall be located free from obstructions with 30 inches on one side.
2. Meter enclosure shall also have 3 feet of clearance from doors and windows, and have 4 feet of clearance in the front. NEC 110.26(A)(1), (2). Separation to communication wires shall not be less than 24” in crossing span; 12” in parallel span; 4” in relation to the house. NEC 800.44, NESC 233C1

3. Communication grounds shall not be attached the meter enclosure. The mast shall be electrically bonded to the meter base.
4. Customer/developer shall own and install U.L. approved service mast (including conductors, in mast), ground equipment and service attachment brackets. All meter enclosure wire connections shall be made by the customer/developer. The conductor size shall be within limits specified for the meter lugs by the meter enclosure manufacturer.

5. A customer/developer installed service mast or other such service support attachment point shall be capable of withstanding 900 lbs. cable tension. Maximum height to top of mast is 18 ft. unless local code requires other.
6. Except for wires extending out of weatherhead (allow 3 ft. Excess for connections) all service conductors shall be in conduit. Use 2” U.L. listed galvanized rigid steel conduit or larger conduit recommended by NEC (excludes EMT and PVC).
7. Only one service entrance conductor shall be allowed to each meter enclosure lug. A maximum of two sets of service entrance conductors shall be allowed in an approved meter enclosure with a connector designed for two sets of service conductors (NEC 110.14(A). The Company requires the customer’s/developer’s disconnects shall be grouped at a common location, and shall be within 15 ft. of building penetration or local code. (Local jurisdiction may be more stringent).
8. For recommended service entrance grounding details see meter grounding drawing
9. Clearance may be reduced to not less than 18 inches for mast raceway services of 300 volts or less, passing through the overhanging portion of the roof providing that not more than 6 feet of service conductors passes over not more than 4 feet of roof surface measured horizontally. NEC 230.24(A)
10. For attachment of electric service conductor only see NEC 230.28.
11. Contact the Company for service mast greater than 4’ in height. See drawing 10.5.

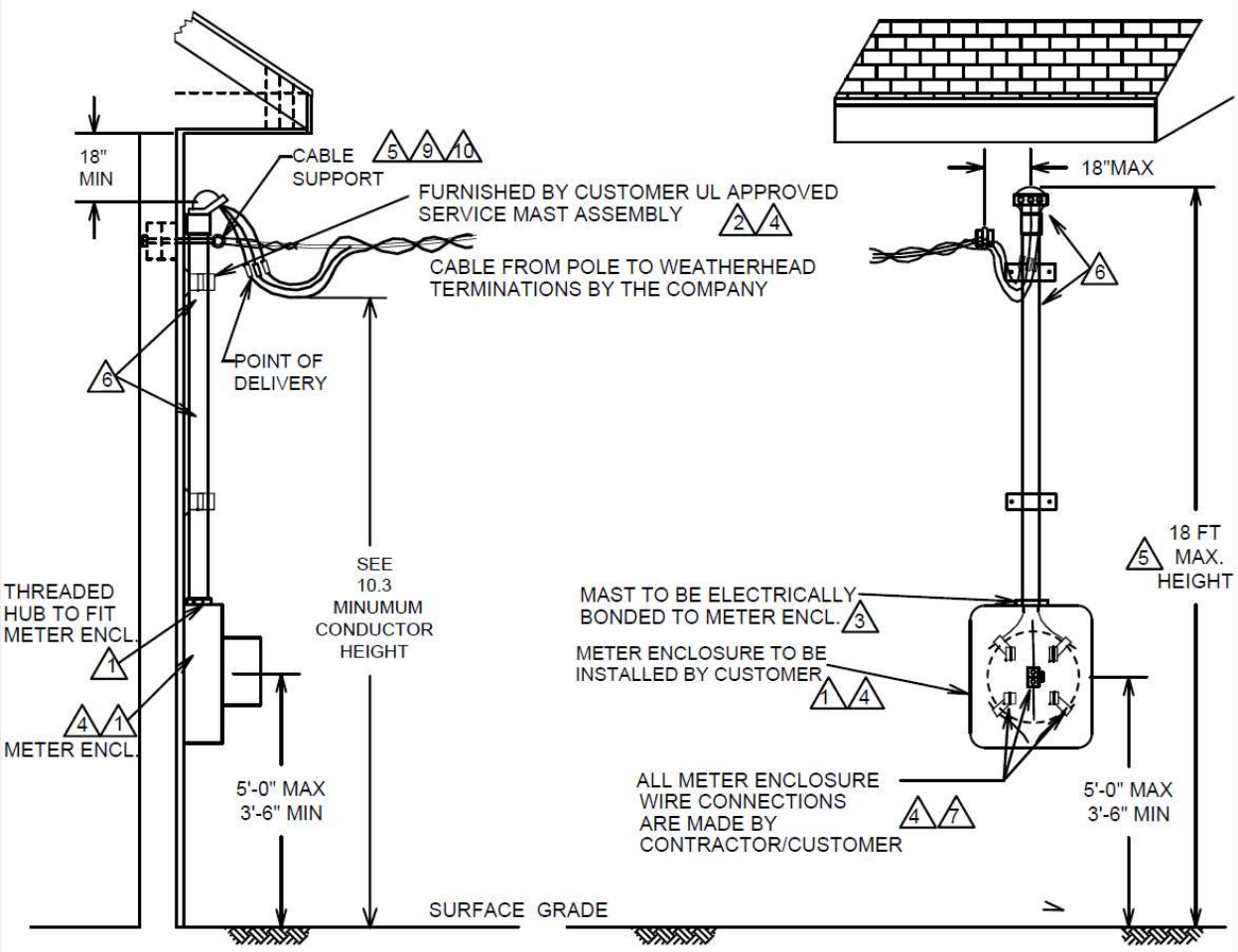
10.5 – Service Mast Guy Support



Notes:

1. Contact the Company for service mast greater than 4 feet in height.
2. Point of attachment over 2 feet above the roof are required to be guyed.
3. Guying shall be capable of withstanding tension of the service cable.
4. See section 10.4 for service entrance and mast assembly detail.
5. Guy clamp shall be separate from the mast clamp.
6. Guy angle should be 45 degrees or greater

10.6 – Non-Support Mast Assembly (Commercial/Residential)

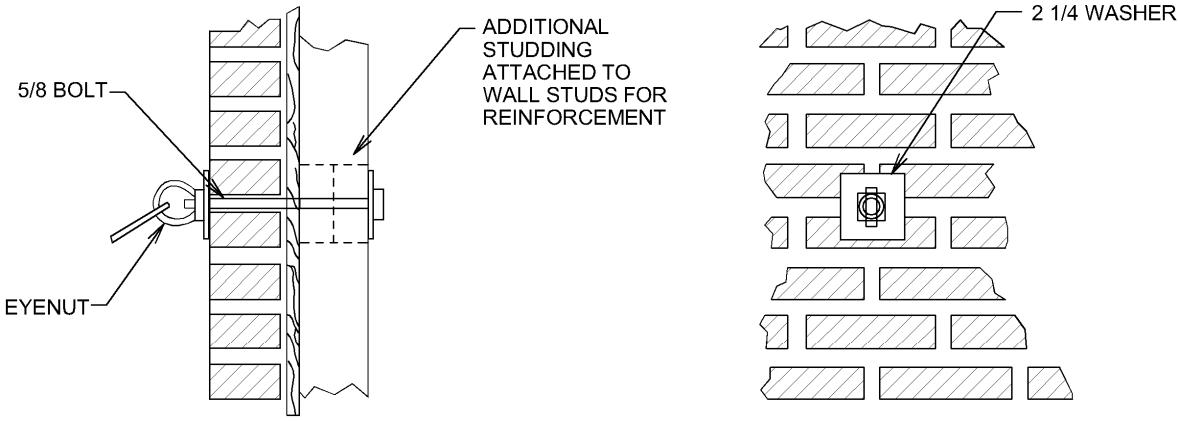


Notes:

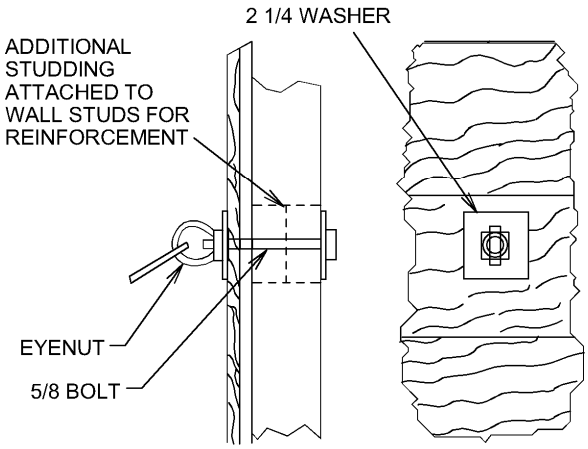
1. The – customer/developer will supply Company approved meter socket.
2. Separation to communication wires shall not be less than 24" in crossing span; 12" in parallel span, 4" in relation to the house. NEC 800.12(b) 820.10, NESC 233C1.
3. Communication grounds shall not be attached to the meter enclosure. The mast shall be electrically bonded to the meter base if rigid metallic conduit is utilized.
4. Customer shall own and install U.L. approved service mast including conductors, in mast), ground equipment and service attachment brackets. All meter enclosure wire connections shall be made by the customer. The conductor size shall be within limits specified for the meter lugs by the meter enclosure manufacturer.
5. Customer/developer must provide point of attachment. For recommended attachments see section 10.7. Maximum height of attachment to be 18 ft unless local code requires other.
6. Except for wires extending out of weather head (allow 3 ft. excess for drip loop and connections), service conductors shall be in conduit as required by NEC or local code. Galvanized 2" U.L. listed rigid metal, EMT, or schedule 40 conduit is recommended. Contact the Company service representative if larger size is required.

7. Only one service entrance conductor shall be allowed to each meter enclosure lug. A maximum of two sets of service entrance conductors shall be allowed in an approved meter enclosure with a connector designed for two sets of service conductors. Enclosure shall not be used for any other premises wiring except for grounding wire NEC 230.7. Customer/developer's disconnect shall be grounded at a common location and shall be within 15 ft. of building penetration or local code.
8. For recommended service entrance grounding details see section 10.2.
9. For attachment of electric service conductor only see NEC 230.28.
10. Cable support to be below weatherhead or goosenecks per NEC 230.54c.

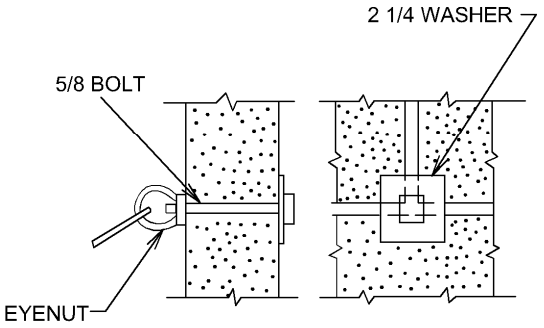
10.7 – Service Point Attachments



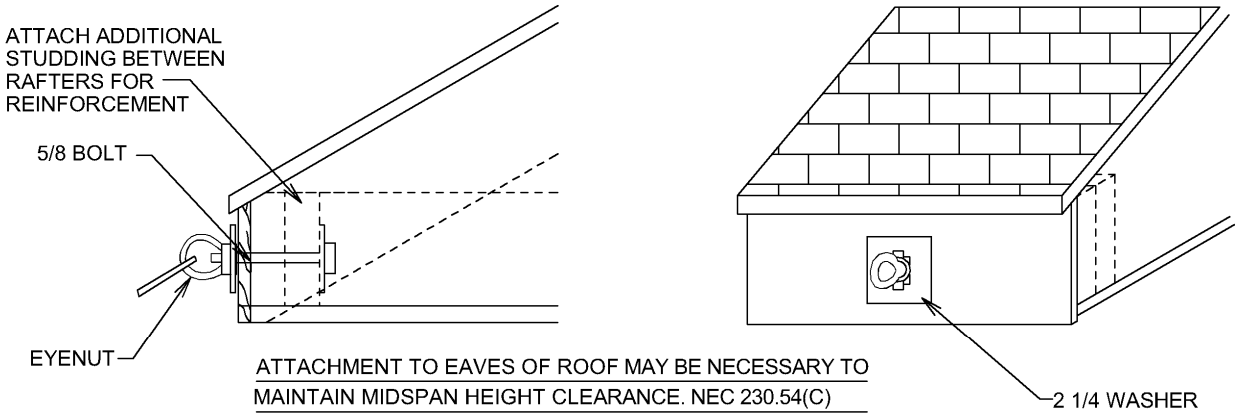
RECOMMENDED ATTACHMENT FOR BRICK OR STONE BUILDINGS



RECOMMENDED ATTACHMENT FOR WOOD FRAME BUILDINGS

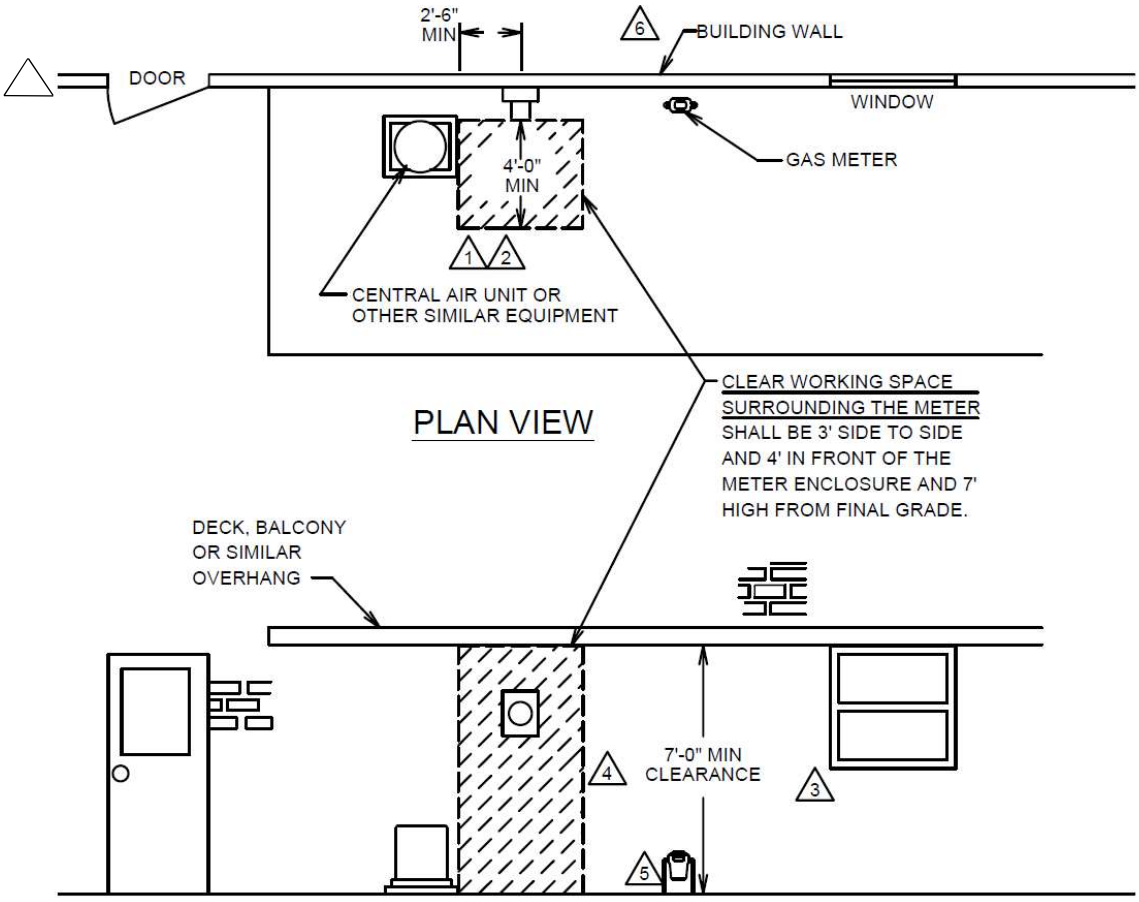


RECOMMENDED ATTACHMENT FOR CEMENT BLOCK WALLS



ATTACHMENT TO EAVES OF ROOF MAY BE NECESSARY TO MAINTAIN MIDSPAN HEIGHT CLEARANCE. NEC 230.54(C) DOES ALLOW (AS AN EXCEPTION) THE ATTACHMENT POINT TO BE ABOVE THE WEATHERHEAD. HOWEVER, SOME REGULATORY AUTHORITIES MAY NOT ACCEPT THIS SITUATION.

10.8 – Electric Meter Clearance



1. Meter enclosure shall have 3 feet of clearance from swing doors, windows and other openings. The meter enclosure shall have a working space with 4 ft. min clearance in front of the meter enclosure. NEC 110.26(A)(1)(2).
2. Gas meters, air conditioning units and other equipment shall not be located within the clear working space surrounding the meter (shaded area shown above).
3. Pane windows that are specifically designed without any kind of a mechanism or means to open them may be treated like part of a wall for the purposes of the 3-foot clear working space, however no equipment shall be installed upon, nor conduit run directly on the outside of the window.
4. Meter enclosure shall be located in an area so that any building overhang is not less than 7 feet above final ground level. NEC T125-1
5. Gas meter shall be located 3 ft. from electrical equipment.
6. Meter enclosure shall have a minimum of 30 inches of working space from the center of the enclosure on at least one side of the meter enclosure.

10.9 – List of approved C.T. Cabinets

	Approved Milbank CT Cabinets				
Entrance Size (Amperes)	**Lugs Per Phase 750MCM max[1]**	**Wall Mount**		**Pad Mount**	
		Model #	**Dimensions (W x H x D)**	**Model #**	**Dimensions (W x H x D)**
400	1	KCPLM-434[2,3]	24"x42"x9"	KCPLM-434PM[3]	25”x58”x15”
800	3	KCPLM-834[2,3]	24"x42"x9"	KCPLM-834PM[3]	36”x58”x15”
1200	4	KCPLM-1234[2]	36"x48"x15"	KCPLM-1234PM	46”x64”x15”
1600	5	KCPLM-1634[2]	38"x60"x17"	KCPLM-1634PM	54”x66”x15”
2000	6	KCPLM-2034[2]	42"x66"x15"	KCPLM-2034PM	54”x66”x15”
3000	8	KCPLM-3034[2]	42"x72"x21"	KCPLM-3034PM	50”x72”x21”

Notes:

1. Based on 500kCM Cu or 750kCM AA-8000 compact Al maximum service cable. Lug for 600-800 cabinet will accommodate 2-350 or 1-600MCM cable.
2. For bottom entrance and exit, add UGBX to the wall mount model #. Width is increased, see Mfg.
3. 1Ø-3Wire version is available. KCPLM-413, KCPLM-413UBGX, KCPLM-413PM KCPLM-813, KCPLM-813UBGX, KCPLM-813PM

	Approved Erickson CT Cabinets				
Entrance Size (Amperes)	**Lugs Per Phase 750MCM max[1]**	**Wall Mount**		**Pad Mount**	
		Model #	**Dimensions (W x H x D)**	**Model #**	**Dimensions (W x H x D)**
800	3	CT84-KCPL	24"x48"x11"	PMCT84-KCPL	24”x56”x16”
1200	4	CT124-KCPL[2]	36"x64"x15"	PMCT124-KCPL[2]	40"x64"x30"
1600	5	CT164-KCPL[2]	40"x64"x15"	PMCT164-KCPL	40"x64"x30"
2000	6	CT204-KCPL[2]	40"x64"x15"	PMCT204-KCPL	40"x64"x30"
3000	8	CT304-KCPL[2]	44”x78”x21”	PMCTCC4612N-KCPL	67”x75”x24”
4000	11	CT404-KCPL[2]	44”x78”x21”	PMCTCC4613N-KCPL	67”x75”x33”

Notes:

1. Based on 500kCM Cu or 750kCM AA-8000 compact Al maximum service cable.
2. For bottom entrance and exit, optional side gutter -SG is required.

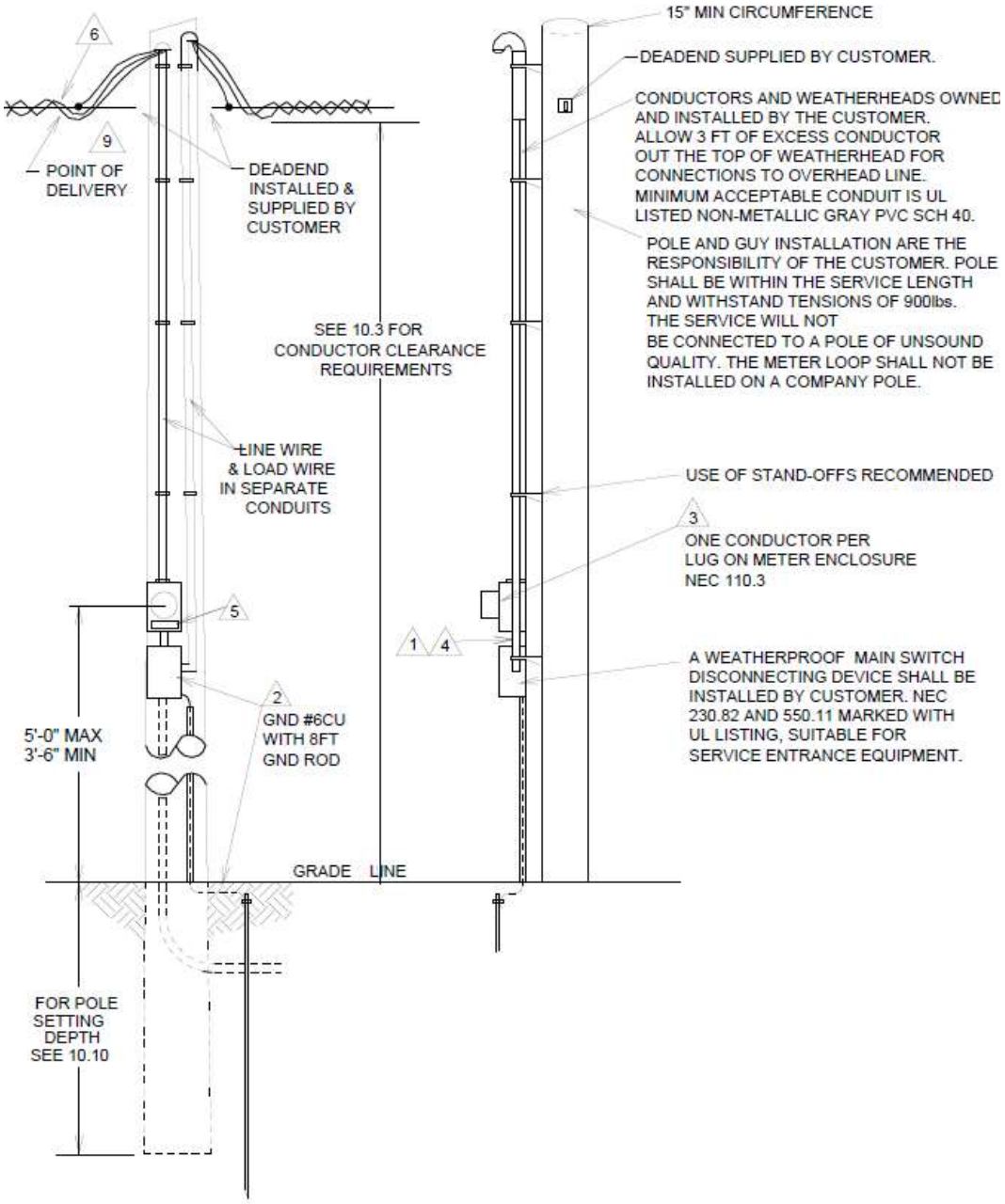
10.10 – Meter Pole Specifications

When a customer/developer intends to install a pole mounted meter, the customer shall furnish and install a pole and guying capable of supporting at least 900 pounds of tension from the overhead service. The pole shall not be smaller than an American National Standards Institute (ANSI) 05.1 Class 7, 20 feet (in length), pressure treated wood pole. See table below for pole sizes and setting depths.

Minimum Circumference and Depth of Pole Setting

Length of Pole in Feet	Circumference at Top of Pole in Inches	Circumference at 6 Feet from Butt in Inches	Depth of Setting in Feet
20’	15”	20”	5’
25’	15”	22”	5’
30’	15”	24”	5’
35’	15”	25”	5 ½’
40’	17”	28 ½”	6’

10.11 – Meter Pole Details

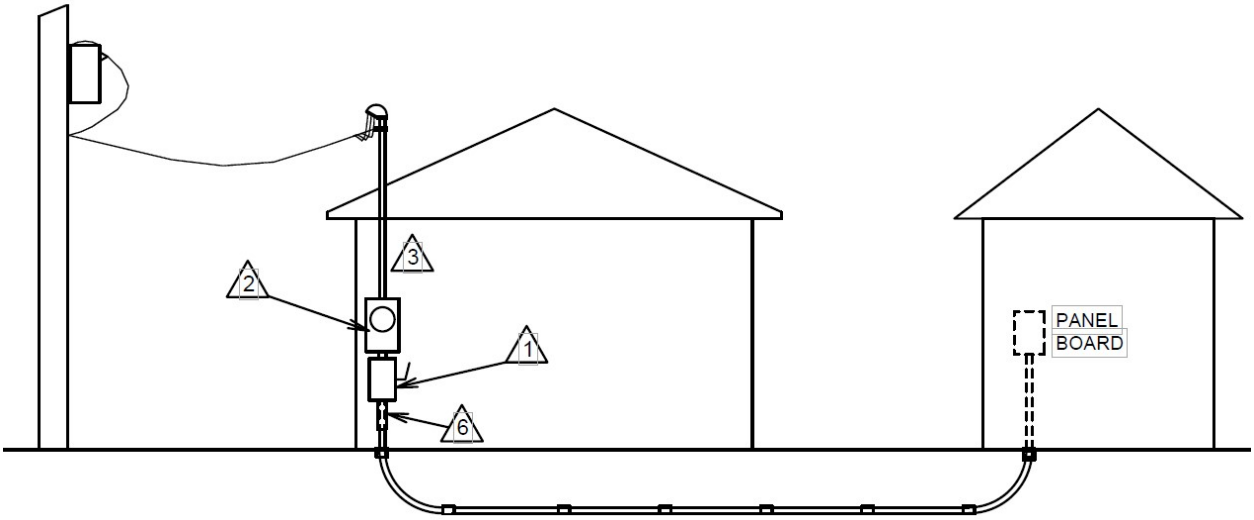


Notes:

1. Customer/developer may install underground, overhead or a plug receptacle service from this point. Use insulated 600 volt wire. #6 copper or larger, depending on the size of the load served.
2. For grounding specifications see Grounding Section
3. The customer/developer will supply Company approved meter socket.

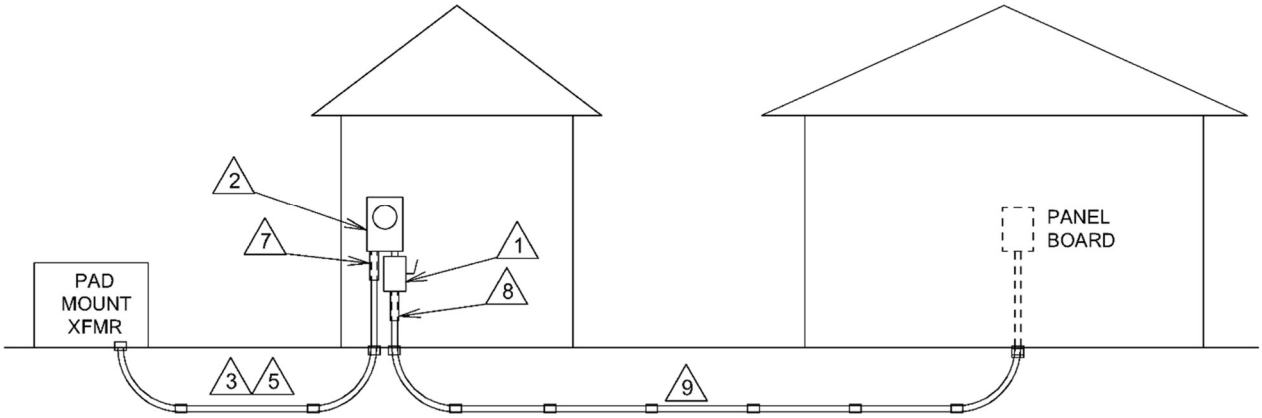
4. Before installing a meter, inspection is required when installation is within limits of the local inspection authority (I.E. may be city or county).
5. Address of business shall be permanently marked on face of meter enclosure.
6. Service cable furnished and installed by the Company.
7. For services over 200 amperes, contact local Company Service Center.
8. Installation shall be in accordance with NEC, NESC, local code, and the Company.
9. For attachment of power service conductor only see NEC 230.28.
10. 480V requires a weatherproof, load-breaking, non-fused disconnect switch ahead of the meter.
11. See section 10.10 for pole specifications

10.12 – Double Lugged Meter Enclosure Service (Overhead)



1. When a residence and a separate structure have one set of service-entrance conductors to each from a single service NEC 230. 40 ex. 3, then - a weatherproof main disconnecting device shall be installed by the customer/developer at the meter location in the conductors that serve the separate structure. A permanent plaque is required to identify the structure being served from disconnect. NEC 230.2(E)
2. Meter enclosure shall be approved for two sets of service entrance conductors and have approved connectors designed for two sets of service conductors and have approved connectors designed for two sets of service conductors. Conductors sized per UL label on the meter enclosure NEC 110.3
3. See section 10.4 for mast assembly information
4. Before installing a meter, inspection is required when the installation is within the limits of a local inspection authority (i.e. either city or county).
5. The Company will furnish and install one set of overhead service cables from the transformer pole or secondary pole of the Company's distribution system to the service point at the customer/developer's weatherhead.
6. Customer/developer is to provide NEC specified conduit requirements for ground movement NEC 300.5(J).

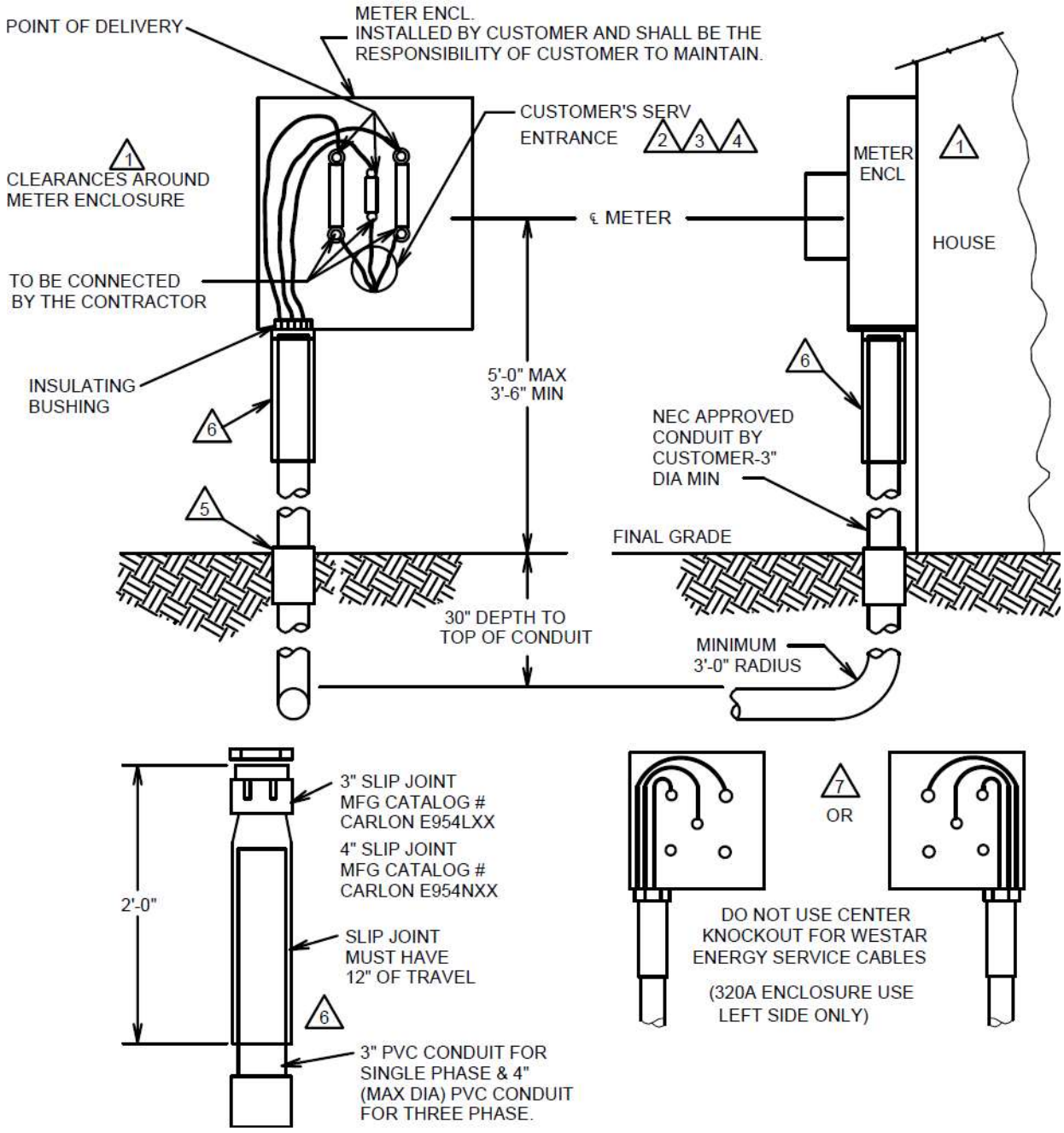
10.13 – Double Lugged Meter Enclosure Service (Underground)



1. When a residence and a separate structure have one set of service entrance conductors to each from a single service NEC 230.40 EX. 3. Then a weatherproof main disconnecting device shall be installed by the customer/developer at the meter location in the conductors that serve the separate structure. A permanent plaque is required to identify the structure being served from meter or disconnect. NEC 230.2(E).
2. Meter enclosure shall be approved for two sets of service entrance conductors and have approved connectors designed for two sets of service conductors. Conductors sized per U.L. label on the meter enclosure NEC 110.3.
3. See section 6 for conduit installation requirements.
4. Before installing a meter, inspection is required when the installation is within the limits of a local inspection authority (I.E. either city or county).
5. The Company shall install and own one set of service conductors service up to 135 ft. in length from the pole, secondary pedestal, or padmount transformer of the distribution system to the meter enclosure.
6. Installation shall be in accordance with the NEC, NESC, local code, and the Company.
7. Customer/developer shall provide approved prefabricated slip joint for ground movement NEC 300.5(J).
8. Customer/developer to provide NEC specified conduit requirements for ground movement NEC 300.5(J).
9. Customer/developer owned feeder.

10.14 – Metering for Underground Services

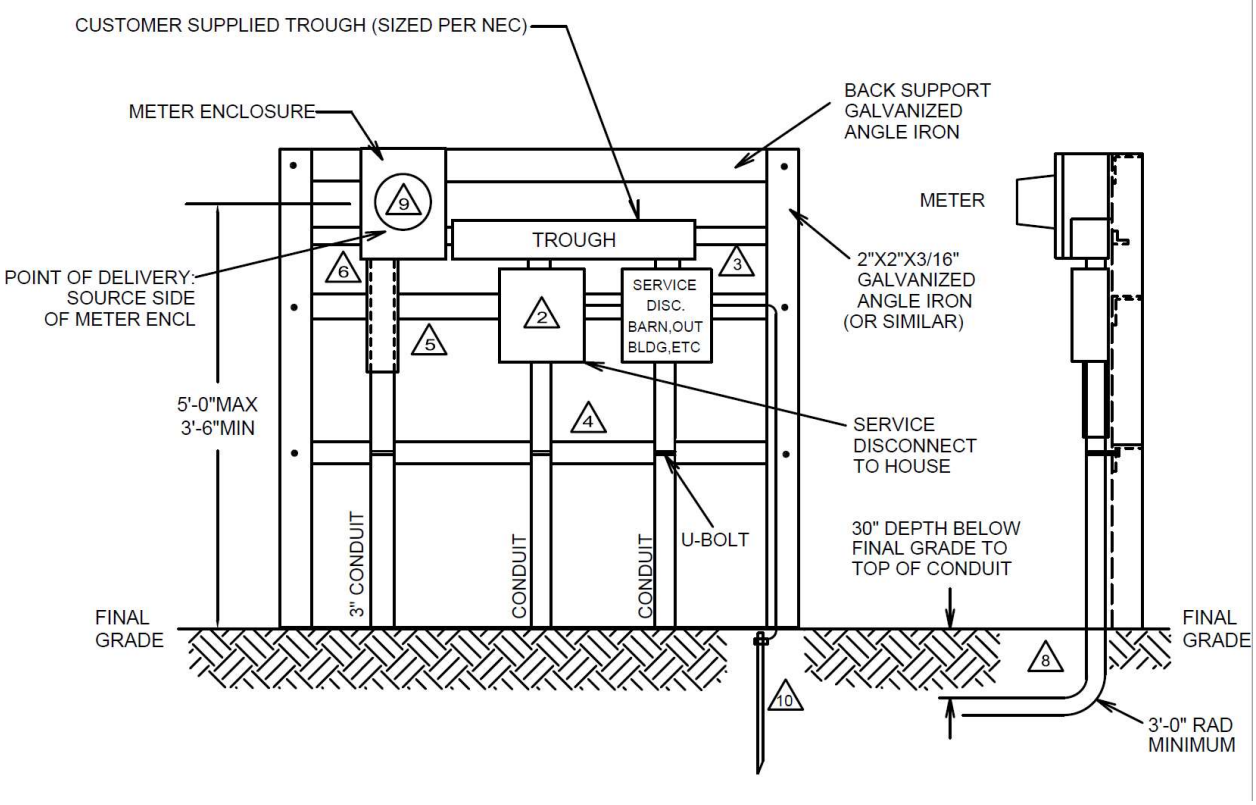
The Company must approve the type and size of the equipment in advance. All pulling space provided in the customer/developer's equipment for termination of The Company's service conductors shall conform to the size requirements set forth in the NEC covering pull boxes. In this case, the building owner or customer's agent will own and maintain the meter sockets and enclosures and The Company will own and maintain the meters.



Notes:

1. Meter enclosure shall be located free from obstructions with 30 inches on at least one side. Meter enclosure shall also have 3 feet of clearance from doors and windows, and have 4 feet of clearance in the front. NEC 110.26(A)(1), (2)
2. Only one service entrance conductor shall be allowed to each meter enclosure lug. Conductor sized per U.L. label (NEC 110.3).
3. A max of two sets of service entrance conductors shall be allowed in an approved meter enclosure with connector designed for two sets of service conductors (NEC 110.14(A)). Customer's disconnect shall be grouped at a common location and shall be within 15 ft. of building penetration unless local code specifies less than 15 feet.
4. Customer shall install adequate grounding in accordance with the NEC, NESC and local codes. See section 10.2 for grounding recommendations.
5. If concrete patio is poured, install sleeve around riser conduit.
6. Customer shall supply & install approved slip joint on all conduit risers. (NEC 300.5 (J))
7. Top of meter enclosure shall be dedicated for source conductors. Underground service source conductors shall use the right or left knockouts in bottom of enclosure. Metering enclosures equipped with a bypass handle, source conductors shall pass on the opposite side of the enclosure from the bypass handle.
8. Load conductors shall not cross over source conductors.

10.15 – Meter & Breaker Stand Installation

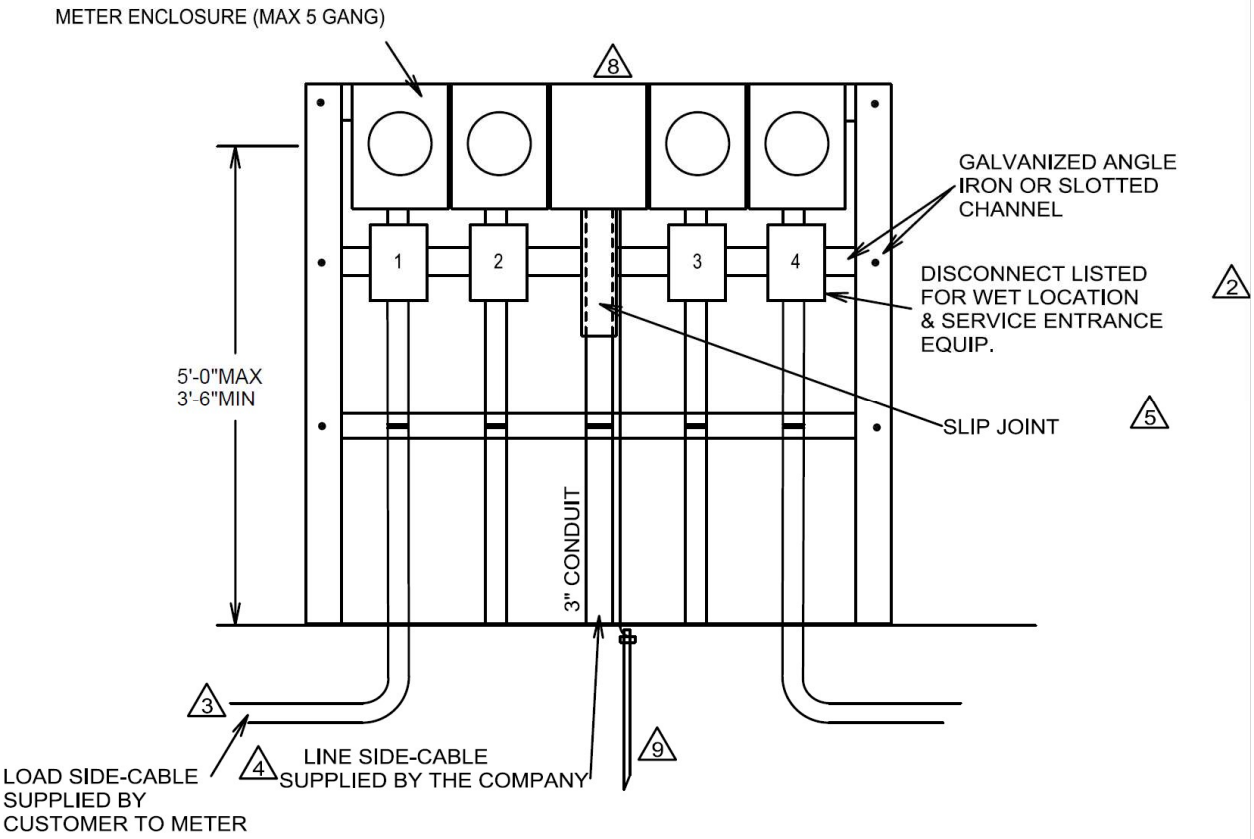


Notes:

1. This drawing shows a suggested meter & switch support scheme where the customer/developer is taking underground service and the meter is located away from buildings. Actual dimensions & equipment are left to the discretion of the customer/developer.
2. It is required that the customer/developer install a service disconnect at this location. (NEC 230.82)
3. Trough sized in accordance with NEC 312.6(A) & 366.
4. Customer/developer shall install service conductors from the meter to customer/developer's facilities in accordance with NEC. This usually consist of installing NEC approved conduit steel or gray PVC schedule 40 or 80 at a depth of 24".
5. The Company will provide and install one set of service conductors per meter, up to 135 feet in length, from the pole, secondary pedestal or padmount transformer to the meter enclosure.
6. Customer/developer shall provide slip joint NEC 300.5(J), all trenching, backfill and furnish and install NEC approved U.L. listed 3" conduit (gray PVC SCH 40) from the meter to the pole, pedestal, or padmount transformer. Conduit shall be installed in a straight line if possible. If horizontal turns are required, only one horizontal 90-degree turn shall be allowed. If the Company installs conduit, it shall be at the customer/developer's expense.

7. A pull rope shall be provided in the conduit by the customer/developer when customer/developer chooses to install conduit. If the customer/developer's pull rope breaks, it is the customer/developer's responsibility to pull in a new one.
8. Depth to top of conduit shall be a minimum of 30" below final grade. Where rock or extenuating circumstances are encountered see section 10.18
9. 200 amp and larger meter enclosures are required for underground services. No load conductors shall be out the top of the meter enclosure.
10. The service entrance shall be grounded in accordance with the NEC. See section 10.2 for grounding details.

10.16 – Multiple Meter & Breaker Boxes Installation



Notes:

1. This drawing shows a suggested meter & switch support scheme where the customer/developer is taking underground service and the meter is located away from buildings. Actual dimensions and equipment are left to the discretion of the customer/developer.

2. It is required that the customer/developer install a service disconnect at this location. (NEC 230.70)

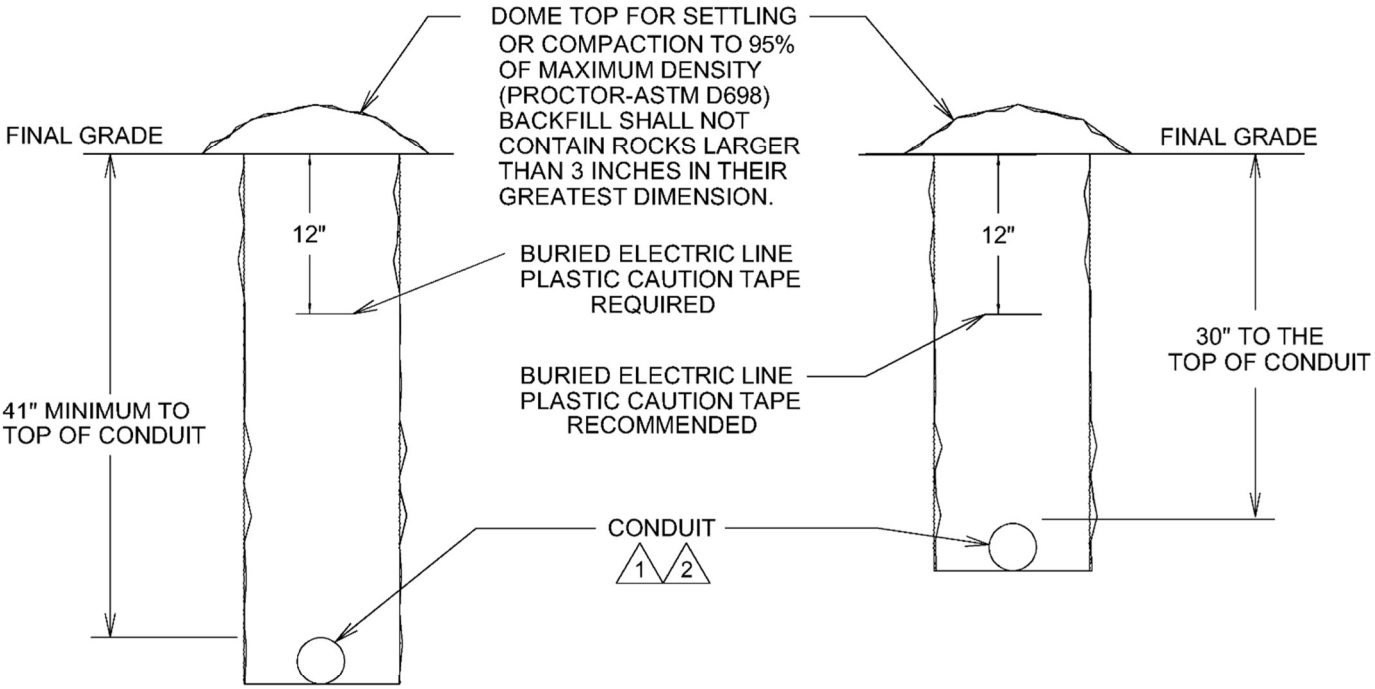
3. Customer/developer shall install service conductors from the meter to customer's facilities in accordance with the NEC. This usually consists of installing NEC approved conduit steel or gray PVC schedule 40 or 80 at a depth of 24".

4. The Company will provide and install one set of service conductors per installation, up to 135 feet in length, from the pole, secondary pedestal or padmount transformer to the meter installation.

5. Customer shall provide slip joint NEC 300.5(J), all trenching, backfill and furnish and install NEC approved U.L. listed 3" conduit (rigid metal or nonmetallic gray PVC SCH 40) from the meter to the pole, pedestal, or padmount transformer. Conduit shall be installed in a straight line if possible. If horizontal turns are required, only one horizontal 90-degree turn shall be allowed. If the Company installs conduit, it shall be at the customer/developer's expense.

6. A pull rope shall be provided in the conduit by the customer/developer when customer chooses to install conduit. If the customer's pull rope breaks, it is the customer's responsibility to pull in a new one.
7. Depth to top of conduit shall be a minimum of 30" below final grade. Where rock or extenuating circumstances are encountered see section 10.18
8. No load conductors shall be out the top of the meter enclosure.
9. The service entrance shall be grounded in accordance with the NEC. See section 10.2 for grounding details.

10.17 – Trench (Cross Section)

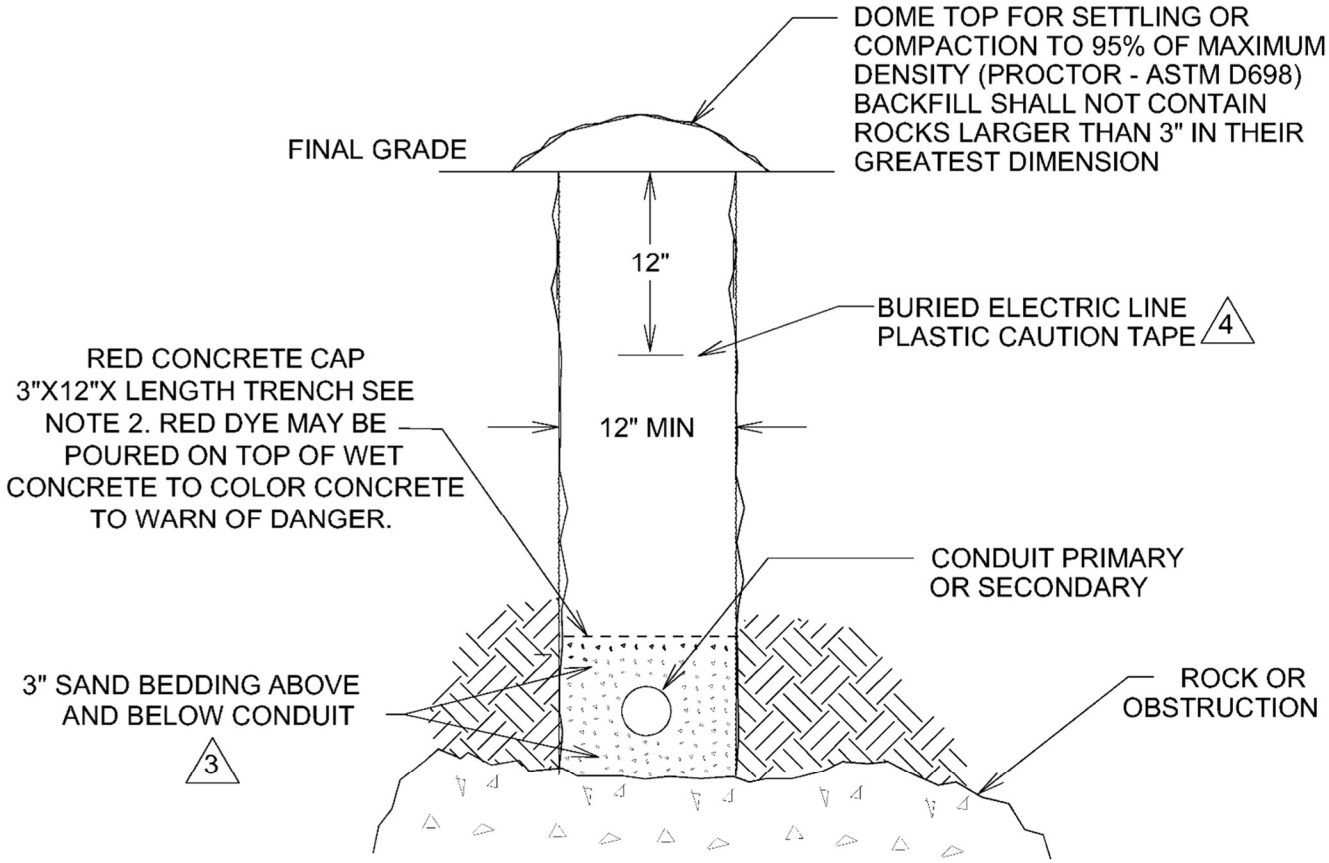


CONDUIT INSTALLATION FOR PRIMARY/SECONDARY

CONDUIT INSTALLATION FOR SERVICES

1. Conduit shall be NEC approved rigid conduit, such as or U.L. listed non-metallic gray PVC schedule 40. The conduits shall be free of burrs and have clean bores. Where customer/developers installed conduit interconnects with the Company's conduit, customer/developer shall not use half sizes. (EG. 2 ½", 3 ½", etc.)
2. Conduit Sizing: See Section 6 - Underground Construction (Pg. 33).
3. Installation shall conform to NESC, NEC, local codes, and this standard. Multiple conduit installations shall have the conduits separated by a maximum of 4 inches between conduits.

10.18 - Trench Cross Section in Rocky Areas



TYPICAL SECONDARY/SERVICE AND PRIMARY TRENCH

Notes:

In certain areas, rock or other obstructions may be present which could make it impractical to provide a trench to the required minimum depth as shown. In such cases:

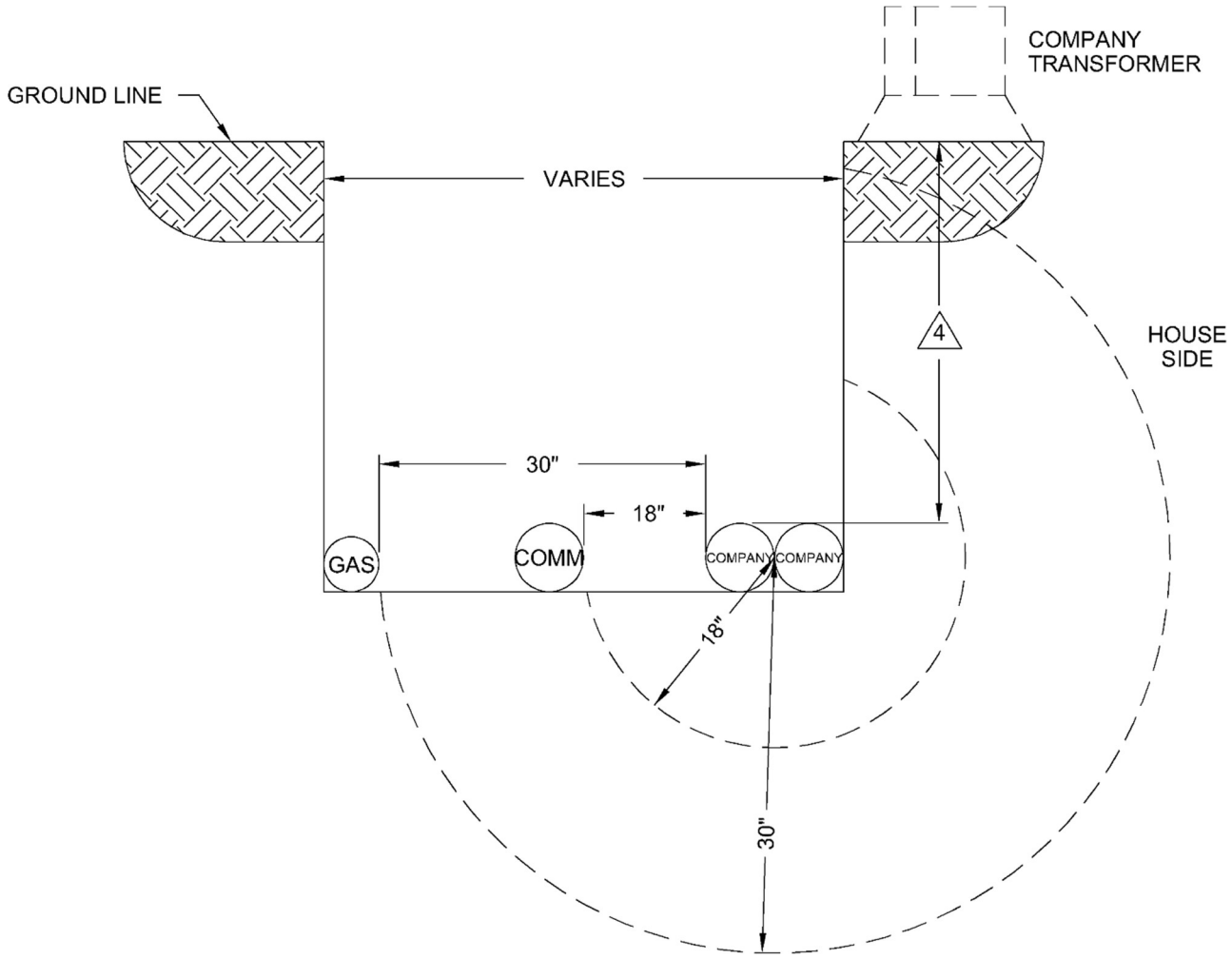
1. The depths shall be as close as possible to depths in section 10.17.
2. When depth shown in section 10.17 cannot be obtained:

	Voltage	Minimum depth to top of conduit below final grade	
SEC/SVC	Below 600V	24” Bedded in sand	12”-23” Encased in red concrete
Primary	Above 600V	30” Bedded in sand	12”-29” Encased in red concrete
Concrete encasement shall be red concrete 3” above and below 6” side to side. Encasement shall be poured separately and not contact a traveled surface (E.G. paved street, driveway, parking lot, etc.)			

3. A 3” layer of sand shall be installed above and below the conduit. This will keep rock from damaging conduit when backfill is compacted.
4. Plastic caution tape for buried electric lines shall be installed 6”-12” below final grade.

5. All conditions set forth in section 10.17 notes and Section 6 shall also apply to these instructions.
6. Joint trenching is a good way for a customer/contractor to reduce excavation expenses. If joint trench is desired, contact the Company's local engineering for requirements and considerations.
7. Water or sewer lines shall not be allowed in a joint trench.
8. Installation shall conform to NESC, NEC, local codes and this standard.

10.19 – Trench (EKM, EMM, EMW Joint Trench)

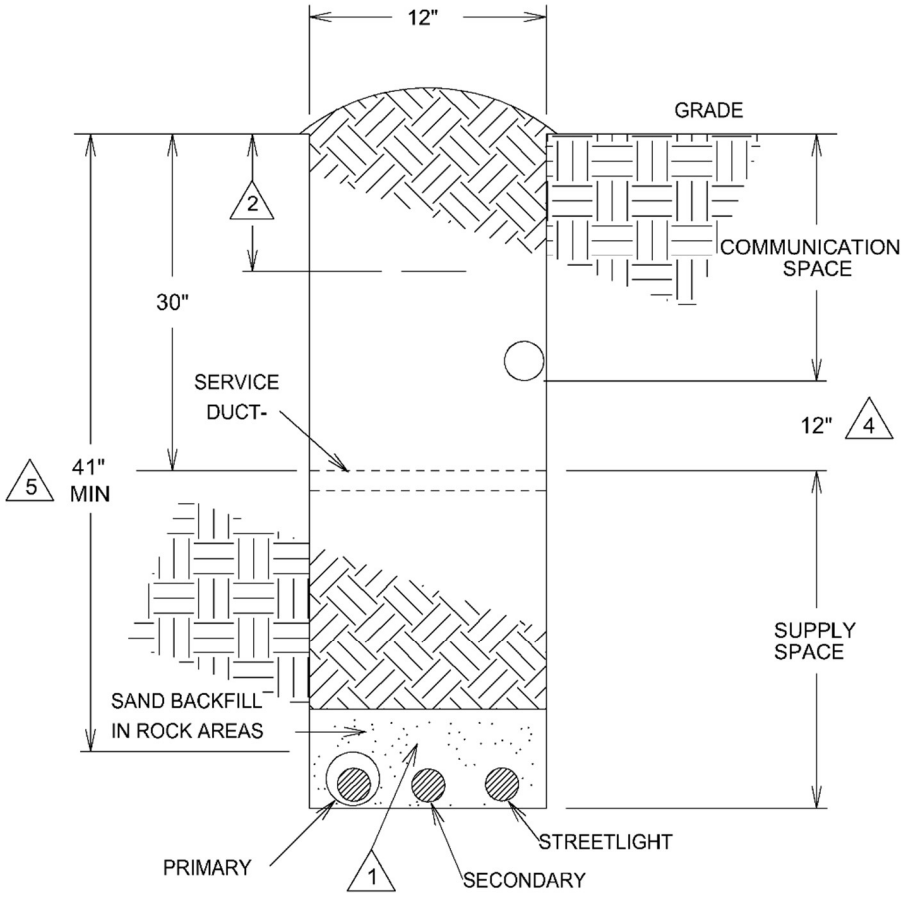


Notes:

1. Do not install any conduit above Company conduit.
2. Open trench inspection is required. Call Company for inspection.
3. Foreign service conduits to be a minimum of 18” away from Company. 30” for gas required

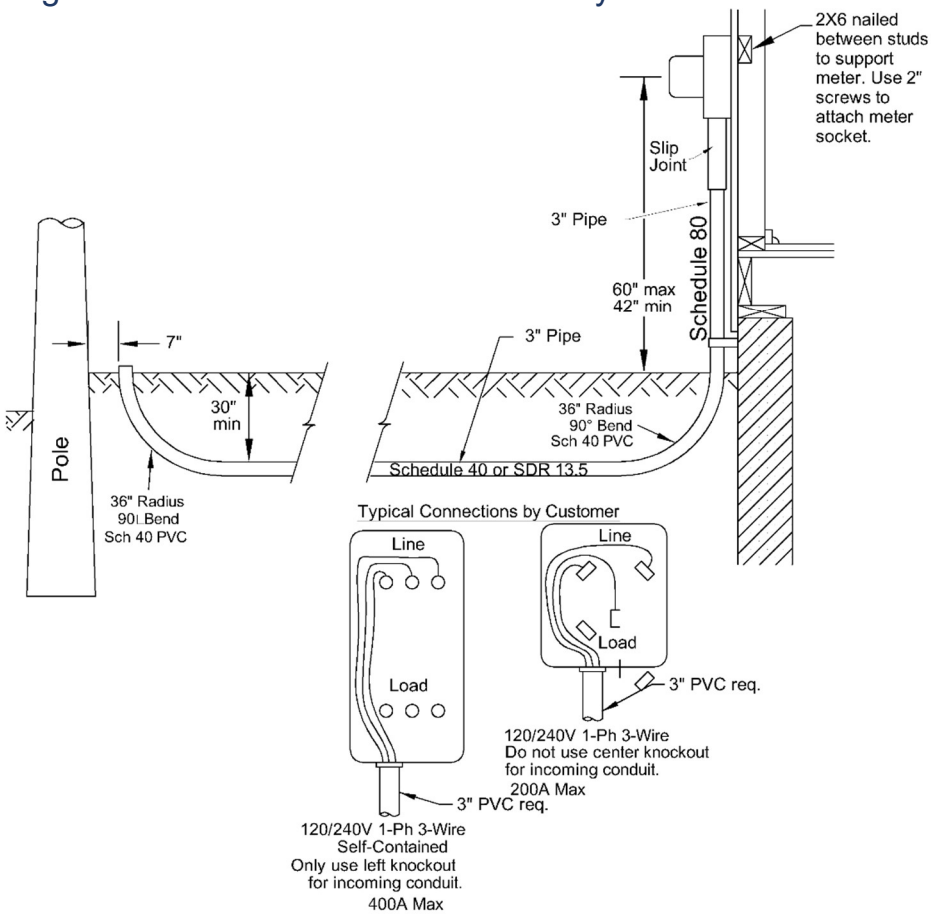
4. 30” is required for services and 41” for primary and secondary.

10.20 – Trench (EKC Joint Trench)



1. A 3” minimum layer of sand shall be installed above and below the conduit.
2. Marker tape installed 6”-12” below grade.
3. Gas, sewer and water lines shall not be installed in joint trench.
4. Exception: lesser separation may be used where the parties involved concur: (NESC 320.B.2) exceptions shall be made in writing and all copies given to all parties.
5. Special depth conditions apply in rock see 10.18.

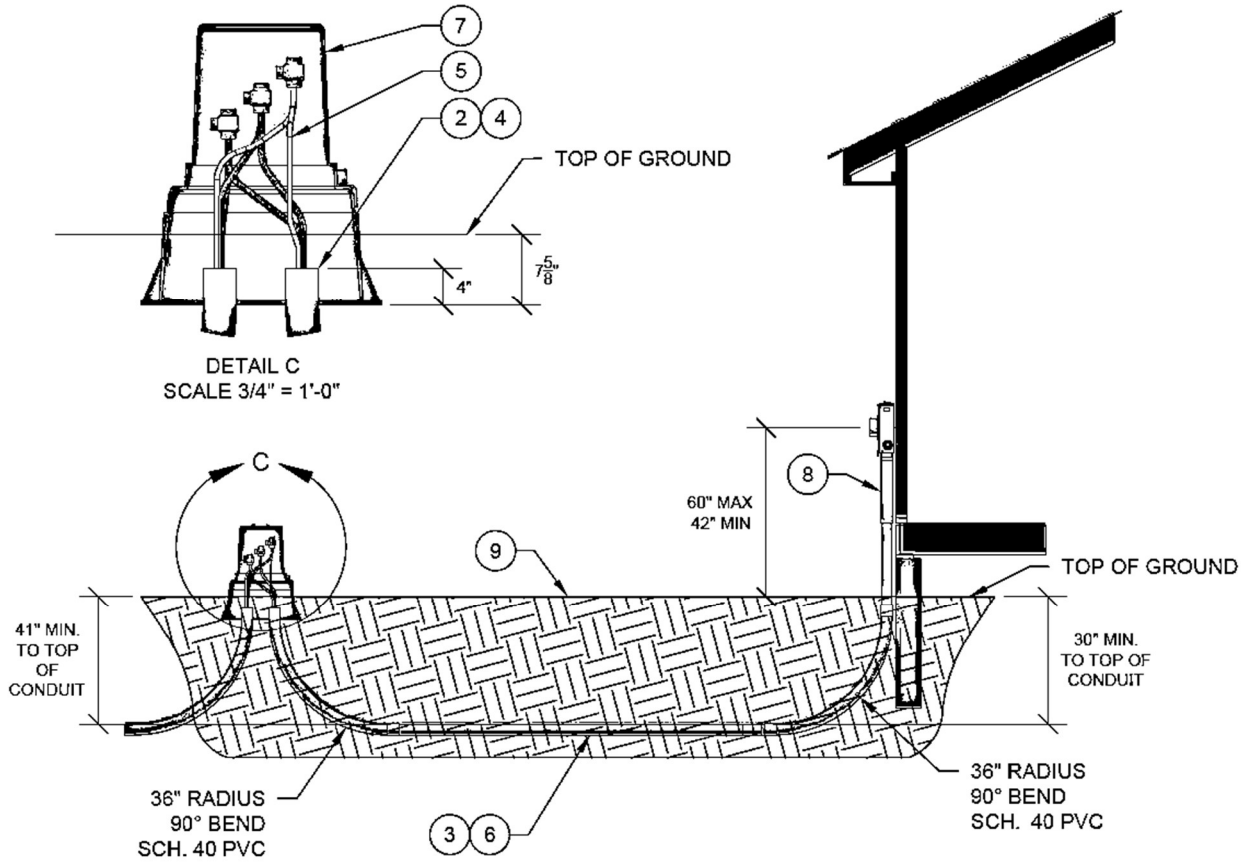
10.21 – Underground Service Overhead Secondary



Notes:

1. Approved meter socket furnished and installed by customer/developer.
2. Insulated bushing furnished and installed by customer/developer.
3. Position prefabricated conduit slip joint to compensate for soil settling. Leave sufficient slack in service conductors to allow joint to work.
4. Do not use center knockout for incoming conduit.
5. All conduit-electrical plastic whole inch size conduit furnished, properly installed, owned and maintained by customer. Company will inspect before backfilling.
6. Commercial customers must provide and install cable. Leave enough cable to go to top of the pole.

10.22 – Pedestal Installation

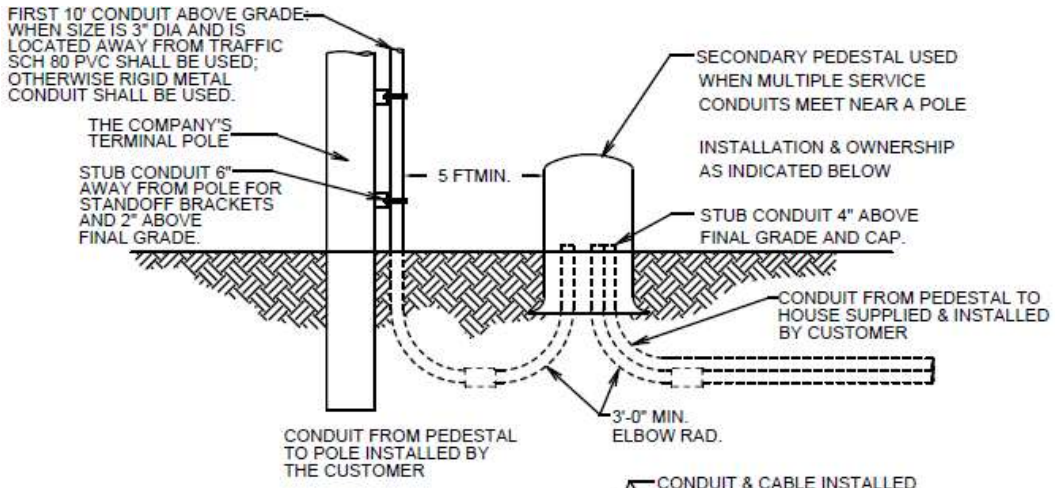


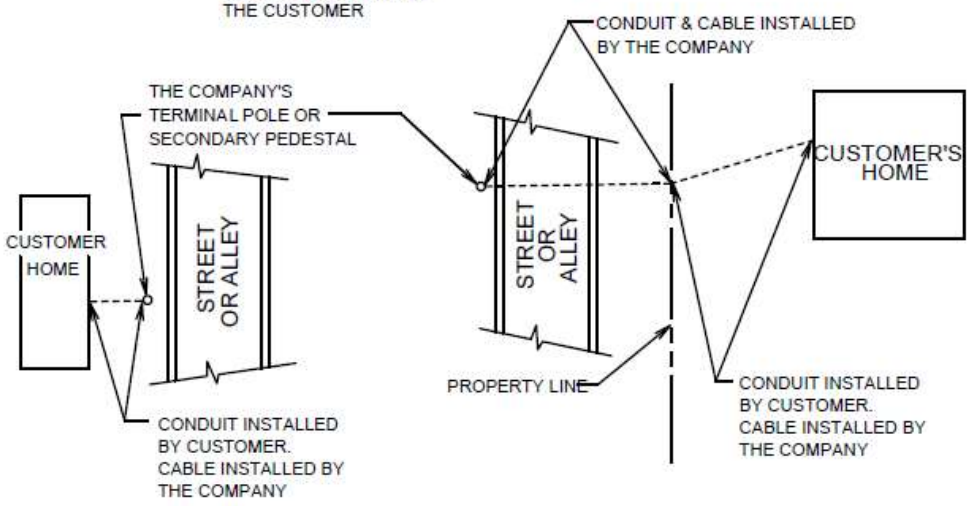
Notes:

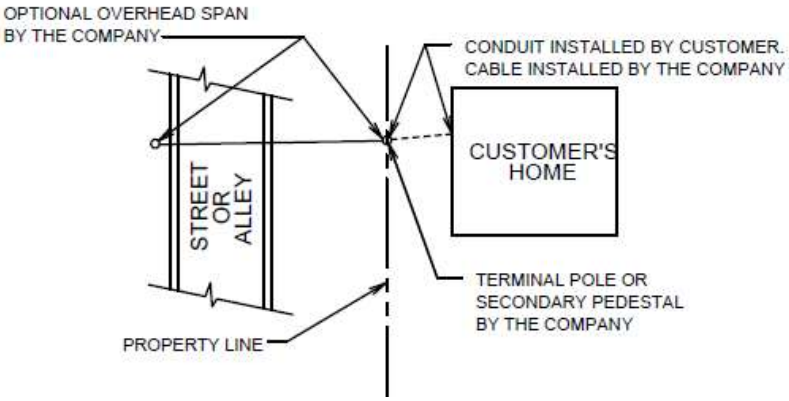
1. Conduit Requirements
   NEC approved rigid conduit (U.L. listed nonmetallic gray PVC SCH 40 or SCH 80) shall be installed from the meter to Company pedestal location.
2. Conduit shall be stubbed up 4 inches above base of pedestal and capped at the location designated by the company.
3. The conduit shall be installed in a straight line if possible. Conduit runs are allowed no more than 3 bends total. Only two vertical 90º bends are allowed. If a horizontal turn is needed, one horizontal bend up to 90º.
4. A pull rope shall be provided in the conduit by the customer/developer. If the pull rope breaks, it is the customer's responsibility to pull in a new one.
5. The Company shall install and own one set of service conductors (per meter enclosure) up to 135 ft. in length from the pole, secondary pedestal, or padmount transformer of the distribution system to the meter enclosure.
6. Depth to top of conduit shall be a minimum of 30 inches. If rock or extenuating circumstances are encountered see section 10.18 for details.
7. Secondary pedestal shall be used as a junction cabinet for conduits and conductor where two or more services converge to one riser pole. Secondary pedestal shall be

placed in the easement in the direction of the pole line. Contact the Company for the location of the secondary pedestal.

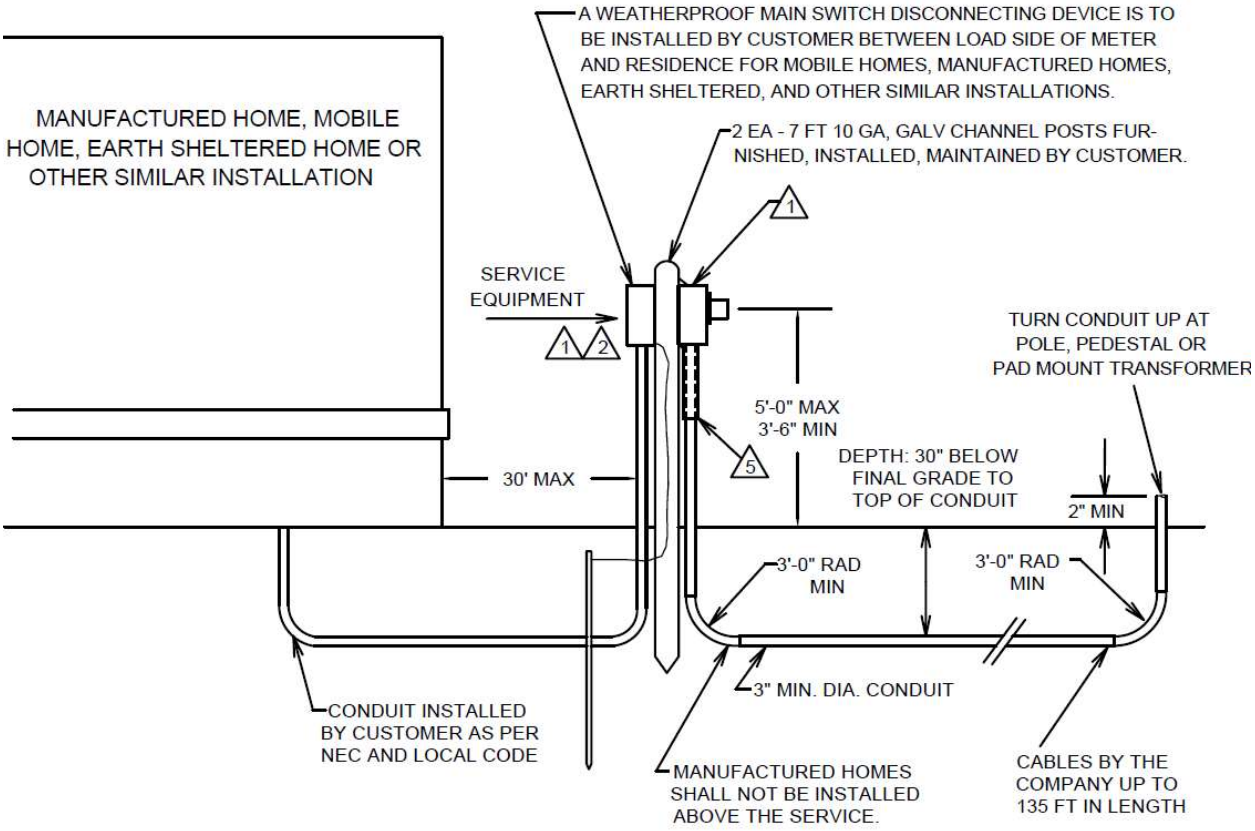
8. Customer to supply approved slip joint.
9. Backfill compaction for conduit trench should be to 95% of maximum density (proctor – ASTM D698).
10. For working clearance around meters see section 10.8
11. Party installing pedestal shall install ground rod.







10.23 – Service to Mobile and Earth Sheltered Homes

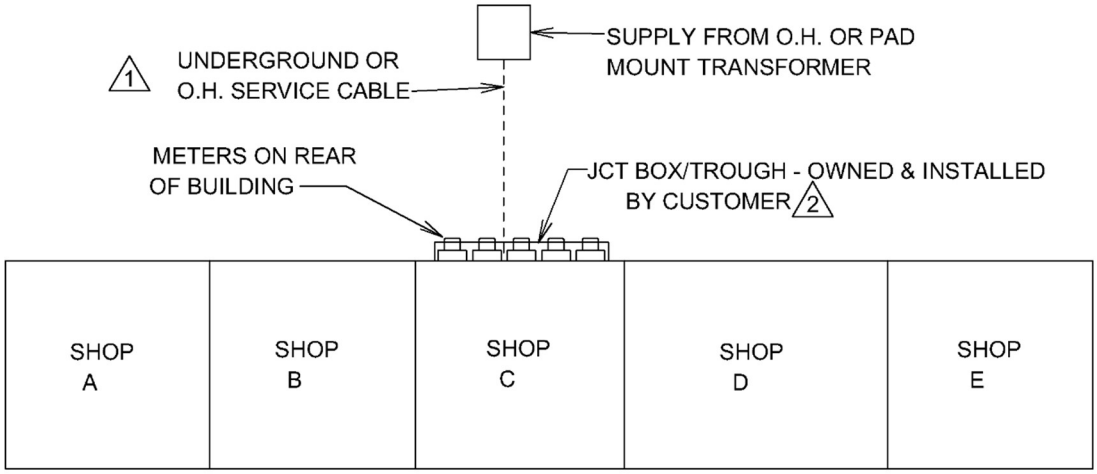


Notes:

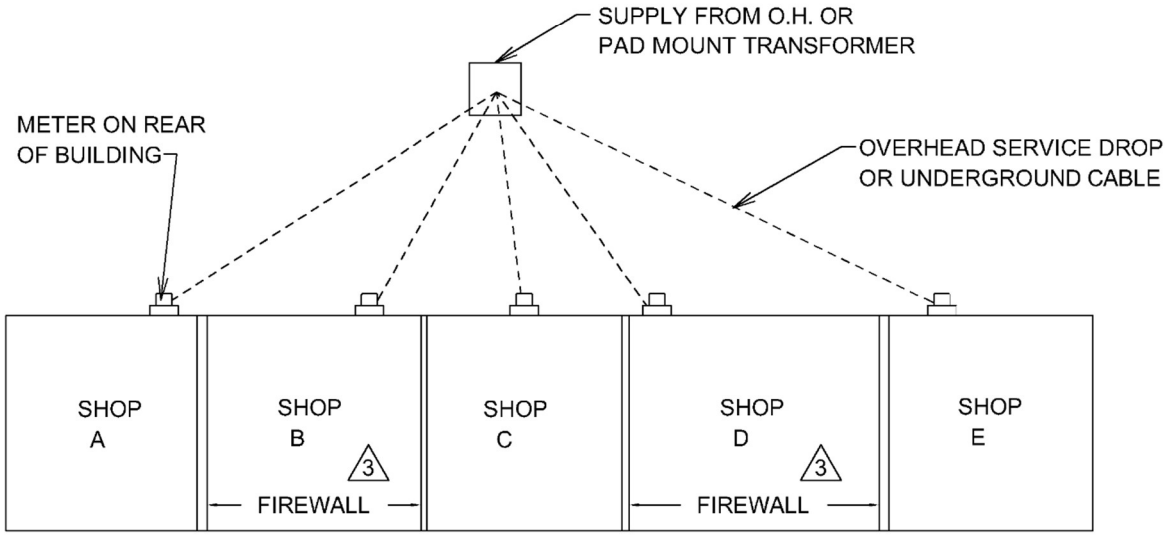
1. The customer will supply Company approved meter socket. Customer/developer shall supply all equipment except the meter and cable from the meter to Company facilities. Commercially available U.L. listed meter pedestal with main breaker may be acceptable. Contact the Company's local service center for approval.
2. Service equipment shall be grounded. See section 10.2 for details.
3. Customer/developer shall provide all trenching, backfill and furnish and install NEC approved rigid conduit from the meter to pole, padmount transformer, or easement.
4. The customer/developer shall coordinate the installation of the service conduit with Company crews during installation of primary cable, transformers, and pedestals.
5. Conduit size shall be a minimum of 3" for services. Customer/developer shall install approved slip joint on conduit to allow for ground movement NEC 300.5(J).
6. Depth to top of conduit shall be a minimum of 30 inches below final grade. Where rock or extenuating circumstances are encountered see section 10.18. In all cases the installation shall conform to NEC, NESC, local codes and this standard.
7. The customer/developer's conduit shall be installed in a straight line if possible. If horizontal turns are required, they shall not exceed equivalent of one 90-degree turn.
8. The customer/developer shall install a pull rope in the conduit. If the customer/developer's pull rope breaks, it is the customer/developer's responsibility to pull in a new one.

9. The Company will install and own one set of service cables up to 135 feet in length from the pole, secondary pedestal, or padmount transformer of the Company distribution system to the customer/developer's meter enclosure.
10. Meter may be installed on manufactured home (at a height of 5'-0" to 3'-6") as long as it has been bolted to a permanent foundation with its wheel & axles removed & permanently attached to all utilities. NEC 50.23(B). Meter may also be installed on the front of an earth sheltered or similar home.
11. Manufactured home shall not be located above the service. This is a safety hazard when manufactured home tie down anchors are installed.
12. The customer/developer may purchase and install a pre-fabricated pedestal that includes the meter socket, main disconnect with protective devices, and (optional) receptacles as a combination unit in lieu of using separate components. If such a pedestal is used, the Company must approve it in advance

10.24 – Continuous Trough for Multiple Meters



SERVICE TO SHOPS WITH OR WITHOUT FIREWALLS BETWEEN EACH SHOP



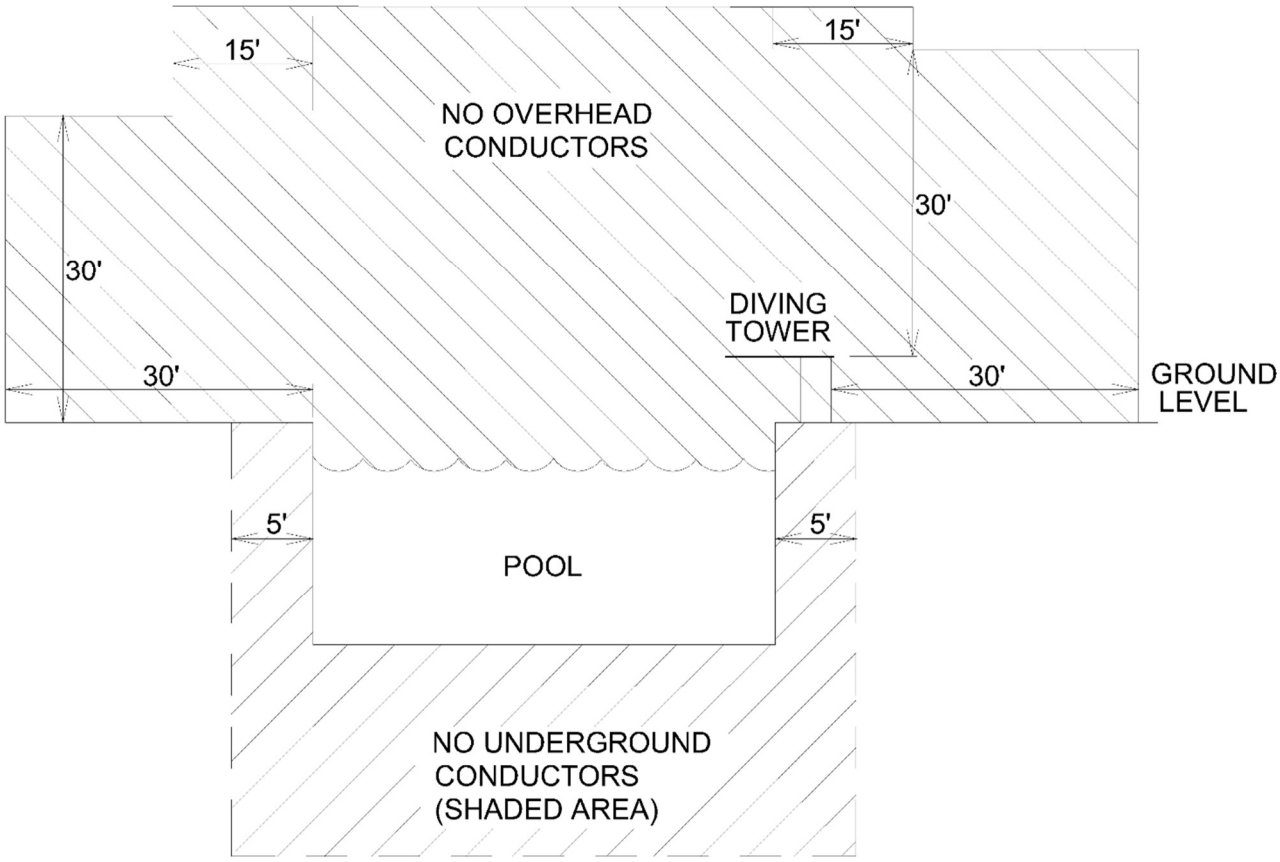
OPTIONAL METHOD - WITH COMPANY APPROVAL
SERVICE TO SHOPS WITH FIREWALLS BETWEEN EACH SHOP

Trough connections will be made by the Company when Company installed wires enter the trough, otherwise connections shall be made by the customer/developer.

1. Conduit by customer/developer.
   a. EKC - provides cable to JCT box/trough.
   b. EKM, EMM, EMW – customer provides cable to JCT box/trough.
2. Conduit and cable from JCT box/trough to each customer/developer by customer.
3. Consult local codes on firewalls.
4. Company may require a main disconnect ahead of junction box/ trough

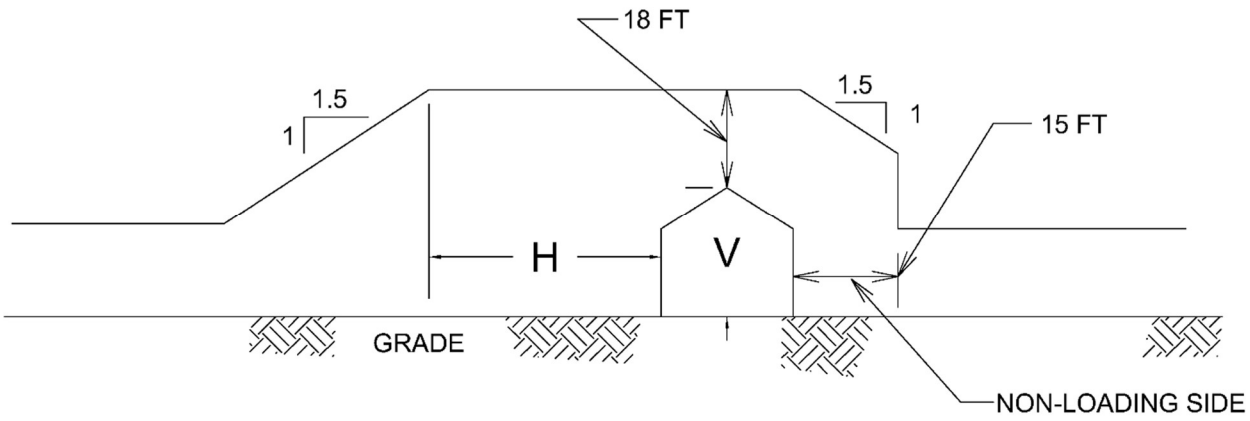
10.25 – Clearances to Bodies of Water

The following rules apply to in-ground pools, spas, and hot tubs, as well as hydro-massage bath tubs, decorative fountains, reflection pools, above ground pools, storable swimming or wading pools, or any other water surface.



1. If any overhead wires are within clearances specified in the drawing above, contact the Company's local service center to see that it is allowed/not allowed per NEC and NESC code.
2. Underground services and underground supply conductors shall not be permitted under a pool or within the area extending 5 feet horizontally from the inside wall of the pool. NEC 680.10
3. If any water surface (above ground pools, in-ground pools, spas, hot tubs, etc.) is being installed over or under existing service, the service shall be moved and relocated at customer's expense.

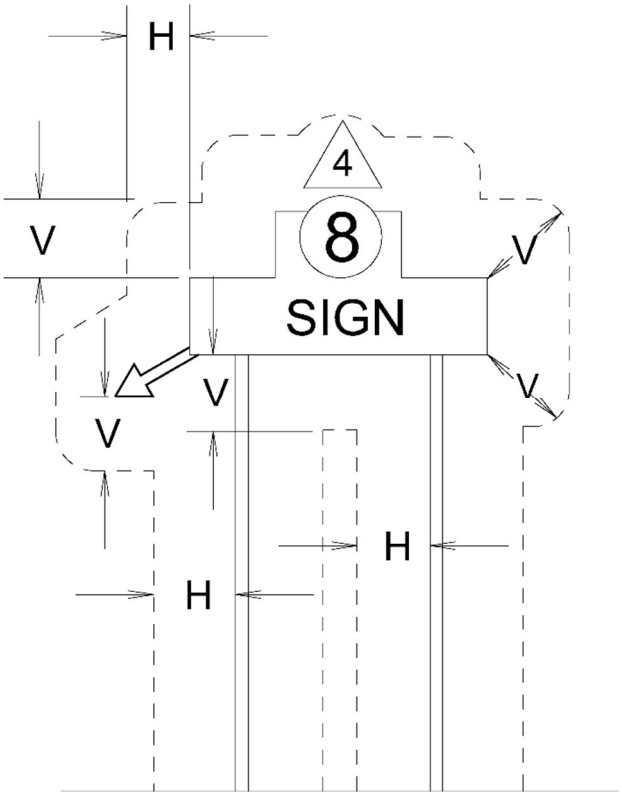
10.26 – Clearances from grain bins



Notes:

1. Grain bins loaded by permanently installed augers, conveyors or elevator systems may be considered as a building except that an 18 ft. vertical clearance shall be maintained above the level of the highest probe part.
2. Grain bins loaded by portable augers, conveyors or elevators
    A. Clearances shall be no less than the values illustrated in the above figure.
    B. Any side of a grain bin is considered to be a non-loading side if it is so designated, or if it is so close to another structure, obstruction or public road that a portable auger, conveyor or elevator is not reasonably anticipated to be used over that side or portion to fill the grain bin.
    C. Where written agreement excludes the use of portable augers, conveyors or elevators from a designated portion of a grain bin, such portion is considered to be a non-loading side.
    D. For messengers, grounded guys, neutral conductors associated with 22kV line to line and below, and multiplex cable of 480 line to line volts and below the clearances can be calculated by the same rules as for building.

10.27 – Clearances from Signs



Clearances to signs, etc.

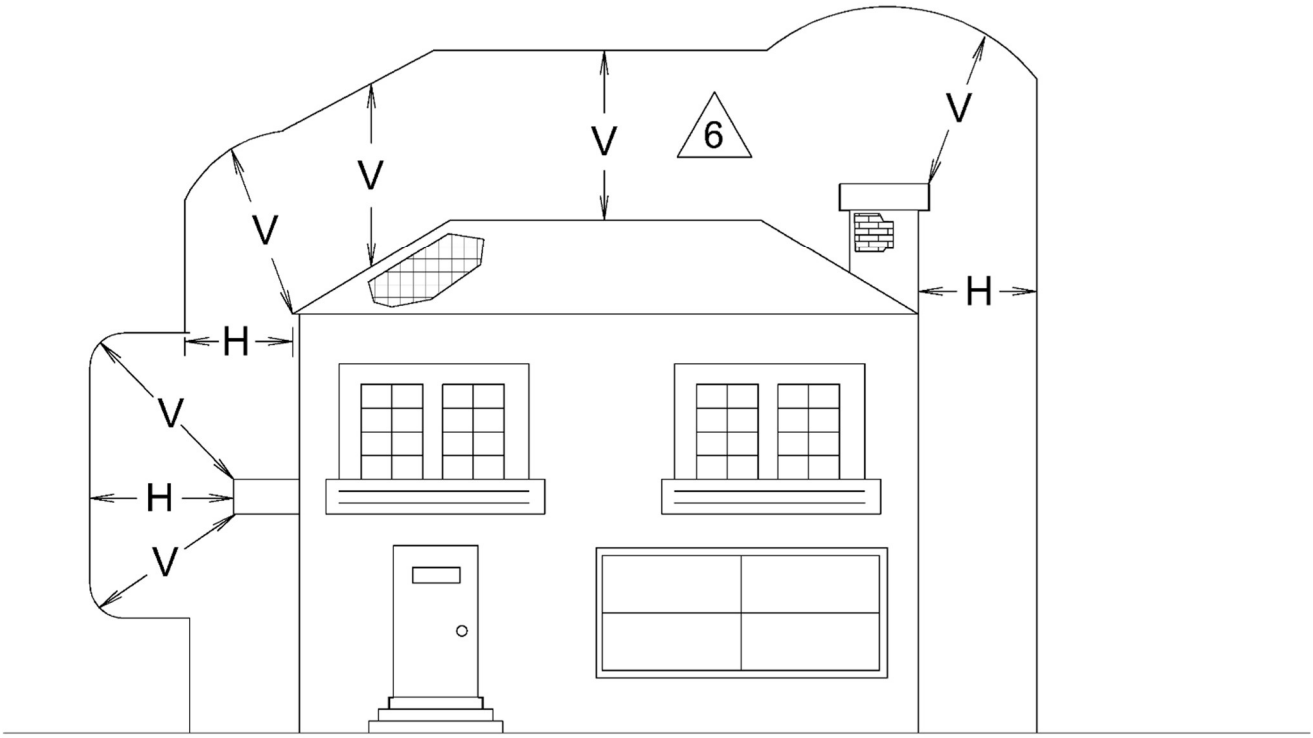
Clearance To	Communication Conductors, Neutrals, Multiplex Supply Cables	Open Supply Line Conductors	Open Supply Line Conductors	Open Supply Line Conductors
See Note 3	120, 240, 480V (Feet)	120, 240, 480V (Feet)	12, 23, 34kV (Feet)	69kV (Feet)
Signs, Chimneys, Antennas, Tanks and other installations not classified as buildings or bridges				
Horizontal	3.5	5.5	7.5	8.5
Vertical Above or Below	3.5	6.0	8.0	9.0
Vertical Above Catwalk	11.0	11.5	13.5	16.0

NESC Table 234-1

Notes:

1. Customers, contractors, and their work equipment shall maintain a minimum clearance of 10 feet from the Company's power lines. State laws require workers to notify the Company when work is necessary at clearances 10 feet or less.
   (K.S.A. 66-1701-1708 & OSHA 1910.333(c)(i)(A)).
   Notification shall be made 7 working days ahead of the time when work is to be started.
   There may be a cost involved to isolate, insulate, or guard power lines.
2. Table values are absolute minimum clearances to structures and shall not be reduced.
3. Voltages specified are line to line.
4. Construction of supply circuits above buildings should be avoided.

10.28 – Clearances of Conductors Adjacent to Buildings but Not Attached to the Building.

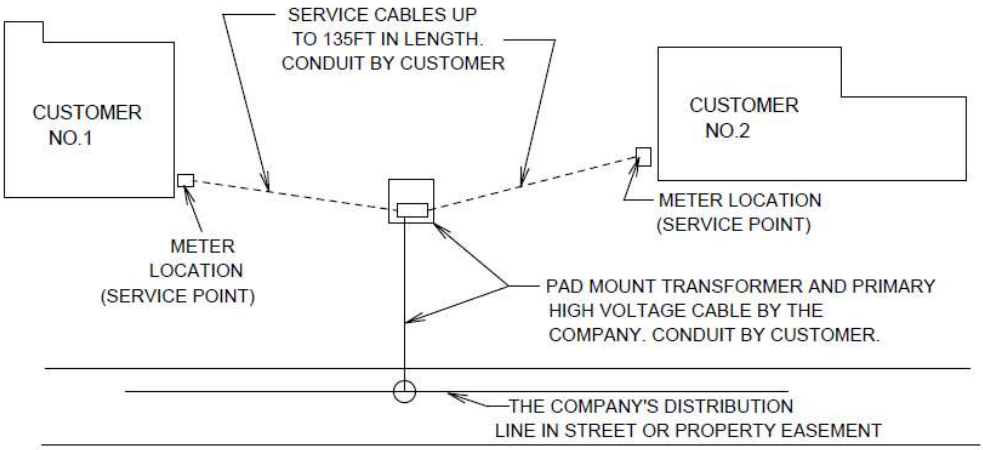


Voltage of Supply Conductors	Horizontal Clearance (H)	Vertical Clearance (V)	Balconies and Flat Roofs
(Volts)	(Feet)	(Feet)	(Feet)
System Neutral Grounded Guys 240,480V Multiplex	5.0	3.5	10.5
240, 480 V Line to Line Open Wire	5.5	11.0	11.5
12,23,34kV Line to Line	7.5	12.5	13.5
69kV Line to Line	8.5	13.5	14.5

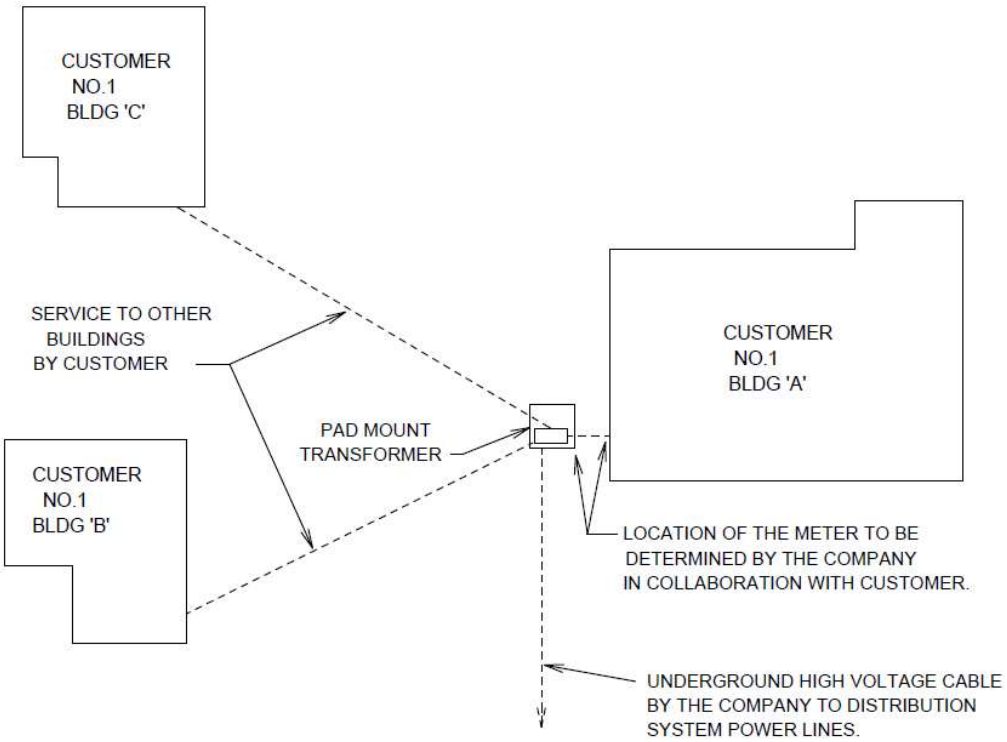
NESC Table 234-1

1. Customers, contractors, and their work equipment shall maintain a minimum clearance of 10 feet from the company's power lines. Kansas law requires workers to notify the company when work is necessary at clearance 10 feet or less. K.S.A.66-1709-1716 & OSHA 1910.333(c)(3)(i)(A) Notification shall be made 7 working days ahead of the time when work is to be started. There may be a cost involved to isolate power lines.
2. Table values are absolute minimum in clearances to structures.
3. Clearance requirements are taken from NESC article 234.
4. Voltages specified are line to line.
5. Customer must also follow NEC codes for clearances and service drops attachments.
6. Construction of supply circuits above buildings should be avoided.

10.29 – Service to Multiple Buildings from One Transformer



SERVICE FROM PADMOUNT TRANSFORMER TO MORE THAN ONE CUSTOMER

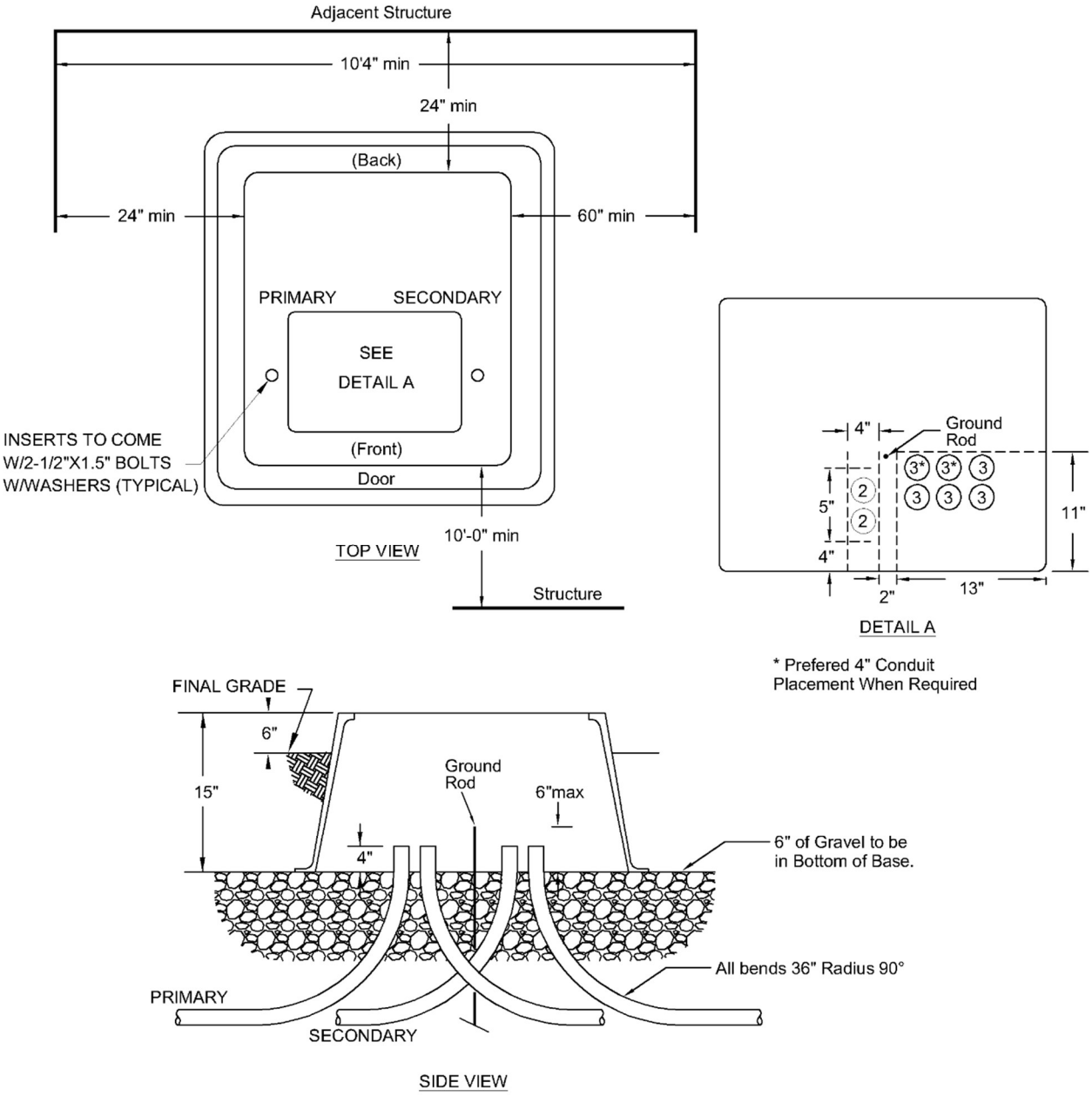


SERVICE TO ONE CUSTOMER BUT MORE THAN ONE BUILDING

Note:

1. Location of meters to be approved by the Company
2. Conduit should be installed on the secondary voltage side of the transformer

10.30 – Box Style Single-Phase Transformer Pad



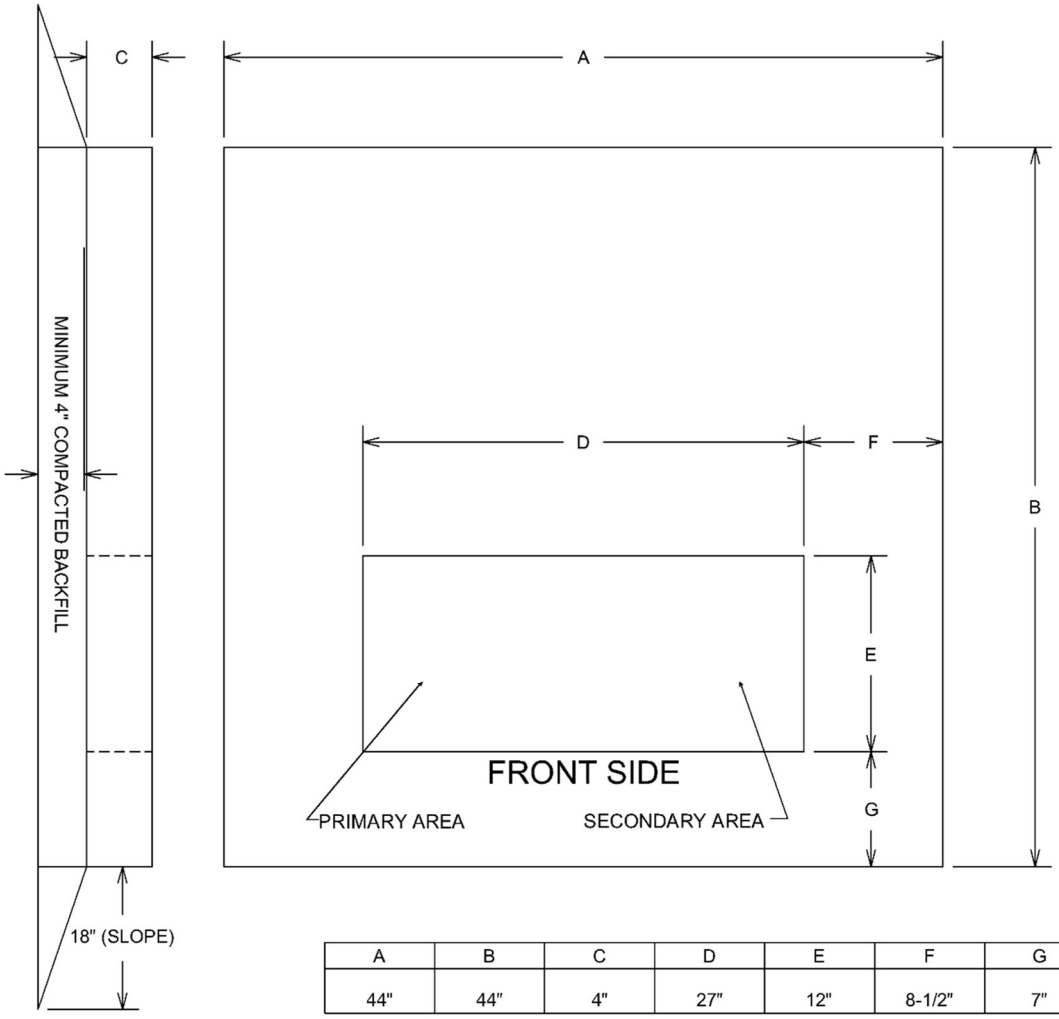
Notes:

1. Conduit installed for future cable runs shall extend at least 24” beyond the base and be capped on both ends. Anchor bolt inserts are positioned for transformers.
2. A minimum width of 10’-4” working space between structures will be required for transformer installation and maintenance.
3. Any fence or wall in front of transformer door less than 10’ away must be removable or openable.

4. May be used for some commercial applications in earth-covered areas where approved by the Company.
5. Single phase transformer "box" pad constructed of polyethylene fiberglass, supplied by the Company.
6. Excavate 12" down and 6" wider than the flange of the box pad base.
7. Pad shall sit 3" - 6" above grade.
8. Pad shall be set on firm level undisturbed earth or firmly compacted level backfill. (the Company defines the firm level and/or firmly compacted level backfill as a pad site topped with a minimum of 6" of crushed rock). Compaction shall be to 95% of maximum density (proctor - ASTM D698).
9. For street side installations, pad and primary/secondary conduits shall be oriented so that the front of the pad, and the front of the transformer after it is installed, faces the street.

10.31 – Single Phase Padmount Transformer Pad

Single Phase Transformer Pad (Up to 167KVA)



A	B	C	D	E	F	G
44"	44"	4"	27"	12"	8-1/2"	7"

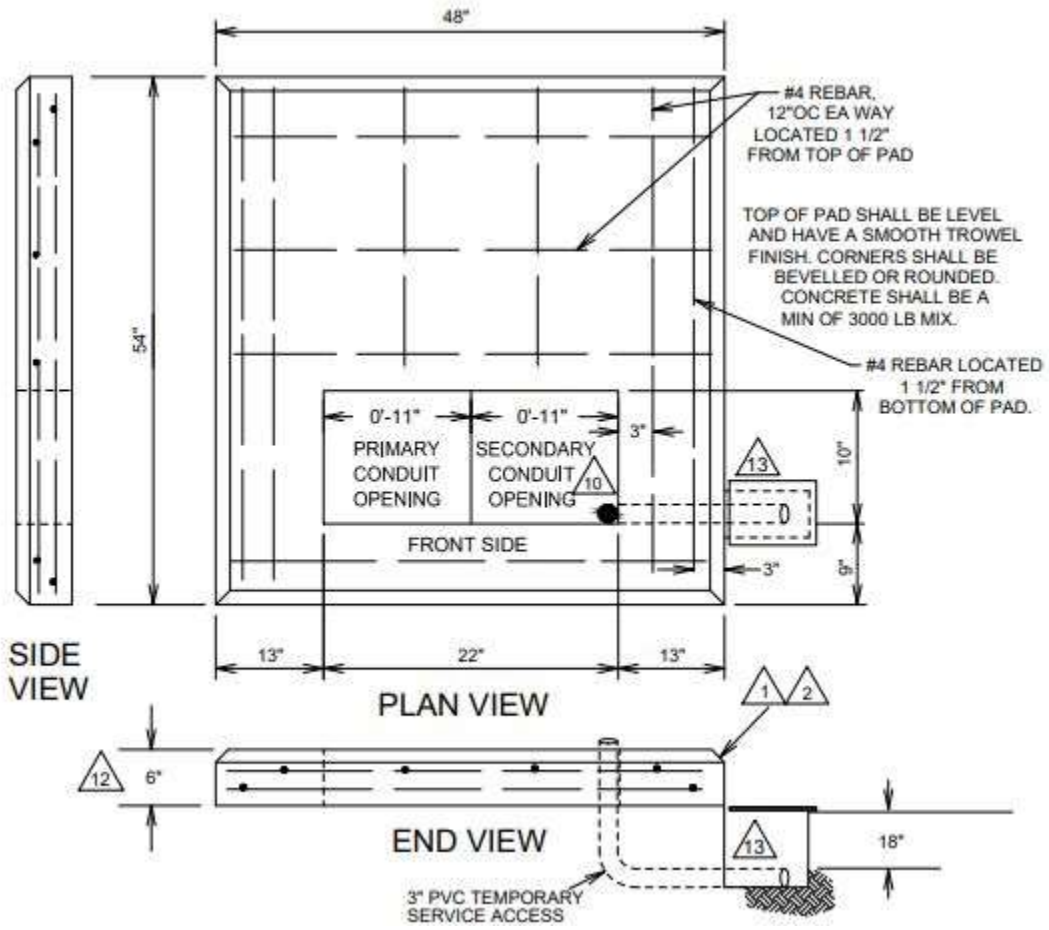
Notes:

1. EKM, EMM, EMW – Only for select applications only. All applications should use box pads.
2. Single phase transformer pad constructed of polyethylene fiberglass, supplied by the Company.
3. This drawing for use with transformers up to 167 KVA. (EKC only) - For 250 KVA transformers, a concrete slab is required.
4. Pad shall be set on firm level undisturbed earth or firmly compacted level backfill. (the Company defines the firm level and/or firmly compacted level backfill as a pad site topped with a minimum of 4" of crushed rock). Compaction shall be to 95% of maximum density (proctor - ASTM D698).
5. For street side installations, pad and primary/secondary conduits shall be oriented so that the front of the pad, and the front of the transformer after it is installed, normally faces the street. However, when the transformer is to be installed between the street and

sidewalk, face the transformer towards the sidewalk. When facing the front of the transformer or the pad, primary goes on the left and secondary on the right (see above).

10.32 – Single Phase Transformer Pads (EKC Territory)

Concrete Pad for 250 KVA 1Ø 12KV Transformer



Notes:

1. Pad provided by customer and location shall be approved by the company.
2. Transformer shall be installed near the customer's service entrance.
3. If transformer pad is installed in an area subject to vehicular traffic, the installation shall be protected with a pipe-rail guard.
4. For proper clearance around the transformer, refer to associated drawings in this section.
5. Contractor shall extend forms down at least 3" below average ground line.
6. Concrete shall be a minimum of 3,000 lb. mix.
7. Top of the transformer pad shall receive a smooth trowel finish. Corners and edges shall be rounded or beveled
8. Conduit opening shall be free and clear of concrete.
9. Tops of conduits shall be flush with the top of the concrete pad.
10. Number of conduits necessary is dependent on the maximum number of service conductors allowed in the low-voltage compartment of the transformer. Install 1"

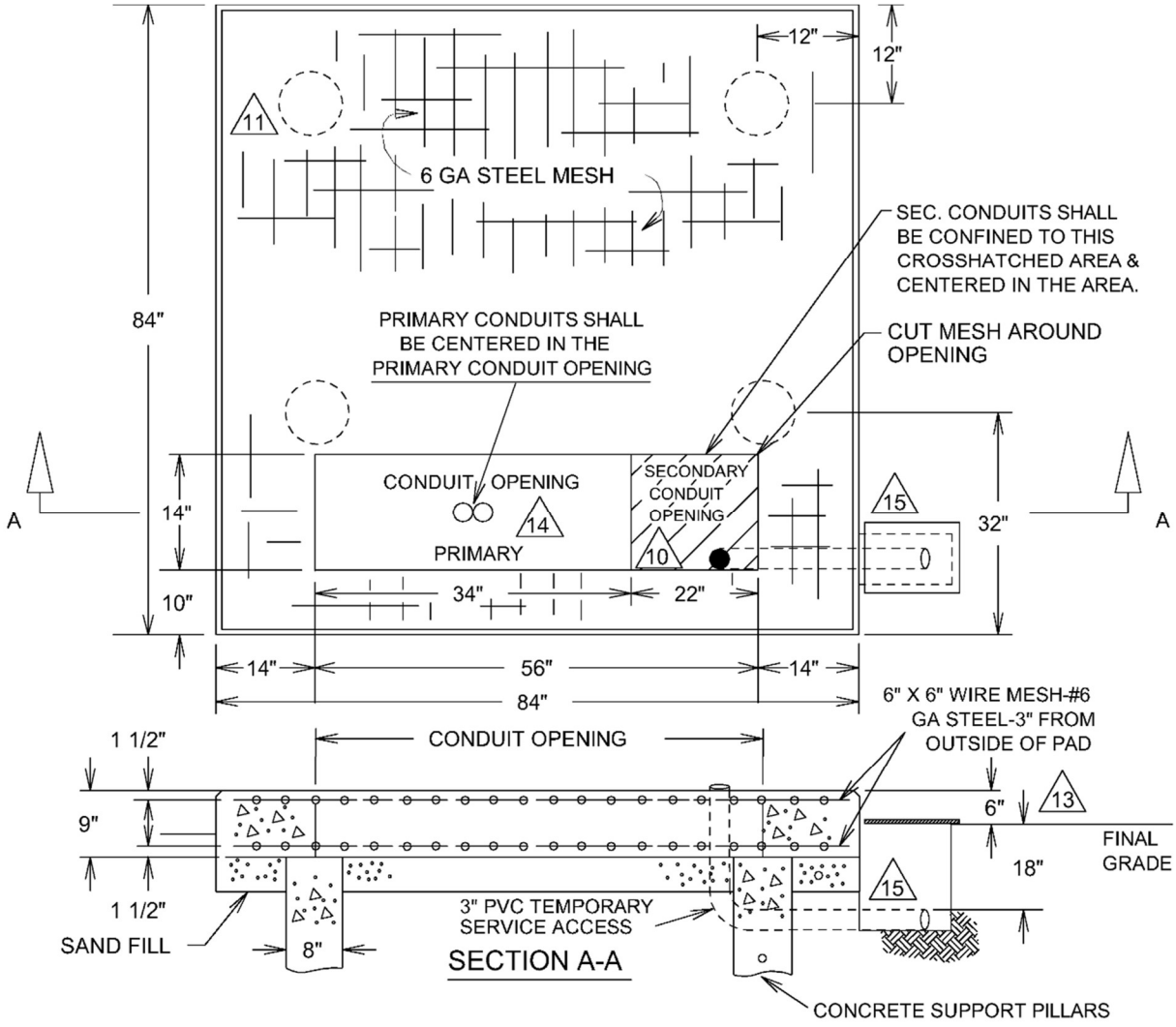
metering conduit from pad to meter enclosure when transformer rated metering is set on adjacent building or stand & metering transformers are in the padmount transformer.

11. The Company reserves the right not to accept the condition of the concrete pad if it fails to meet the requirements stated in this standard.
12. The 6” above grade can be reduced to 4” above finished pavement.

⚠13. Conduit to extend 1’ to 2’ feet beyond edge of pad. Do not backfill. Use minimum ¾” plywood or comparable cover to secure hole.

10.33 – Three Phase Transformer Pads (EKC Territory)

Concrete Pad for 75 – 500 KVA 3Ø 12KV Transformer



Notes:

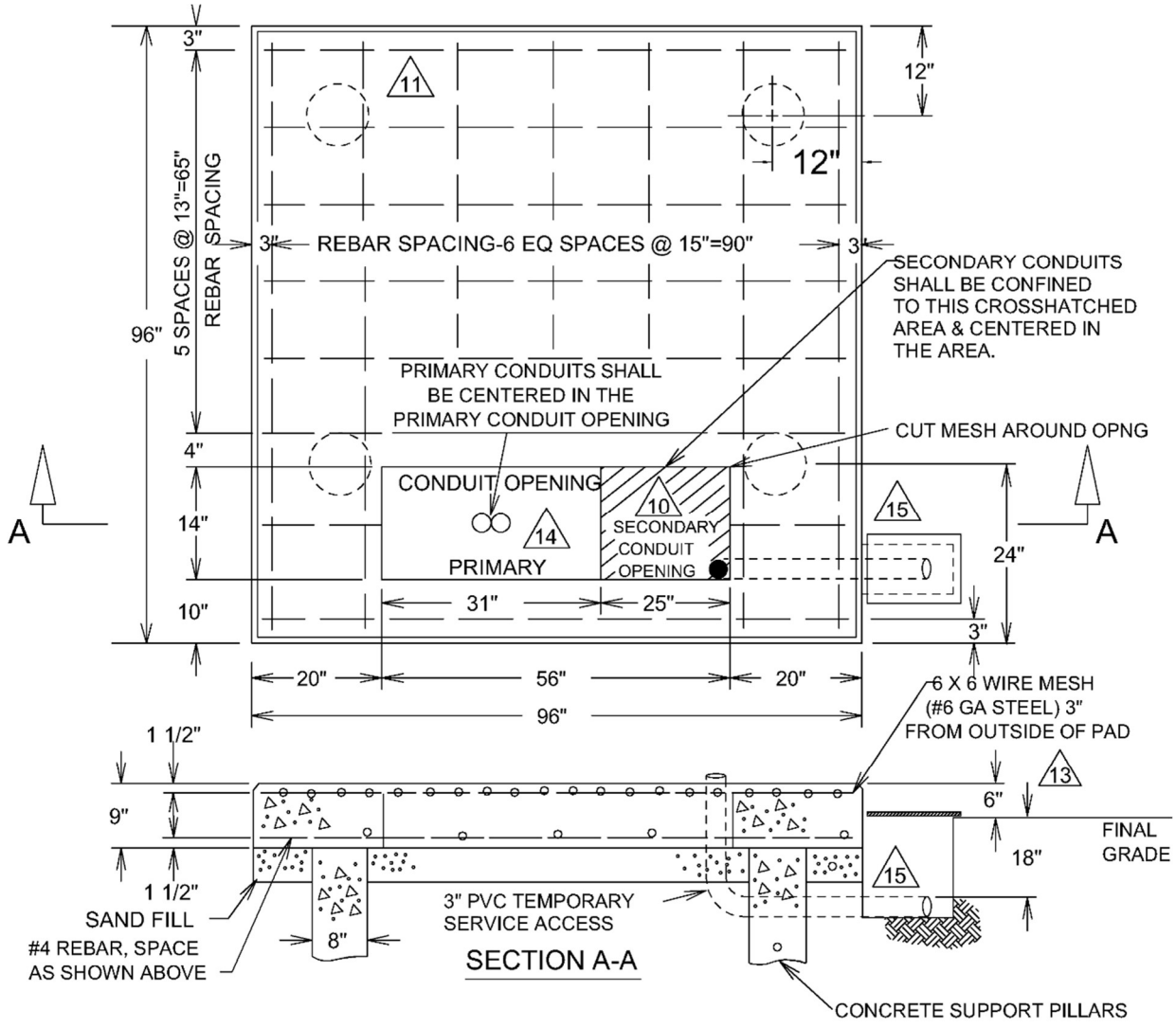
1. Pad location shall be approved by the Company.
2. Transformer shall be installed near the customer's service entrance.
3. If transformer pad is installed in an area subject to vehicular traffic, the installation shall be protected with a pipe-rail guard.
4. For proper clearance around the transformer, refer to associated drawings in this section.
5. Contractor shall extend forms down at least 3" below average ground line.
6. Concrete shall be a minimum of 3,000 lb. mix.
7. Top of the transformer pad shall receive a smooth trowel finish. Corners and edges shall be rounded or beveled
8. Conduit opening shall be free and clear of concrete.
9. Tops of conduits shall be flush with the top of the concrete pad.
10. Number of conduits necessary is dependent on the maximum number of service conductors allowed in the low-voltage compartment of the transformer. Install 1 ¼"

metering conduit from pad to meter enclosure when transformer rated metering is set on adjacent building or stand & metering transformers are in the padmount transformer.

11. Pillars are formed by augering an 8” diameter hole to a depth of undisturbed earth. A separator, such as tar paper, should be placed between the pillar and the pad so that the pad can be leveled at a later time if necessary.
12. The Company reserves the right not to accept the condition of the concrete pad if it fails to meet the requirements stated in this standard.
13. The 6” above grade can be reduced to 4” above finished pavement.
14. Conduit opening dimensions pertain to Howard (2012 & Newer) Transformers. Check with the Company’s local service center to be sure that the opening is the correct size for the transformer designated for the job. Call local service center to confirm pad dimensions before pad is poured.
15. Conduit to extend 1 to 2 feet beyond edge of pad. Do not backfill. Use minimum ¾” plywood or comparable cover to secure hole.

10.34 – Three Phase Transformer Pads (EKC Territory)

Concrete Pad for 750 – 1000KVA 3Ø 12KV Transformer



Notes:

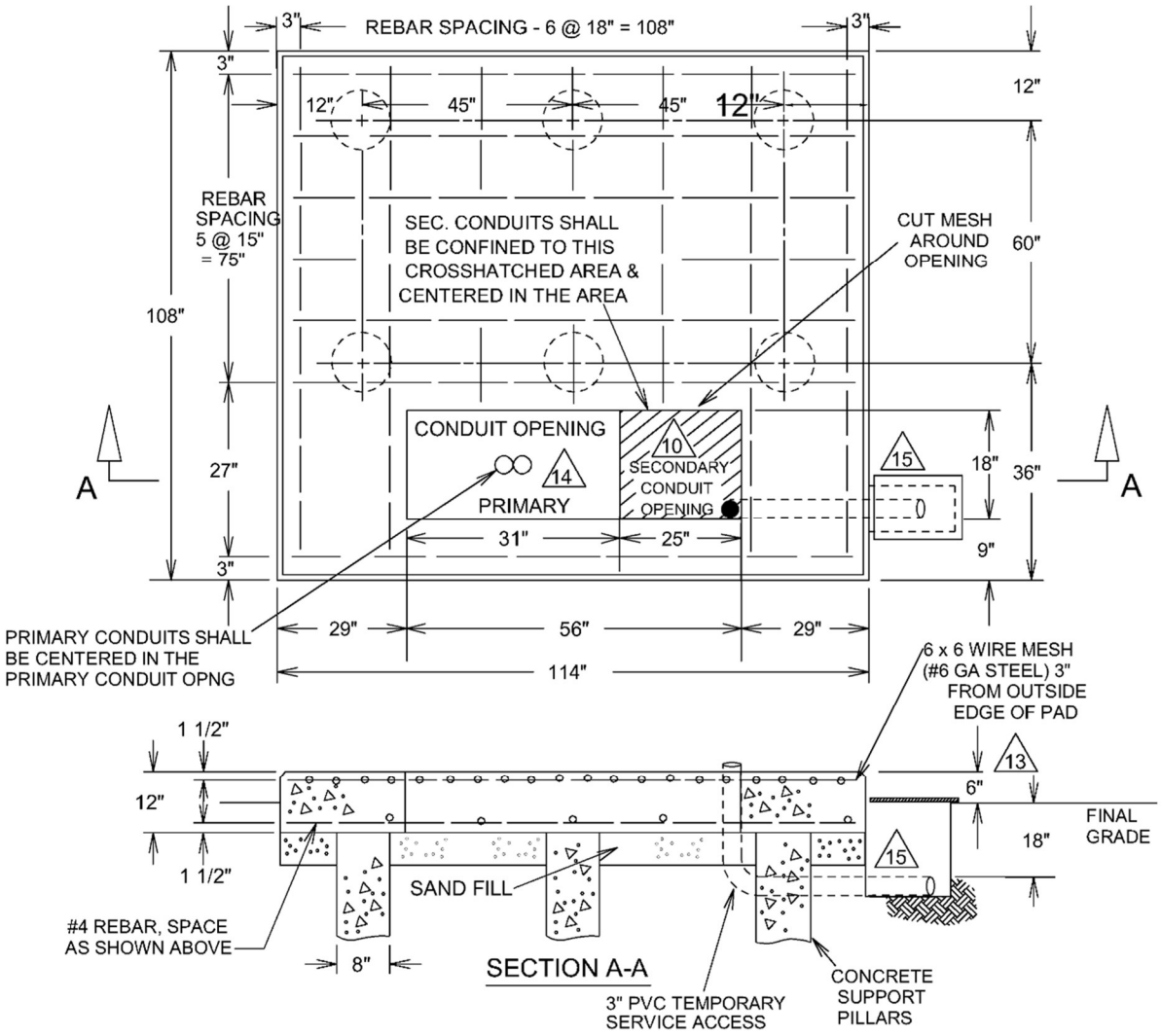
1. Pad location shall be approved by the Company.
2. Transformer shall be installed near the customer's service entrance.
3. If transformer pad is installed in an area subject to vehicular traffic, the installation shall be protected with a pipe-rail guard.
4. For proper clearance around the transformer, refer to associated drawings in this section.
5. Contractor shall extend forms down at least 3" below average ground line.
6. Concrete shall be a minimum of 3,000 lb. mix.
7. Top of the transformer pad shall receive a smooth trowel finish. Corners and edges shall be rounded or beveled
8. Conduit opening shall be free and clear of concrete.
9. Tops of conduits shall be flush with the top of the concrete pad.
10. Number of conduits necessary is dependent on the maximum number of service conductors allowed in the low-voltage compartment of the transformer. Install 1 ¼"

metering conduit from pad to meter enclosure when transformer rated metering is set on adjacent building or stand & metering transformers are in the padmount transformer.

11. Pillars are formed by augering an 8” diameter hole to a depth of undisturbed earth. A separator, such as tar paper, should be placed between the pillar and the pad so that the pad can be leveled at a later time if necessary.
12. The Company reserves the right not to accept the condition of the concrete pad if it fails to meet the requirements stated in this standard.
13. The 6” above grade can be reduced to 4” above finished pavement.
14. Conduit opening dimensions pertain to Howard (2012 & Newer) Transformers. Check with the Company’s local service center to be sure that the opening is the correct size for the transformer designated for the job. Call local service center to confirm pad dimensions before pad is poured.
15. Conduit to extend 1 to 2 feet beyond edge of pad. Do not backfill. Use minimum ¾” plywood or comparable cover to secure hole.

10.35 – Three Phase Transformer Pads (EKC Territory)

Concrete Pad for 1500 – 2500KVA 3Ø 12KV Transformer



Notes:

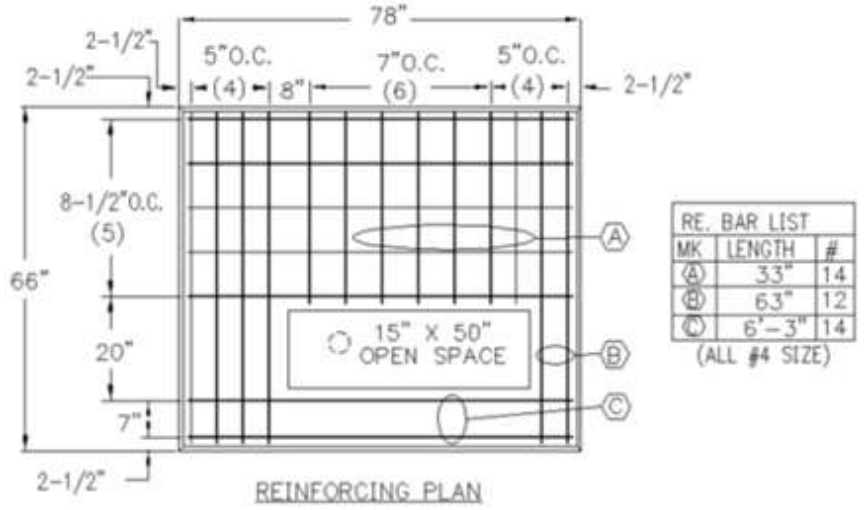
1. Pad location shall be approved by the Company.
2. Transformer shall be installed near the customer's service entrance.
3. If transformer pad is installed in an area subject to vehicular traffic, the installation shall be protected with a pipe-rail guard.
4. For proper clearance around the transformer, refer to associated drawings in this section.
5. Contractor shall extend forms down at least 3" below average ground line.
6. Concrete shall be a minimum of 3,000 lb. mix.
7. Top of the transformer pad shall receive a smooth trowel finish. Corners and edges shall be rounded or beveled
8. Conduit opening shall be free and clear of concrete.
9. Tops of conduits shall be flush with the top of the concrete pad.
10. Number of conduits necessary is dependent on the maximum number of service conductors allowed in the low-voltage compartment of the transformer. Install 1 ¼"

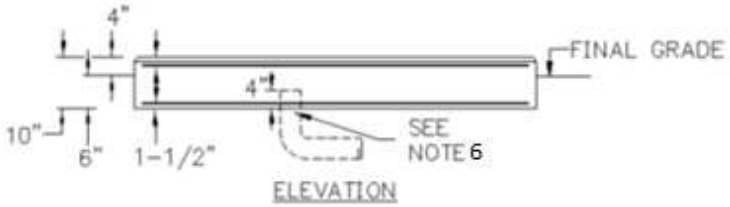
metering conduit from pad to meter enclosure when transformer rated metering is set on adjacent building or stand & metering transformers are in the padmount transformer.

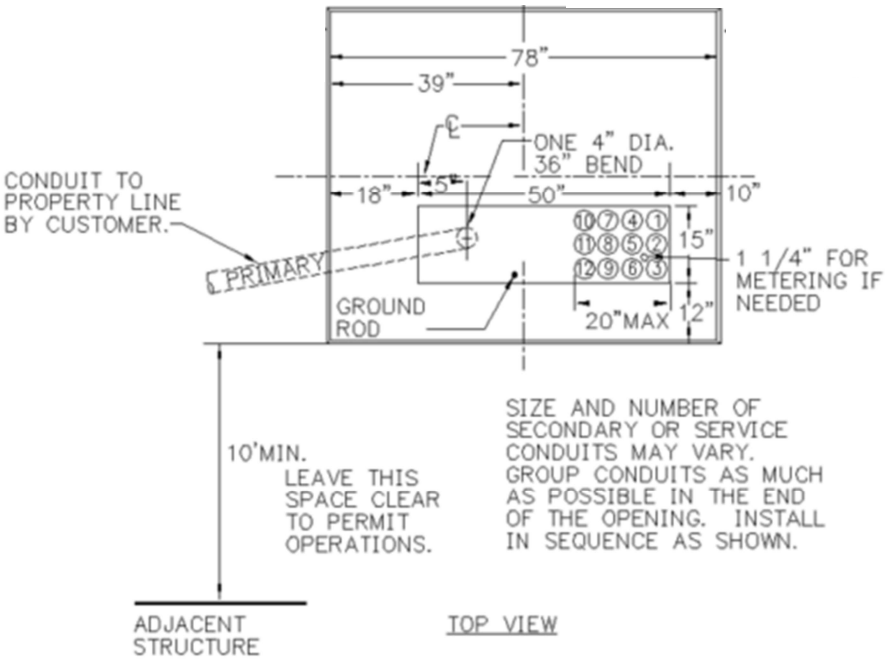
11. Pillars are formed by augering an 8” diameter hole to a depth of undisturbed earth. A separator, such as tar paper, should be placed between the pillar and the pad so that the pad can be leveled at a later time if necessary.
12. The Company reserves the right not to accept the condition of the concrete pad if it fails to meet the requirements stated in this standard.
13. The 6” above grade can be reduced to 4” above finished pavement.
14. Conduit opening dimensions pertain to Howard (2012 & Newer) Transformers. Check with the Company’s local service center to be sure that the opening is the correct size for the transformer designated for the job. Call local service center to confirm pad dimensions before pad is poured.
15. Conduit to extend 1 to 2 feet beyond edge of pad. Do not backfill. Use minimum ¾” plywood or comparable cover to secure hole.

10.36 – Three Phase Transformer Pads (EKM, EMM, EMW Territory)

Cast in Place Concrete Base for 3-Phase Padmount Transformer 75KVA Through 500 KVA





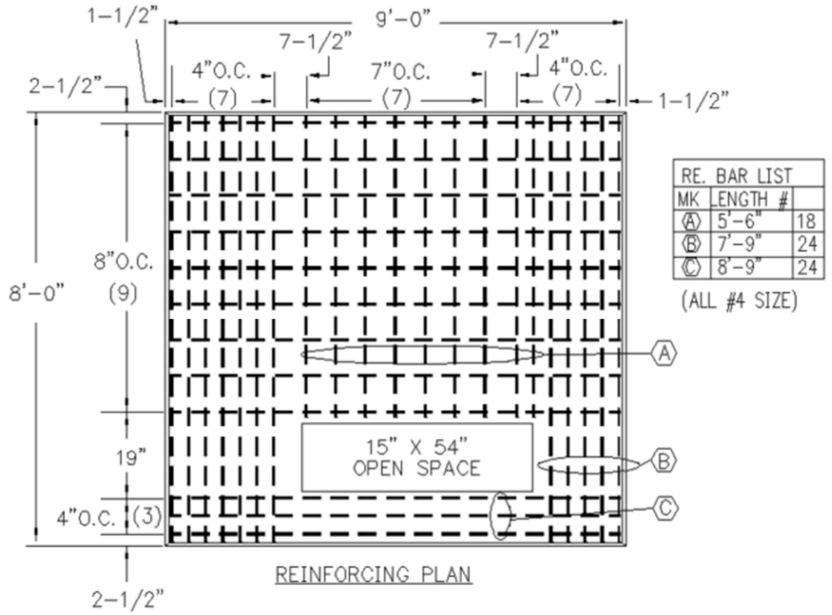


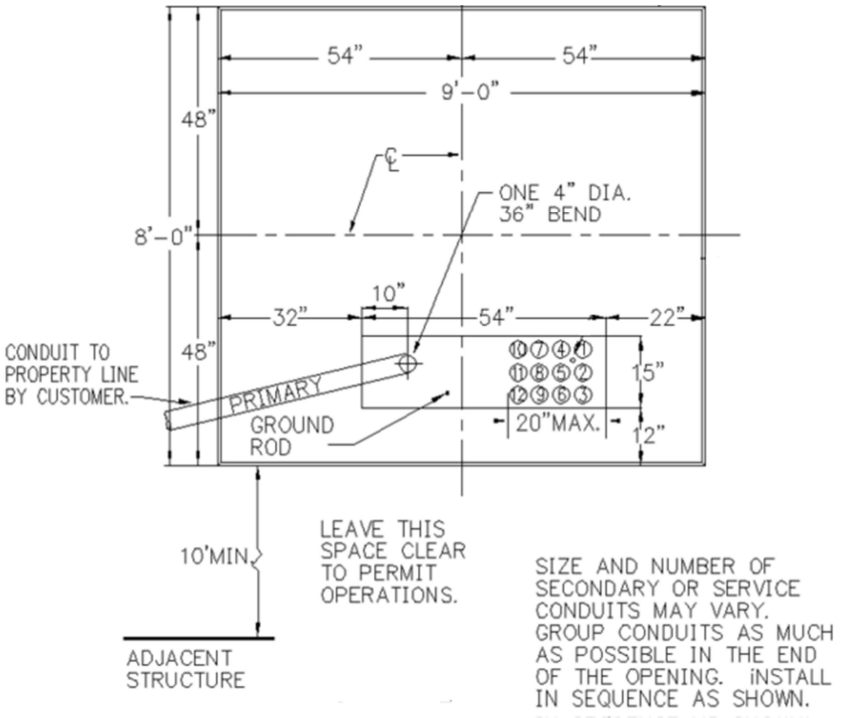
Notes:

1. All concrete shall be air entrained and test 3000 psi (Min.) in 28 days
2. Direction of primary conduit to be provided by Company
3. Any above ground obstructions such as air conditioners, shrubs, plants, fences, gas meters, and gas lines shall not be within 10 feet of the front or 3 ft of the sides of the transformer pad. Clearances must also be followed set forth in drawing 10.42.
4. The sizing of this base is based upon average undisturbed earth. Backfill with compact dirt or AB3 only (do not use gravel) to the bottom of the pad. Install conduits level with the top of the pad and cover the ends of the conduits.
5. Center of the base must be within 15’ of the edge of a paved area for crane access.
6. Conduit shall be 4” above bottom of concrete pad.

10.37 – Three Phase Transformer Pads (EKM, EMM, EMW Territory)

Cast in Place Concrete Base for 3-Phase Padmount Transformer 750KVA Through 2500 KVA

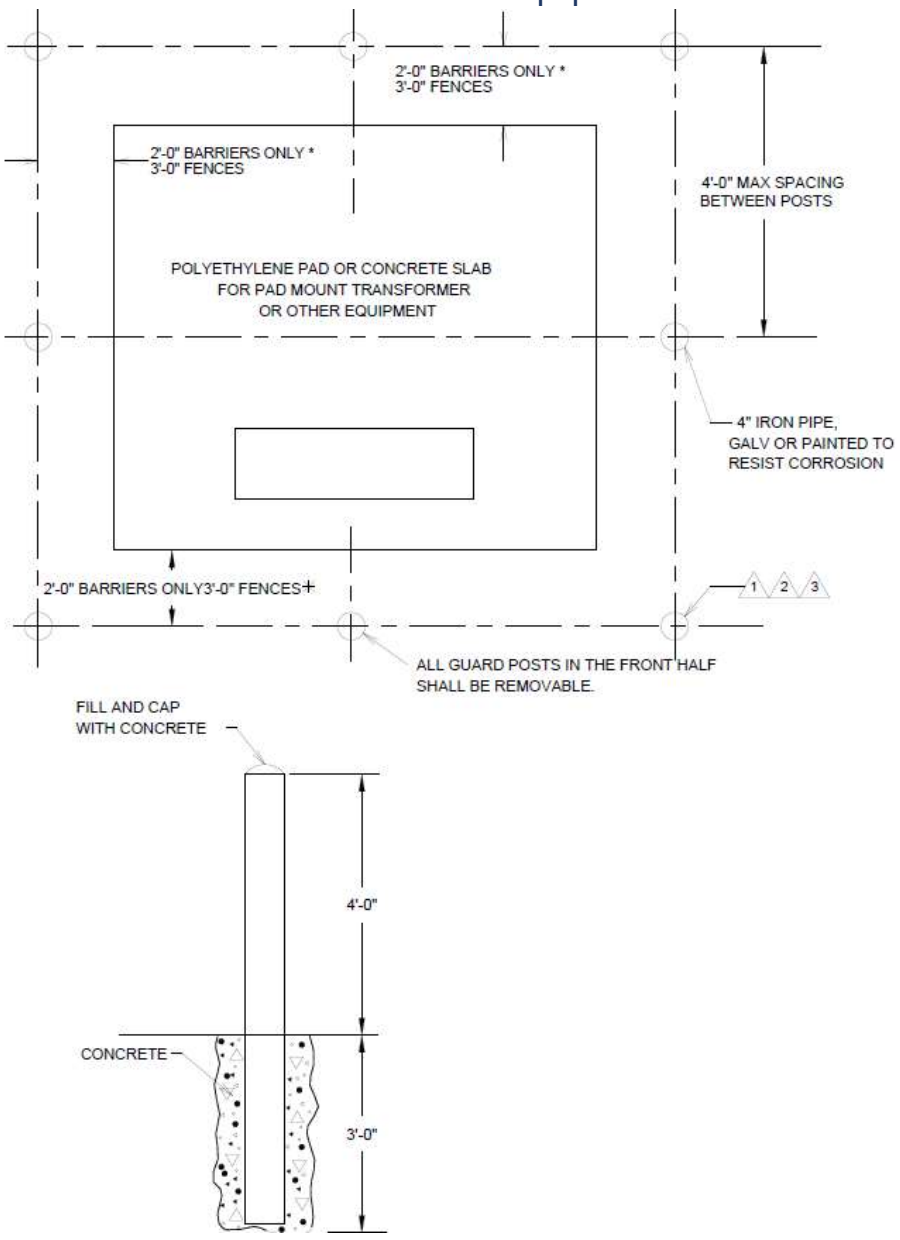




Notes:

1. All concrete shall be air entrained and test 3000 psi (Min.) in 28 days
2. Direction of primary conduit to be provided by Company
3. Any above ground obstructions such as air conditioners, shrubs, plants, fences, gas meters, and gas lines shall not be within 10 feet of the front or 3 ft of the sides of the transformer pad. Clearances must also be followed set forth in drawing 10.42.
4. The sizing of this base is based upon average undisturbed earth. Backfill with compact dirt or AB3 only (do not use gravel) to the bottom of the pad. Install conduits level with the top of the pad and cover the ends of the conduits.
5. Center of the base must be within 15’ of the edge of a paved area for crane access.
6. Conduit shall be 4” above bottom of concrete pad.

10.38 – Protective Barriers for Padmounted Equipment

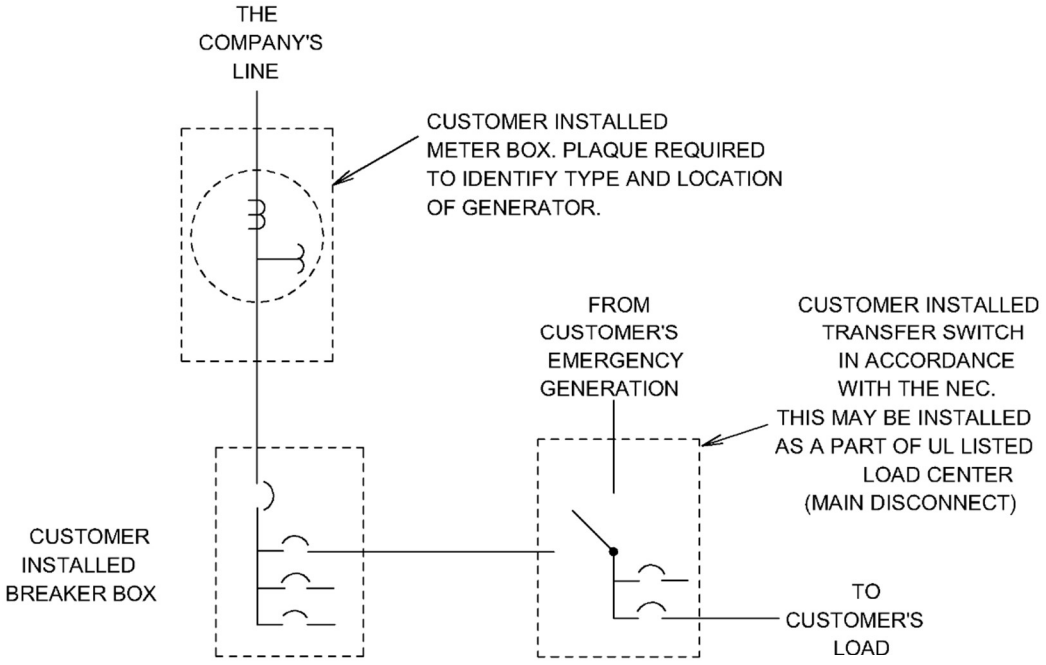


Notes:

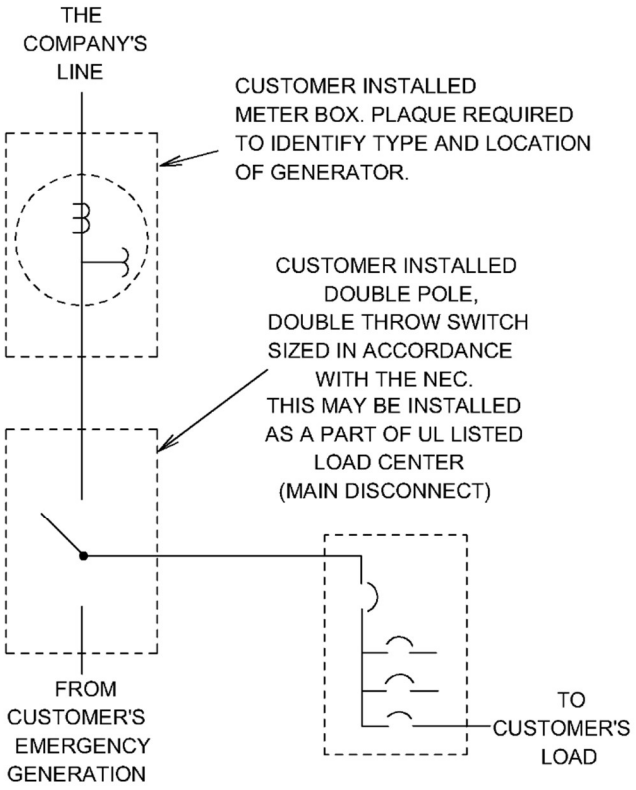
1. Install guard posts on those sides, front & rear of equipment subject to damage from vehicular traffic.
2. Barrier as shown is a minimum requirement. Ventilated fence may be added to screen equipment.
3. The guard posts and ventilated fence are installed & maintained by the customer.
4. No equipment (I.E. metering equipment) shall be attached to protective barriers.
5. Commercially available screw-in type pipe barriers may be substituted providing that they are approved by the Company.

∗ Minimum distances for barriers or fences.

10.39 – Standby Generation



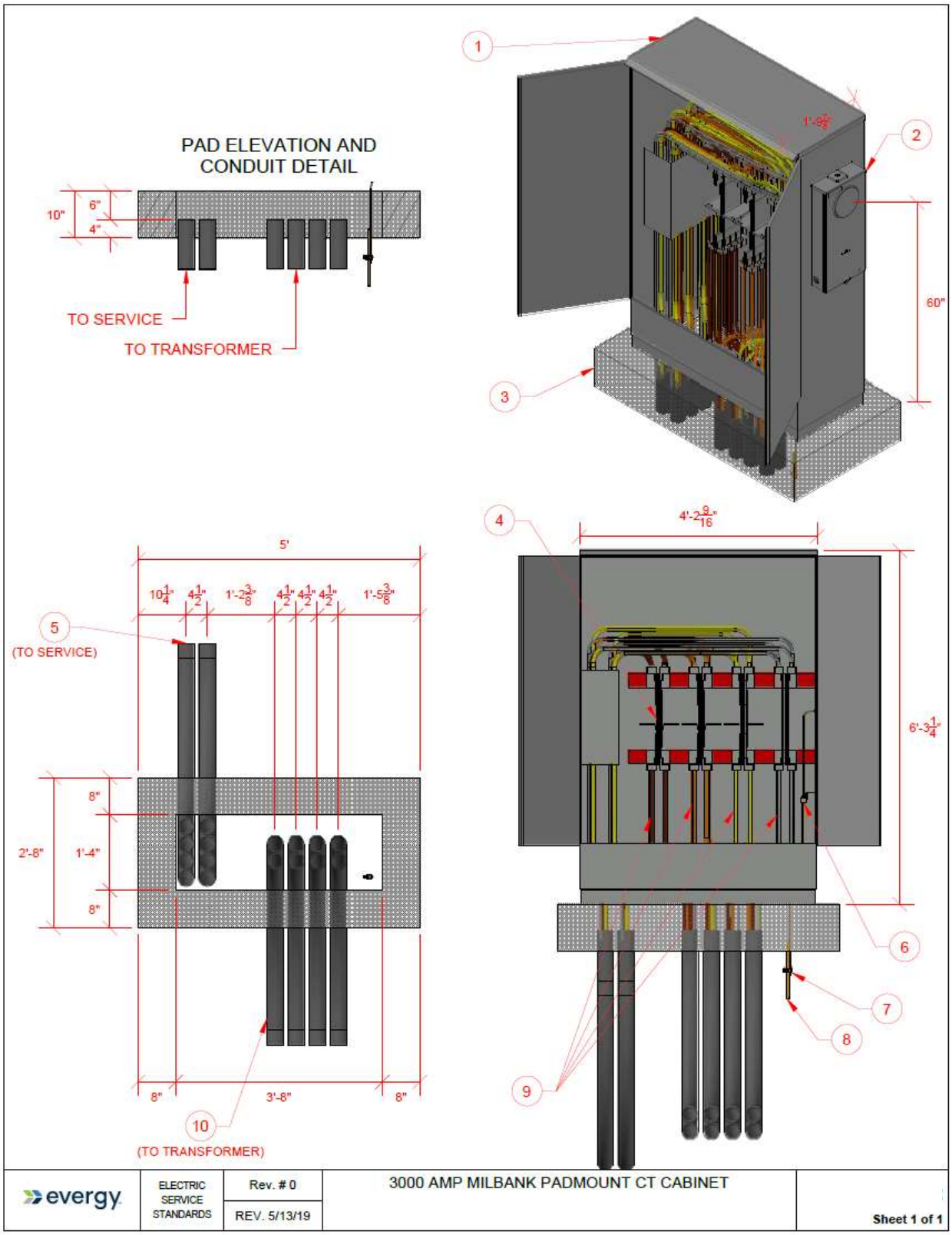
TRANSFER SWITCH "PARTIAL LOAD"



DOUBLE THROW SWITCH "FULL LOAD"

10.40 – C.T. Cabinet Examples

CT Cabinet Milbank KCPLM-3034PM 3000 amp



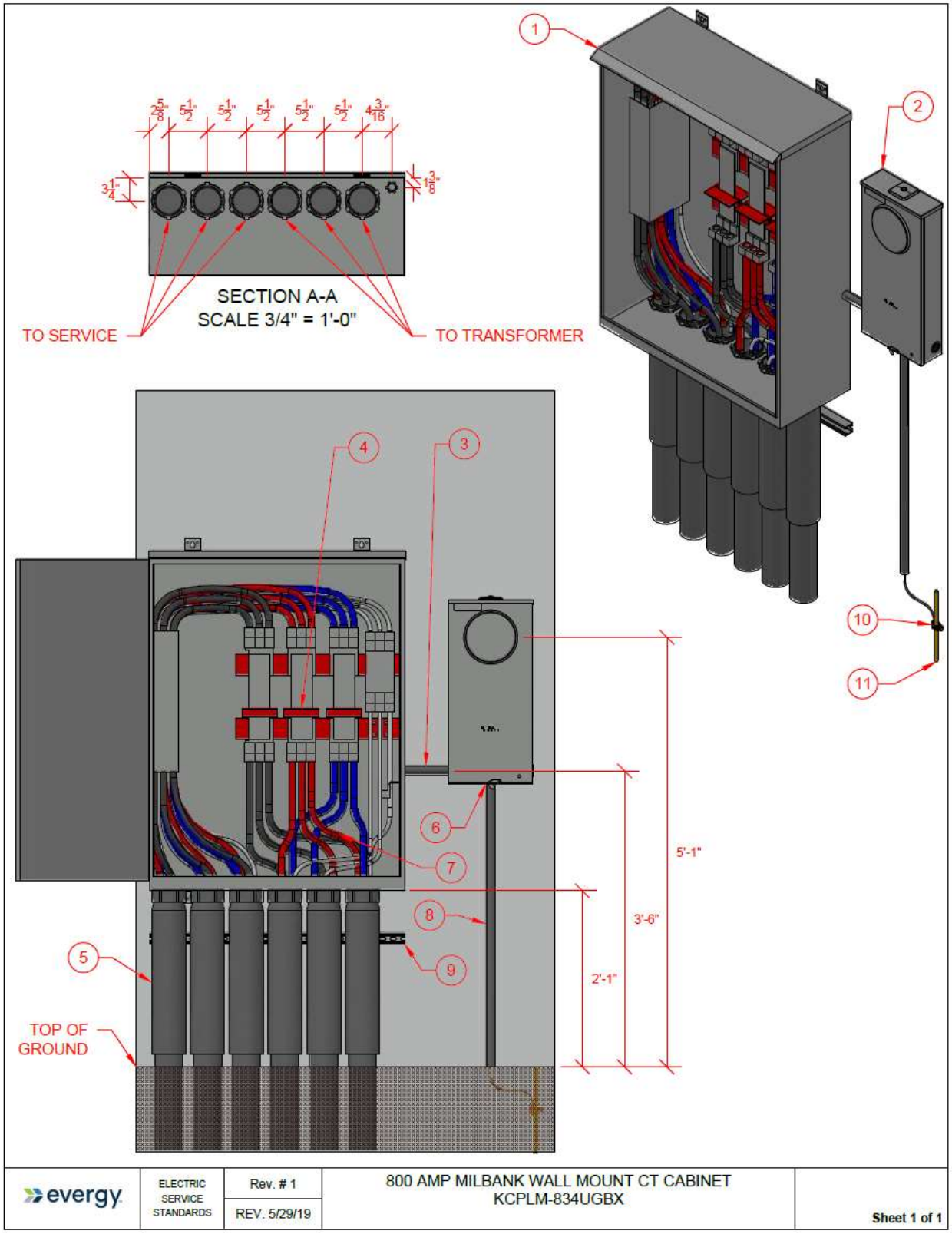
3000 Amp C.T. Service Padmount		
ID	Name	Requirements
1	CT Cabinet Milbank KCPLM-3034PM 3000 amp	
2	CT Rated Meter Socket	Meter enclosure is attached and electrically bonded to the CT Cabinet. Meter socket to be installed between 63” and 42” in height.
3	Concrete pad mount	Pour in place or pre-cast concrete pad.
4	Instrument C.T.	Installed by the customer, and wired by company. Install the C.T.’s primary polarity mark facing towards the utility transformer. Install within 60” to 42” in height
5	Service Conduit	Eight 4” gray schedule 40 PVC with 36” radius bends. Stack conduit as shown. Provide extensions so that conduit is 4 inches above ground inside the pad
6	Grounding Electrode Conductor	Minimum of 6 awg solid bare copper ground wire. Preferred to be installed in the C.T. cabinet enclosure. Alternatively, the grounding electrode conductor can be connected to the meter enclosure and externally grounded.
7	Grounding Electrode clamp	Attach clamp near the surface. This may need to be inspected. Contact the local AHJ for requirements.
8	Grounding Electrode	All C.T. meter installations require a 5/8” x 8’ copper clad steel ground rod as near as possible to the location of the meter socket. The upper end of the rod shall be flush with or just below grade.
9	Service Conductor	Maximum size of 500 MCM copper or aluminum; or 750 compact aluminum. Aluminum must be AA-8000 series electrical grade aluminum alloy. Line and load side shall be marked.
10	Transformer Conduit	Eight 4” gray schedule 40 PVC with 36” radius bends. Stack conduit as shown. Provide extensions so that conduit is 4 inches above ground inside the pad

3000 Amp C.T. Service Padmount				
ID	Name	Provided By	Installed By	Maintained By
1	CT Cabinet Milbank KCPLM-3034PM 3000 amp	Customer	Customer	Customer
2	CT Rated Meter Socket	Evergy	Customer	Evergy
3	Concrete Pad Mount	Customer	Customer	Customer
4	Instrument C.T.	EVERGY	Customer/EKC	EVERGY
4	Instrument C.T. Wiring	EVERGY	EVERGY	EVERGY
5	Service Conduit	Customer	Customer	Customer
6	Grounding Electrode Conductor	Customer	Customer	Customer
7	Grounding Electrode clamp	Customer	Customer	Customer
8	Grounding Electrode	Customer	Customer	Customer
9	Service Conductor	Customer[1]	Customer[1]	Customer[1]
10	Transformer Conduit	Customer	Customer	Customer

Notes:

1. EKC territory – contact the local service center.

CT Cabinet Milbank KCPLM-834UGBX 800amp



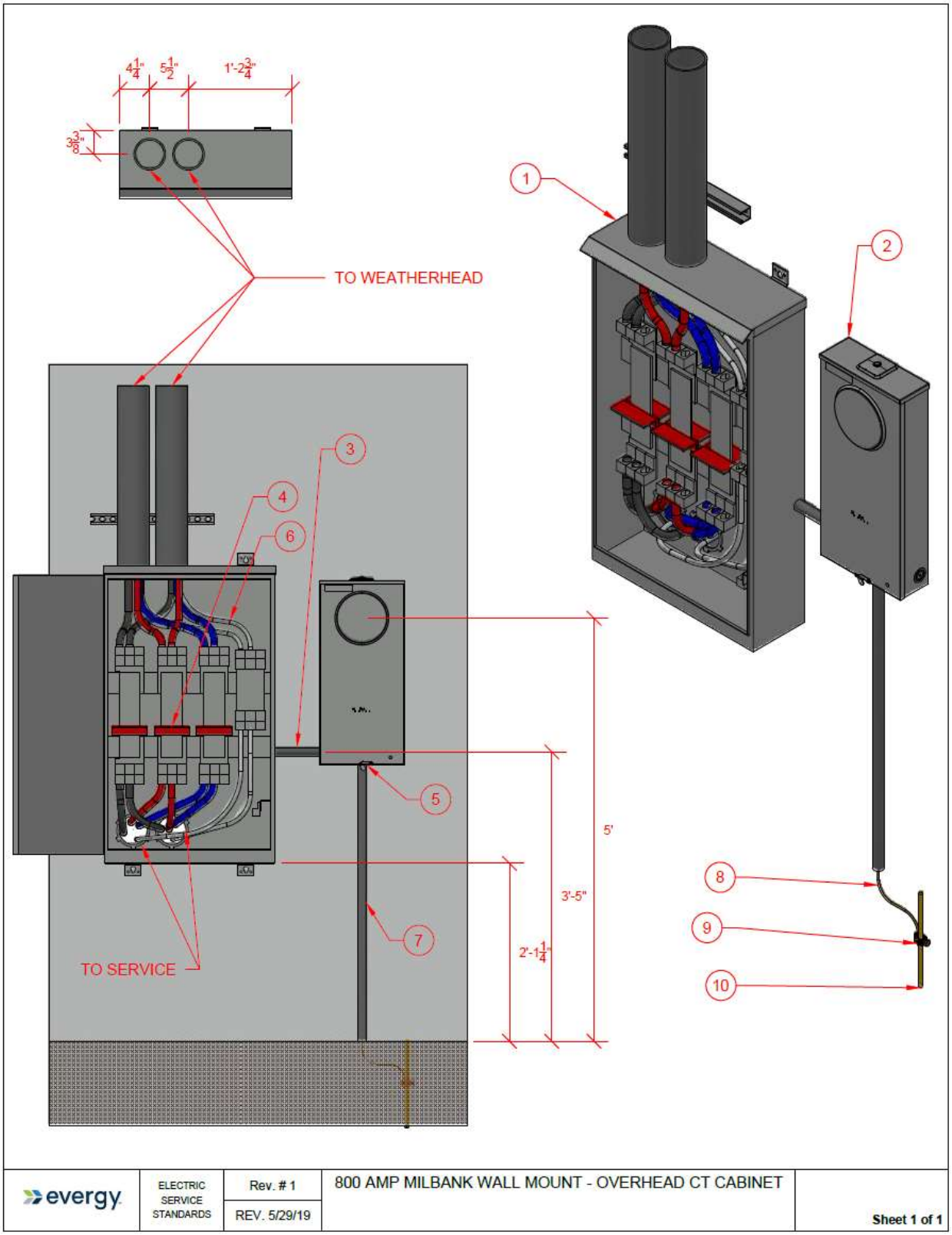
800 Amp C.T. Service Underground Commercial Service		
ID	Name	Requirements
1	CT Cabinet Milbank KCPLM-834UGBX 800amp	Bottom of cabinet installed above 2 feet.
2	CT Rated Meter Socket	Meter enclosure is attached and electrically bonded to the CT Cabinet by galvanized rigid metallic conduit. Meter socket to be installed between 63" and 42" in height.
3	Conduit	1 ¼" galvanized rigid metallic conduit for bonding the meter enclosure to the C.T. cabinet
4	Instrument C.T.	Installed by the customer, and wired by company. Install the C.T.'s primary polarity mark facing towards the utility transformer. Install within 60" to 42" in height
5	Slip joint and Service conduit	Six 4" gray schedule 40 PVC slip joints. Three 4" gray schedule 40 PVC with 36" radius bends to transformer
6	Grounding Electrode Conductor	Minimum of 6 awg solid bare copper ground wire.
7	Service Conductor	Maximum size of 500 MCM copper or aluminum; or 750 compact aluminum. Aluminum must be AA-8000 series electrical grade aluminum alloy. Line and load side shall be marked.
8	Grounding conductor conduit	1" gray schedule 40 pvc conduit to ground
9	Unistrut	Recommended to install unistrut and strap slip joints
10	Grounding Electrode clamp	Attach clamp near the surface. This may need to be inspected. Contact the local AHJ for requirements.
11	Grounding Electrode	All C.T. meter installations require a 5/8" x 8' copper clad steel ground rod. The upper end of the rod shall be flush with or just below grade.

800 Amp C.T. Service Underground Commercial Service				
ID	Name	Provided By	Installed By	Maintained By
1	CT Cabinet Milbank KCPLM-3034PM 3000 amp	Customer	Customer	Customer
2	CT Rated Meter Socket	EVERGY	Customer	EVERGY
3	Conduit	Customer	Customer	Customer
4	Instrument C.T.	EVERGY	Customer/EKC	EVERGY
4	Instrument C.T. wiring	EVERGY	EVERGY	EVERGY
5	Slip joint	Customer	Customer	Customer
6	Grounding Electrode Conductor	Customer	Customer	Customer
7	Service Conductor	Customer	Customer	Customer
8	Grounding Electrode Conduit	Customer	Customer	Customer
9	Unistrut	Customer	Customer	Customer
10	Grounding Electrode clamp	Customer[1]	Customer[1]	Customer[1]
11	Grounding Electrode	Customer	Customer	Customer

Notes:

1. EKC territory – contact the local service center.

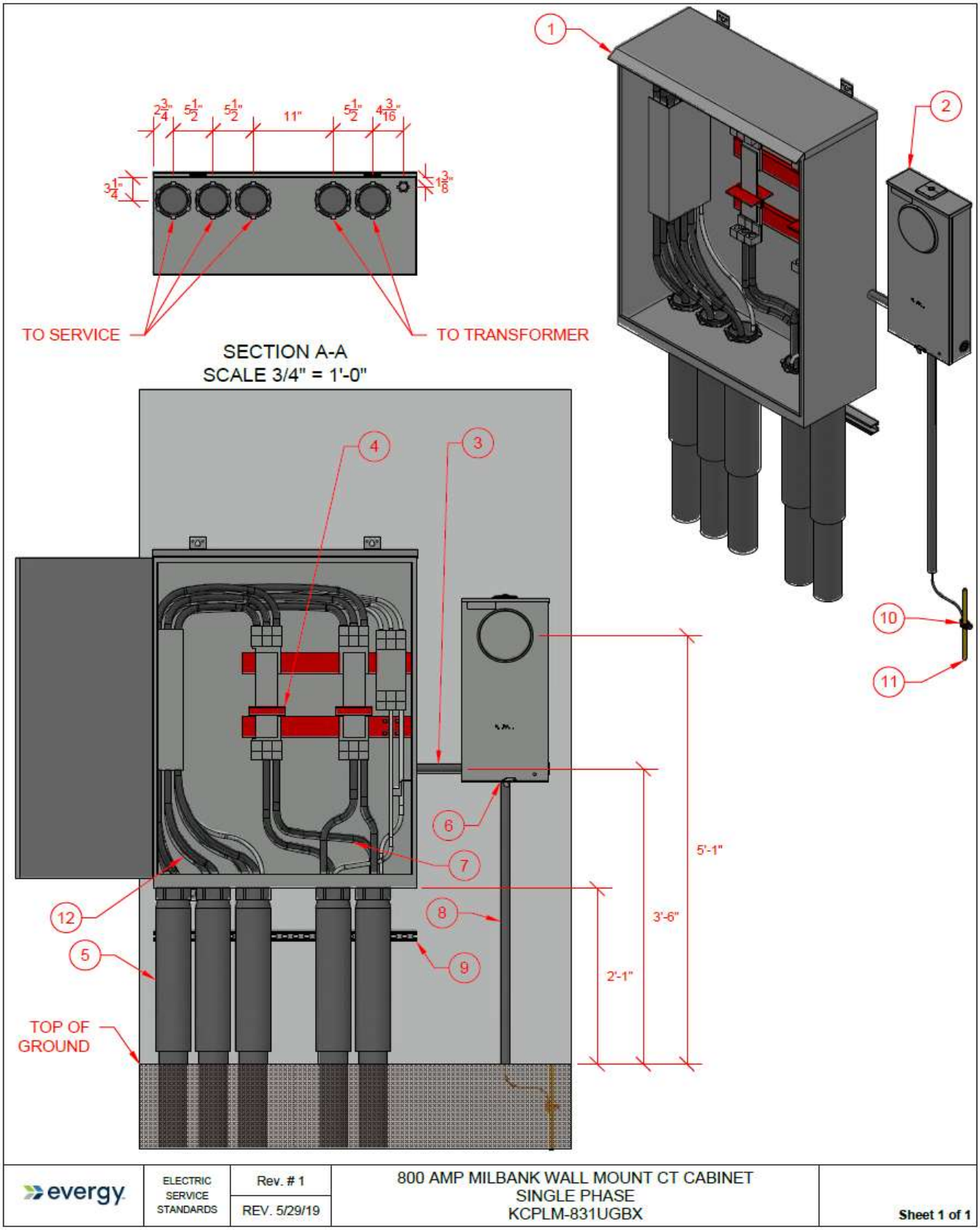
CT Cabinet Milbank KCPLM-834 800amp



800 Amp C.T. Service Overhead Service		
ID	Name	Requirements
1	CT Cabinet Milbank KCPLM-834 800amp	Bottom of cabinet installed above 2 feet.
2	CT Rated Meter Socket	Meter enclosure is attached and electrically bonded to the CT Cabinet by galvanized rigid metallic conduit. Meter socket to be installed between 60" and 42" in height.
3	Conduit	1 ¼" galvanized rigid metallic conduit for bonding the meter enclosure to the C.T. cabinet
4	Instrument C.T.	Installed by the customer, and wired by company. Install the C.T.'s primary polarity mark facing towards the utility transformer. Install within 60" to 42" in height
5	Grounding Electrode Conductor	Minimum of 6 awg solid bare copper ground wire.
6	Service Conductor	Sized per NEC.
7	Grounding conductor conduit	1" gray schedule 40 pvc conduit to ground
8	Grounding Electrode clamp	Attach clamp near the surface. This may need to be inspected. Contact the local AHJ for requirements.
9	Grounding Electrode	All C.T. meter installations require a 5/8" x 8' copper clad steel ground rod. The upper end of the rod shall be flush with or just below grade.

800 Amp C.T. Service Overhead Service				
ID	Name	Provided By	Installed By	Maintained By
1	CT Cabinet Milbank KCPLM-834 800amp	Customer	Customer	Customer
2	CT Rated Meter Socket	EVERGY	Customer	EVERGY
3	Conduit	Customer	Customer	Customer
4	Instrument C.T.	EVERGY	Customer/EKC	EVERGY
4	Instrument C.T. wiring	EVERGY	EVERGY	EVERGY
5	Grounding Electrode Conductor	Customer	Customer	Customer
6	Service Conductor	Customer	Customer	Customer
7	Grounding Conductor Conduit	Customer	Customer	Customer
8	Grounding Electrode clamp	Customer	Customer	Customer
9	Grounding Electrode	Customer	Customer	Customer

CT Cabinet Milbank KCPLM-831UGBX 800amp



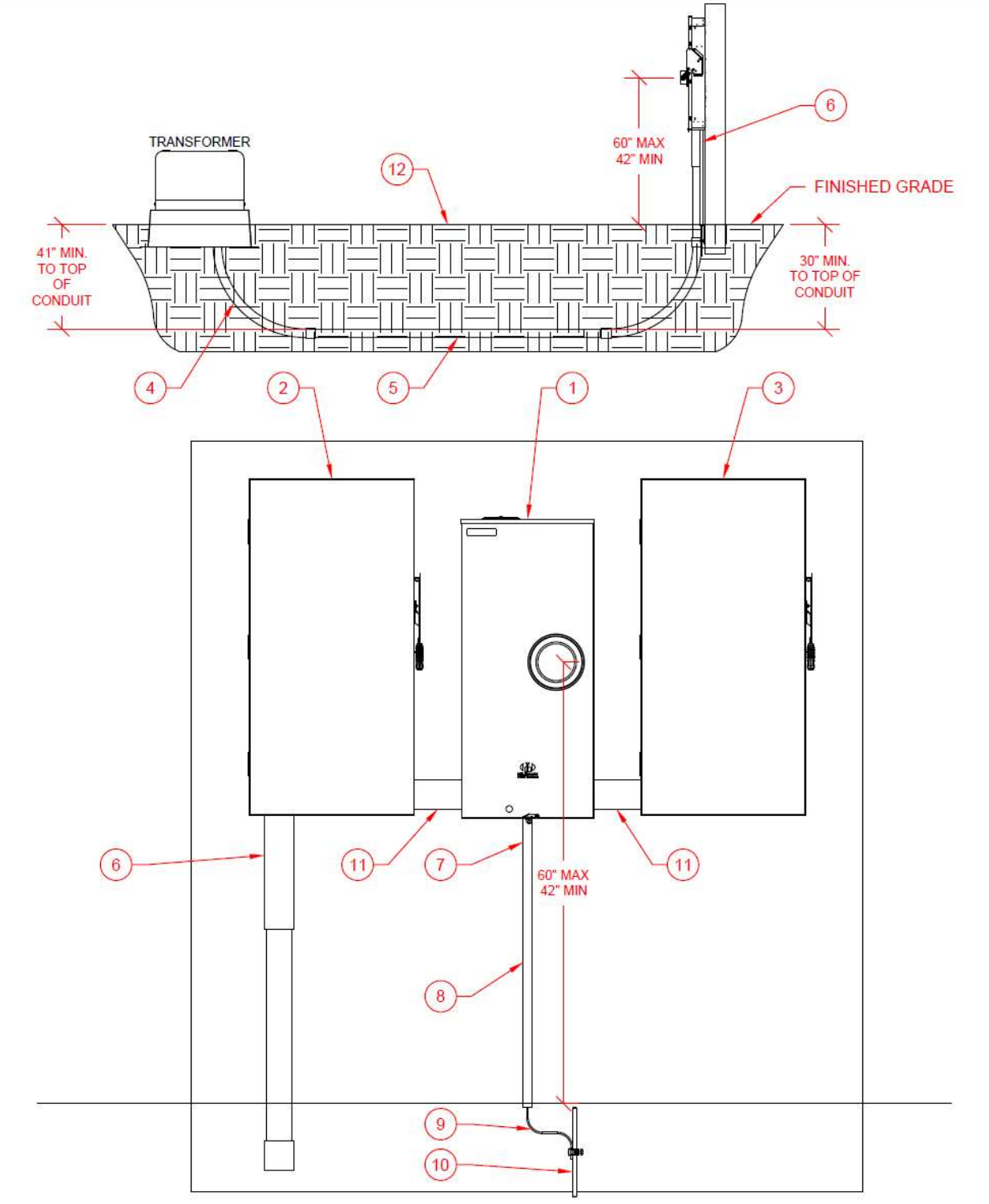
800 Amp C.T. Service Underground Single-Phase Residential/Commercial Service		
ID	Name	Requirements
1	CT Cabinet Milbank KCPLM-831UGBX 800amp	Bottom of cabinet installed above 2 feet.
2	CT Rated Meter Socket	Meter enclosure is attached and electrically bonded to the CT Cabinet by galvanized rigid metallic conduit. Meter socket to be installed between 63" and 42" in height.
3	Conduit	1 ¼" galvanized rigid metallic conduit for bonding the meter enclosure to the C.T. cabinet
4	Instrument C.T.	Installed by the customer, and wired by company. Install the C.T.'s primary polarity mark facing towards the utility transformer. Install within 60" to 42" in height
5	Slip Joint	4" gray schedule 40 PVC slip joints. Residential – Use 2 conduits to transformer. Commercial- up to 3 slip joints to transformer. 4" gray schedule 40 PVC with 36" radius bends to Transformer
6	Grounding Electrode Conductor	Minimum of 6 awg solid bare copper ground wire.
7	Service Conductor	Line and load side shall be marked. Residential - Two sets of service conductors provided by company Commercial – Maximum size of 500 MCM copper or aluminum; or 750 compact aluminum. Aluminum must be AA-8000 series electrical grade aluminum alloy.
8	Grounding conductor conduit	1" gray schedule 40 pvc conduit to ground
9	Unistrut	Recommended to install unistrut and strap slip joints
10	Grounding Electrode clamp	Attach clamp near the surface. This may need to be inspected. Contact the local AHJ for requirements.
11	Grounding Electrode	All C.T. meter installations require a 5/8" x 8' copper clad steel ground rod. The upper end of the rod shall be flush with or just below grade.

800 Amp C.T. Service Underground Single-Phase Residential/Commercial Service				
ID	Name	Provided By	Installed By	Maintained By
1	CT Cabinet Milbank KCPLM-3034PM 3000 amp	Customer	Customer	Customer
2	CT Rated Meter Socket	EVERGY	Customer	EVERGY
3	Conduit	Customer	Customer	Customer
4	Instrument C.T.	EVERGY	Customer/EKC	EVERGY
4	Instrument C.T. wiring	EVERGY	EVERGY	EVERGY
5	Slip joint	Customer	Customer	Customer
6	Grounding Electrode Conductor	Customer	Customer	Customer
7	Service Conductor (residential)	EVERGY	EVERGY	EVERGY
7	Service Conductor (commercial)	Customer[1]	Customer[1]	Customer[1]
8	Grounding Electrode Conduit	Customer	Customer	Customer
9	Unistrut	Customer	Customer	Customer
10	Grounding Electrode clamp	Customer	Customer	Customer
11	Grounding Electrode	Customer	Customer	Customer

Notes:

1. EKC territory – contact the local service center.

10.41 – 480V Meter and Disconnect

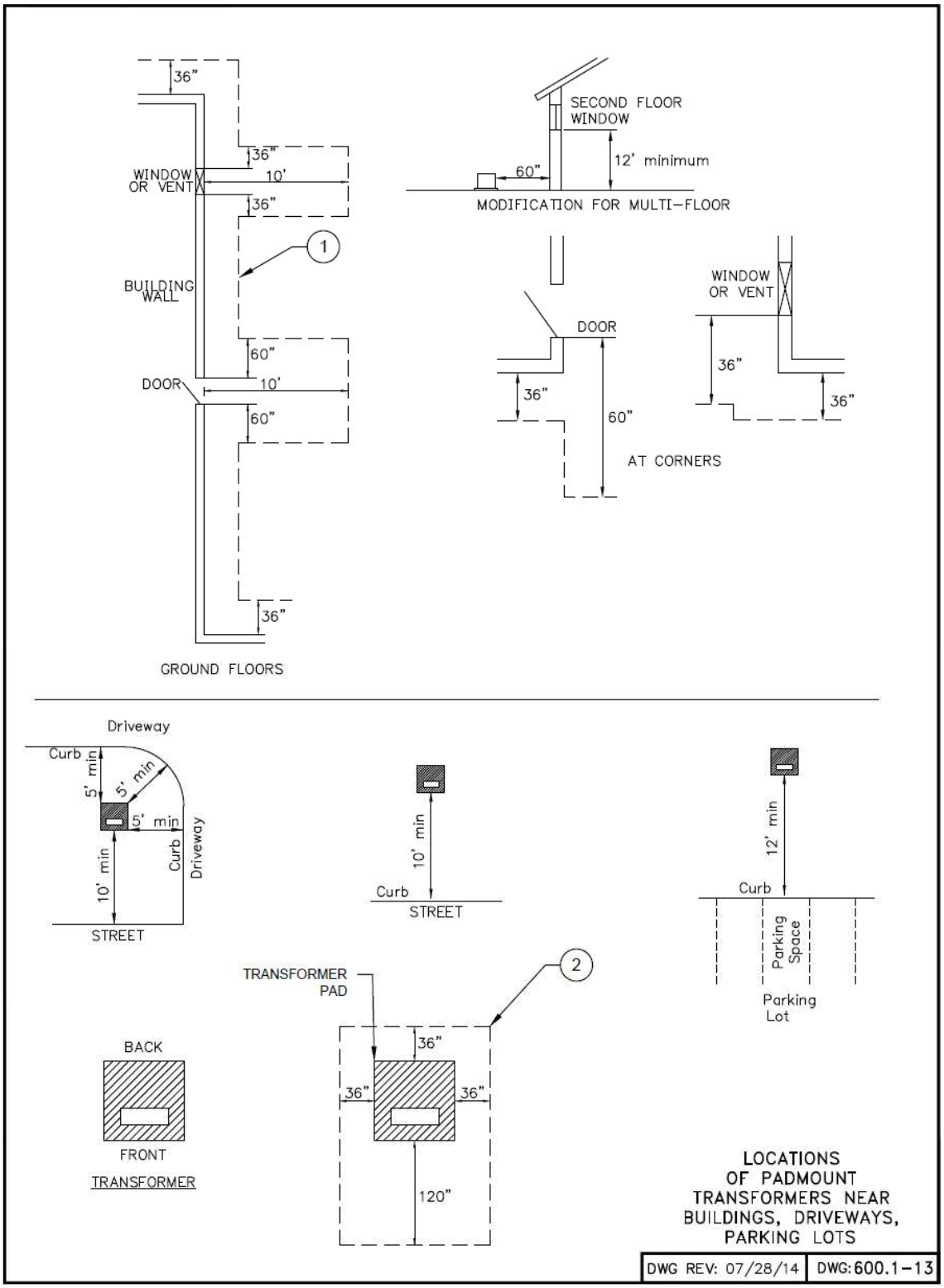


evergy	ELECTRIC SERVICE STANDARDS	Rev. # 1 REV. 8/16/19	SELF CONTAINED 480 VOLT METERING THREE PHASE MILBANK U4013-X-2/K7	Sheet 1 of 1

480 Volt metering Three-Phase Commercial Service Milbank 4013-X-2/K7		
ID	Name	Requirements
1	Meter Socket - Milbank 4013-X-2/K7	Meter socket to be installed between 60” and 42” in height.
2	Meter Disconnect	U.L. listed, Weatherproof, load-breaking, non-fused disconnect for use by Company personnel only. The disconnect shall have a hasp for a Company lock on the handle and enclosure. Disconnect is electrically bonded to the Meter Socket by galvanized rigid metallic conduit. Solid blade disconnects are required for installations below 10Kamp fault current. Contact the company for installations above 10Kamp. It must be labeled “UTILITY USE ONLY”. In addition to that, per NEC 230.82, requires it must be labeled as “METER DISCONNECT, NOT SERVICE EQUIPMENT”
3	Service Disconnect	Disconnect is electrically bonded to the Meter Socket by galvanized rigid metallic conduit.
4	Transformer Conduit	4” gray schedule 40 PVC with 36” radius bends. Depth is 41” to enter transformer box pad.
5	Transformer Conduit	4” gray schedule 40 PVC with 36”radius bends. Maintain 30” depth
6	Slip Joint	4” gray schedule 40 PVC slip joints
7	Grounding Electrode Conductor	Minimum of 6 awg solid bare copper ground wire.
8	Grounding conductor conduit	1” gray schedule 40 pvc conduit to ground
9	Grounding Electrode clamp	Attach clamp near the surface. This may need to be inspected. Contact the local AHJ for requirements.
10	Grounding Electrode	All C.T. meter installations require a 5/8” x 8’ copper clad steel ground rod. The upper end of the rod shall be flush with or just below grade.
11	Conduit	Galvanized rigid metallic conduit for bonding the meter socket to the disconnect
12	Backfill	Backfill compaction for conduit trench should be to 95% of maximum density (proctor – ASTM D698).

480 Volt metering Three-Phase Commercial Service Milbank 4013-X-2/K7				
ID	Name	Provided By	Installed By	Maintained By
1	Meter Socket - Milbank 4013-X-2/K7	Customer	Customer	Customer
2	Meter Disconnect	Customer	Customer	Customer
3	Service Disconnect	Customer	Customer	Customer
4	Transformer Conduit	Customer	Customer	Customer
5	Transformer Conduit	Customer	Customer	Customer
6	Slip Joint	Customer	Customer	Customer
7	Grounding Electrode Conductor	Customer	Customer	Customer
8	Grounding conductor conduit	Customer	Customer	Customer
9	Grounding Electrode clamp	Customer	Customer	Customer
10	Grounding Electrode	Customer	Customer	Customer
11	Conduit	Customer	Customer	Customer
12	Backfill	Customer	Customer	Customer

10.42 – Locations of Padmount Transformers



Locations of Padmount Transformers Near Buildings, Driveways, Parking Lots		
ID		Requirements
1		Transformers are to be located outside of the dashed line. A minimum width of 15 feet for working space between structures will be required for transformer installation and maintenance. Truck width access (10 feet minimum) must be provided from a public thorough-fare to transformer locations
2		Any above ground obstructions such as air conditioners, shrubs, plants, fences, gas meters, and gas lines shall not be within 10 feet of the front or 3 ft of the sides of the transformer pad. For fences and barriers, refer to 10.38
3		The transformer shall be installed in a location readily accessible at all times
4		The transformer pad shall be located as far as practical from any frame or brick veneer structure
5		No portion of any structure shall extend over the transformer
6		Drainage of the area surrounding the transformer shall be away from the structure
7		The transformer shall be installed so that the front (entrance side) of the padmount transformer does not face the structure
8		Customer shall install adequate barriers to prevent damage to transformers that are located in areas open to vehicular traffic. Structures or barriers different than specified in 10.38 shall need to be approved by the company and will require adequate working space and ventilation.
9		Building walls include modular glass panels that cannot be opened for ventilation
10		The transformer pad shall be located as far as practical from any frame or brick veneer structure
11		No portion of any structure shall extend over the transformer

Revisions

4/29/2021

Section 2 &10- Removed Company provided meter enclosure and replaced with Customer provided meter enclosure

11/15/19

Updated Maps to reflect Evergy territories- updated entire document to reflect new territory name changes

definitions page – Added EKC, EKM, EMM, EMW - updated “Company” to reflect name change

ground rods are 5/8” by 8’

Pg 16 – 2.B – Added rules for platforms and decks

Pg 17 - 2.D – Revised language for multi-meter buildings.

Pg 18 – 2.F – Added non-metallic conduit specifications for transformer C.T. metering

Pg 22 – 3.A – removed redundant NEC reference.

Pg 25 - 4.C.2 – Low-rise multifamily – moved multi-meter language to 2.D

Pg 28 - 5.B.2 – Added - Multiple occupant building requires disconnect in front of raceway/cable tray

Pg 33 - 6.A.30 – Add typical conduit sizes for primary installations

Pg 34 – 6.A – street and road crossing – “EKC requires street and road crossings to use 6” galvanized steel. All other products must be approved by the company.”

Drawing 10.1 – moved phone numbers to Key Contacts

Drawing 10.9 – added 400 amp C.T. cabinet

Drawing 10.40 – updated territories to Evergy, EKC, EKM, EMM, EMW, C.T. height

8/30/19

Added Revision Date number to manual

Replaced “meter enclosure” with “meter socket”

Page 16 – 2.B. added “Meters shall not be located above platforms without permission from the company. Platforms shall be built to all applicable codes, must be accessible by stairs, and must be a permanent structure. A ladder is unacceptable in place of stairs. Platforms must have suitable railings, while still meeting all clearances set forth in section 2.C.”

Page 17 – 2.E. Changed C.T metering to all services above 400 amps. All C.T. cabinets must be busbar style cabinets. C.T. cabinets shall be bonded to the meter socket.

Page 18 - 2.F – Changed preferred meter location to be within building 50 feet, and that the control cable can only be 65 feet in length.

3.A – Added “The customer shall be responsible for providing an additional grounds on this conductor on customer premises in accordance with the NEC and all local codes. The company requires the customer to provide and install a driven ground rod and connected to the meter socket. The customer will need to provide an additional ground, per NEC. See section 10.2 for Grounding Diagrams.”

Page 22 – 3.B – added “Use 1 ¼” galvanized rigid metallic conduit for bonding the meter socket to the C.T. cabinet.”

Page 31 – 5.C.2 – Moved “High Rise Multi-family” into the Commercial Section in 5.C.2

Page 35 – 6.B. Padmount transformer accessibility- Changed “and within 15 feet of a paved surface” to “Three phase transformers must be within 15 feet of a paved surface”

Drawing 10.2 – Changed example A from “preferred” to “Standard”. Note 2 – added “New construction for buildings shall follow Example A.”

Drawing 10.9 – added notes for single-phase version. Change notes from * to numeric.

Drawing 10.21 – removed lines 7-8 mentioning clamps/straps

Drawing 10.22 – Revised drawing notes “Conduit from Pedestal”

Drawing 10.24 – Added note 4 – Company may require a main disconnect ahead of junction box/trough

Drawing 10.28 – line 5 - Removed “This clearance may be reduced to 8 feet if the multiplex conductor terminates on the building away from any balconies”. Added “Customer must also follow NEC codes for clearances and service drops attachments”. Changed title to “Clearances of Conductors from Houses and Buildings Not Attaching to Buildings”

Drawing 10.36 – Removed clearances. Revised note 3 “Any above ground obstructions such as air conditioners, shrubs, plants, fences, gas meters, and gas lines shall not be within 10 feet of the front or 3 ft of the sides of the transformer pad. Clearances must also be followed set forth in drawing 10.42” changed note 5 to 15’ from 16’.

Drawing 10.37 – Removed clearances. Revised note 3 “Any above ground obstructions such as air conditioners, shrubs, plants, fences, gas meters, and gas lines shall not be within 10 feet of the front or 3 ft of the sides of the transformer pad. Clearances must also be followed set forth in drawing 10.42” changed note 5 to 15’ from 16’.

Added 10.40, 10.41, 10.42