

Electric Service Policy

Electric Service Policy

Kerrville Public Utility Board

1	SCOPE AND PURPOSE.....	1
2	DEFINITIONS.....	1
	2.1 Agreement for Electric Service.....	1
	2.2 City of Kerrville.....	1
	2.3 Connected Load.....	1
	2.4 Contribution in Aid of Construction (CIAC).....	1
	2.5 Current Transformer (CT).....	1
	2.6 Customer.....	1
	2.7 Customer's Electrical Installation.....	1
	2.8 Demand.....	1
	2.9 Developer.....	2
	2.10 Electric Service.....	2
	2.11 Electric Service Main Disconnect.....	2
	2.12 Energy.....	2
	2.13 Inspection Authority.....	2
	2.14 Inspector.....	2
	2.15 Instrument Transformer.....	2
	2.16 Kerr County.....	2
	2.17 Kerrville Public Utility Board (KPUB).....	2
	2.18 Maximum Available Fault Current.....	2
	2.19 Meter.....	2
	2.20 Meter Socket.....	2
	2.21 Mobile Home.....	2
	2.22 Point of Delivery (POD).....	3
	2.23 Primary.....	3
	2.24 Raceway.....	3
	2.25 Service Drop.....	3
	2.26 Service-Entrance Conductors.....	3
	2.27 Service Lateral.....	3
	2.28 Service Regulations.....	3
	2.29 Subdivision.....	3
	2.30 Voltage Transformer (VT).....	3
3	GENERAL.....	4
	3.1 Service Area.....	4
	3.2 Application for Service.....	4
	3.3 Standard Service Voltages.....	4
	3.4 Ownership.....	4
	3.5 Right-of-Way.....	4
	3.6 Codes.....	5
	3.6.1 National Electrical Code (NEC).....	5
	3.6.2 National Electrical Safety Code (NESC).....	5
	3.7 Inspections.....	5
	3.8 Safety.....	5
	3.8.1 Antennas, Signs, Light Standards.....	5
	3.8.2 House Moving.....	5
	3.8.3 Attachments to KPUB Facilities.....	6
	3.9 Customer's Electrical Installation.....	6
	3.9.1 Alterations and Additions.....	6
	3.9.2 Surge Arrestors.....	6
	3.9.3 Load Balance.....	6

	3.9.4	Special Utilization Equipment	6
	3.9.5	Auxiliary Generators, Battery Backup, Photovoltaic, Distributed Generation Sources.....	6
	3.9.6	Protective Devices	6
	3.9.7	Service to Adjacent Properties	7
	3.9.8	Electric Service Main Disconnect.....	7
	3.9.9	Grounding.....	7
	3.9.10	Harmonics	7
	3.10	Security	7
	3.11	Determining Location of Existing KPUB Facilities.....	8
	3.12	Foreign Attachments.....	8
	3.13	Two Way Feed.....	8
	3.14	Non-Standard Requirements	8
	3.15	Relocation or Modification of Existing Facilities	8
4		OVERHEAD SERVICE.....	8
	4.1	Conditions.....	8
	4.2	Responsibilities.....	9
	4.2.1	KPUB	9
	4.2.2	Customer.....	9
	4.3	Typical Service Installation.....	9
	4.3.1	Self Contained Meter	9
	4.3.2	C.T. Meter.....	11
	4.3.3	Meter Pole Installation.....	12
	4.4	Multiple Occupancy Buildings	13
	4.5	Service Drop Attachments	13
5		UNDERGROUND SERVICE.....	14
	5.1	Conditions.....	14
	5.2	Responsibilities.....	14
	5.2.1	KPUB	14
	5.2.2	Customer.....	14
	5.3	Typical Service Installation.....	15
	5.3.1	Self Contained Meter	15
	5.3.2	Multi-Family Gang Meter.....	16
	5.3.3	U.G. Service from Overhead Transformer.....	17
	5.3.4	C.T. Meter.....	18
	5.3.5	Mobile Home Pedestal.....	18
	5.4	Maximum Number of Service Runs	18
	5.5	Trenching and Conduit	19
	5.6	Handholes	22
	5.7	Transformer Pads	23
	5.7.2	Single Phase Residential - Detail	24
	5.7.3	Single Phase Residential - Location behind sidewalk	25
	5.7.4	Single Phase Residential - Location behind curb.....	26
	5.7.5	Three Phase Commercial - Detail	27
	5.7.6	Guard Posts.....	28
6		TEMPORARY SERVICE	28
	6.1	Availability	28
	6.2	Charge.....	28
	6.3	Rate.....	28
	6.4	Term.....	29
	6.5	Customer's Installation.....	29
	6.6	Typical Service Installation.....	29
	6.6.1	Overhead.....	29
	6.6.2	Underground.....	31
7		STREET LIGHTING.....	31
	7.1	General.....	31

7.2	Maintenance.....	32
7.3	Mercury Vapor Lamps.....	32
7.4	Metering.....	32
7.5	Street Light Detail.....	33
7.6	Responsibilities.....	34
	7.6.1 KPUB.....	34
	7.6.2 Developer.....	34
	7.6.3 City.....	34
8	METERING AND METERING EQUIPMENT.....	34
8.1	General.....	34
8.2	Location of Metering Equipment.....	34
8.3	Point of Delivery.....	34
8.4	Meter Sockets.....	35
8.5	Meter Socket Ampacity and Conductor Sizes.....	35
8.6	Identification of Meter Sockets and Main Disconnects.....	36
8.7	Work Space.....	36
8.8	Instrument Transformers.....	36
8.9	Primary Metering.....	36
8.10	Electrical Connections.....	37
	8.10.1 2 Wire 120 volt.....	37
	8.10.2 3 Wire 120/240 volt.....	38
	8.10.3 4 Wire, Wye 120/208 volt 3 Phase.....	39
	8.10.4 4 Wire, Delta 120/240 volt 3 Phase.....	40
8.11	Providing Energy Pulses to Customer.....	40
8.12	Meter Tampering and Theft of Service.....	40

Electric Service Policy

Kerrville Public Utility Board

1 SCOPE AND PURPOSE

The Electric Service Policy is issued by the Kerrville Public Utility Board ("KPUB") for use by its customers and their agents.

The policy is to be used as a guide in planning the installation of electrical equipment and methods of receiving electrical power from the distribution system of KPUB. If service methods other than those in this book are required, the Customer shall obtain written KPUB approval prior to purchasing or installing equipment.

The information presented herein will be revised periodically to reflect changes as deemed necessary by KPUB.

2 DEFINITIONS

2.1 Agreement for Electric Service

A written contract between KPUB and Customer under which KPUB provides electric service.

2.2 City of Kerrville

A municipal corporation hereinafter called the "City"

2.3 Connected Load

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

2.4 Contribution in Aid of Construction (CIAC)

Payment made to KPUB by the Customer to defray KPUB's construction cost, when required.

2.5 Current Transformer (CT)

An instrument transformer used in metering which reduces the load current measured at the meter by a known ratio.

2.6 Customer

An individual, partnership, association, joint venture, corporation, etc., or governmental agency who is receiving, who is applicant for, or who is receiving the benefit of electric service at a specified point of delivery.

2.7 Customer's Electrical Installation

All service entrances, weatherheads, bus ducts, and appliances or apparatus of every kind and nature used in connection with or forming a part of an installation for utilizing electric service. In general, Customer's installations are located on the Customer's side of the "Point of Delivery", whether such installation is owned outright by the Customer or issued by the Customer under lease or otherwise.

2.8 Demand

The rate at which electric energy is used at any instant or averaged over any designated period of time.

2.9 Developer

Any person or legal entity engaged in developing or subdividing land to which utility services are to be rendered by KPUB. Where applicable, any individual or legal entity that applies for the extension of utility services in order to serve a certain property.

2.10 Electric Service

Electric power and energy produced, transmitted and distributed, and provided or made available by KPUB at the point of delivery.

2.11 Electric Service Main Disconnect

Equipment usually consisting of circuit breakers or switches and fuses installed by and at the expense of the Customer on the service entrance conductors to a building and intended to constitute the main control and means of disconnect of electric service to that building.

2.12 Energy

The measure of how much electric power is provided over time for doing work. The electrical unit is the watt-hour, or kilowatt-hour, which are 1000 watt-hours.

2.13 Inspection Authority

Generally, an incorporated City or Town, but may be an agency of the County, State or Federal Government.

2.14 Inspector

A person or agency authorized to inspect and approve electric installations.

2.15 Instrument Transformer

A device used in metering arrangements, which limits the amount of current or voltage potential necessary to operate metering equipment.

2.16 Kerr County

A County in the State of Texas hereinafter called the "County".

2.17 Kerrville Public Utility Board (KPUB)

A municipal corporation of the City of Kerrville empowered to manage and control the electric distribution system for Kerrville and Kerr County as certified by the Public Utility Commission of Texas.

2.18 Maximum Available Fault Current

The amount of current that will flow due to a direct short circuit from one conductor to ground or from one conductor to another.

2.19 Meter

A device or devices, together with any required auxiliary equipment, for measuring electric service.

2.20 Meter Socket

A receptacle of weatherproof construction used for mounting a socket-type meter.

2.21 Mobile Home

A detached residential dwelling designed for long term occupancy and intended to be transported after fabrication on streets and highways on its own wheels or on a flatbed or

other trailer, and arriving at the site where it is to be occupied as a dwelling complete and ready for occupancy, except for minor and incidental unpacking and assembly operations, location on jacks or permanent foundation, connection to utilities and the like.

2.22 Point of Delivery (POD)

The point where the KPUB's conductors are connected to the Customer's conductors. At KPUB's option, locations where the electrical installation has multiple connections to KPUB's conductors, due to KPUB facilities' limitations or design criteria may be considered one point of delivery for billing purposes.

2.23 Primary

That portion of the electric distribution system, which delivers energy to the primary (high voltage) electric side of the distribution transformer from the substation or point of supply. Nominal voltages of the primary system are 7.2/12.5 kV wye.

2.24 Raceway

Tubular or rectangular channel or conduit for containing electrical conductors, which may be exposed, buried beneath the surface of the earth, or encased in a building structure.

2.25 Service Drop

Overhead conductors that extend from KPUB's overhead distribution system to the point of delivery, where connection is made to Customer's electrical installation.

2.26 Service-Entrance Conductors

Conductor provided by Customer extending from Customer's electrical equipment or service main disconnect to the point of delivery (POD) where connection is made.

2.27 Service Lateral

Conductors, usually underground but sometimes in raceway above ground, that extends from KPUB's distribution system to the point of delivery or from Customer's electrical installation to the point of delivery (POD).

2.28 Service Regulations

A statement of terms and conditions governing the supplying and taking of electric service by Customer from KPUB, and supersedes and annuls all such regulations by whatever term designated which may heretofore have governed the supplying and taking of KPUB's electric service. Such Service Regulations are subject to change, from time to time by KPUB and regulatory authorities having jurisdiction, and are on file at KPUB's business offices and with various regulatory authorities.

2.29 Subdivision

A division of a lot, tract or parcel to land or water in two or more lots, plots, sites or other subdivision of land or water for the purpose, whether immediate or future, of sale, rent, lease, building development or other use, and which further includes the term "subdivide", meaning to divide land by conveyance or improvement into lots, blocks parcels, tracts or other portions.

2.30 Voltage Transformer (VT)

(Also known as Potential Transformer PT)

An instrument transformer used in metering which reduces the voltage measured at the meter by a known ratio.

GENERAL**3.1 Service Area**

KPUB will supply electric service to any Customer within the corporate limits of the City and in the unincorporated areas of Kerr County certified to KPUB by the Public Utility Commission of Texas, subject to the Policies, Service Rules and Regulations, Tariffs, and Line Extension Policy of KPUB.

3.2 Application for Service

Customer must make written application for electric service and pay all deposits and fees as required by KPUB Service Regulations and Tariffs.

Customer should apply for service as far in advance as practical and shall provide complete information regarding utilization equipment, connected load, service requirements, schedule, and complete set of final drawings of proposed structures.

3.3 Standard Service Voltages

Service is provided with alternating current at a nominal frequency of 60 Hz.

Single Phase	Three Phase
120	--
--	120/208Y
120/240	120/240Δ*
240	240Δ*
240/480	240/480Δ*
--	277/480Y
480	480Δ*
7200	--
	7200/12470Y

* Provided with overhead facilities only.

3.4 Ownership

No person shall, by the payment of CIAC or causing any construction of facilities donated to and accepted by KPUB, acquire any interest or right in any of these facilities, or any portion thereof.

3.5 Right-of-Way

Customer shall grant to KPUB any easement or right-of-way deemed necessary by KPUB for providing and maintaining electric service to Customer.

Customer shall provide, at no cost to KPUB, suitable space on Customer's premises, accessible at all times, for the installation and operation of facilities necessary to provide electric service to Customer.

3.6 Codes

The requirements in this book are based upon the applicable provisions of these codes:

3.6.1 National Electrical Code (NEC)

The NEC is an American National Standard, published by the National Fire Protection Association, and is used by electrical contractors to install Customer electrical facilities.

3.6.2 National Electrical Safety Code (NESC)

The NESC is the American National Standard ANSI-C2, published by the Institute for Electrical and Electronics Engineers (IEEE), and is used by KPUB for design and construction of electric supply facilities.

Customer's wiring and electrical equipment shall be installed in accordance with the latest editions of these codes. Where municipal, state, or KPUB requirements exceed those stated in these codes, such requirements shall govern.

3.7 Inspections

In those locations where required by law, Customer shall have his electrical installation inspected and approved by the proper authority. KPUB will provide electric service to Customer only after receiving notification from the inspecting authority certifying Customer's installation as being approved.

KPUB may refuse to provide electric service to any new or altered installation, or disconnect service to any existing installation which KPUB considers hazardous or of such character that satisfactory service cannot be given.

The providing of electric service by KPUB does not indicate that KPUB has inspected Customer's electrical installation and deemed it safe or adequate.

3.8 Safety

3.8.1 Antennas, Signs, Light Standards

Antennas such as those for television and radio, signs, light standards and similar equipment shall not be erected over, under, or in close proximity to KPUB's electric lines, or on KPUB's poles or other equipment. These items should be located as far as practical from KPUB's lines so that they may not accidentally contact energized wires. To do otherwise may result in serious injury or death, and damage to property. When planning an installation in the vicinity of KPUB lines or poles, contact the Engineering department to verify required clearances.

The attachment of antenna guys to poles supporting KPUB's wires is prohibited. Such attachments will be removed immediately and without liability upon discovery by KPUB.

3.8.2 House Moving

KPUB must be notified of the intent to move a house or other oversized load along a road over which KPUB's electric lines cross. With advance notice of the time and route of the move, KPUB will schedule a serviceman to accompany the moving. Under no circumstances shall anyone other than an authorized KPUB employee remove, cut, raise, or handle any KPUB facilities when moving a structure. The Customer will be invoiced for all expenses incurred by KPUB.

3.8.3 Attachments to KPUB Facilities

KPUB does not permit any attachments such as wires, ropes, signs, banners, or equipment to KPUB facilities by others except as authorized by written agreement (See 3.12). KPUB may without notice and without liability remove unauthorized attachments to KPUB facilities.

3.9 Customer's Electrical Installation

3.9.1 Alterations and Additions

KPUB installs facilities necessary to provide adequate electric service to Customer's equipment as described in the Application. Customer shall notify KPUB of any alterations or additions to Customer's electrical installation.

Services, meters, or metering equipment shall not be removed or relocated except by authorized KPUB employees. Customer should make arrangements for such work with KPUB when the wiring changes have been completed and inspected.

3.9.2 Surge Arrestors

Surge or lightning arrestors for secondary voltages are not required and, when installed by Customer, they shall be connected to Customer's facilities on the load side of Customer's electric service main disconnect.

3.9.3 Load Balance

Customer shall install and control the use of electrical equipment so that Customer's electrical load at the point of delivery remains in reasonable balance.

3.9.4 Special Utilization Equipment

Installation of equipment such as motors, welders, furnaces, x-ray, transmitters, etc. should be reviewed by KPUB so that adequate electric service can be provided and maintained to all Customers.

3.9.5 Auxiliary Generators, Battery Backup, Photovoltaic, Distributed Generation Sources

Where energy sources other than that supplied by KPUB are installed, Customer shall install as per KPUB specifications a switching and control system to prevent the energization of KPUB facilities by Customer's energy source. Such alternative energy sources shall not be installed without prior written approval from KPUB, which may be obtained by submitting the following:

1. Wiring schematic showing KPUB service entrance, standby service equipment, all panels, metering equipment, transfer switch
2. Cut-sheet of the transfer switch
3. Signed statement from Customer's licensed electrician or engineer that the equipment has been installed as per KPUB Electric Service Policy and the NEC

For interconnected distributed generation the following is required:

1. Completed application for interconnection and parallel operation of distributed generation with the KPUB Utility System.
2. Executed agreement for interconnection and parallel operation of distributed generation.

3.9.6 Protective Devices

Customer is responsible for the proper protection of Customer's electrical equipment and facilities from over/under voltage and current, phase reversal, and phase failure.

Upon request KPUB shall supply Customer data regarding the maximum available fault current at the point of delivery for the conditions existing at the time of installation.

3.9.7 Service to Adjacent Properties

Customer shall not extend wiring across or under a public street, alley, or avenue of other way in order to furnish electric service to another property or premises through one meter, even though Customer owns such property or premises, unless written consent is obtained from KPUB.

3.9.8 Electric Service Main Disconnect

Customer shall provide and install suitable disconnecting means on the outside of the building as close as possible to the point of delivery.

Customer may locate main disconnect inside the building provided it is in an equipment room designed for that purpose having an outside door only and the door is accessible by a hasp with a padlock for fire department use. The equipment room door shall be marked "Electrical Equipment Room - Disconnect Inside" by permanently affixed letters no less than 1" high.

3.9.9 Grounding

All neutral conductors of all service entrances shall be solidly grounded. Customer shall provide a grounded (neutral) conductor of not less than two sizes smaller than the service entrance ungrounded conductor. The grounded conductor shall have white or gray insulation or be marked with white tape at weatherheads and meter socket.

Customer shall provide a permanent grounding electrode conductor as required by the NEC. This grounding conductor shall be connected to the service entrance equipment, and neutral terminal in the service disconnect. It shall originate from the service entrance equipment and shall not terminate in meter socket.

Customer shall install a driven ground rod, which meets or exceeds the requirements of the NEC at each meter location or POD. Water pipes shall not be used for grounding purposes.

Ground resistance shall not be more than 25 ohms.

All grounding connections shall be accessible for inspection.

KPUB normally grounds the midpoint of one of the transformer secondaries in a three phase, 4 wire, delta connected service.

3.9.10 Harmonics

Customer shall limit harmonic current distortion measured at the POD to that specified in IEEE Standard 519. KPUB may measure harmonic distortion at Customer POD and require Customer to install equipment and make adjustments in their electric distribution system as needed to mitigate harmonic currents.

3.10 Security

KPUB normally installs locking devices or seals on meters, service enclosures, pad mount transformers, switchgears or other equipment. Tampering with the meter, equipment, or

conductors carrying unmetered current, or unauthorized breaking of KPUB's seals or locks is illegal and may expose the public to a hazard.

3.11 Determining Location of Existing KPUB Facilities

KPUB shall provide the approximate location of underground facilities upon request and with reasonable advance notice.

3.12 Foreign Attachments

Corporations, government agencies, and other organizations may obtain the right to attach their facilities or equipment to KPUB poles or other structures only by execution of a contract for such purpose.

Joint use agreements shall be individually negotiated between the requestor and KPUB.

All facilities owned by others attached to KPUB structures shall at all times and under all required conditions meet or exceed the applicable codes as in 3.6.

3.13 Two Way Feed

Customer shall pay the cost of additional facilities required to fulfill a request for two-way feed. The following information shall be provided by Customer for KPUB to design facilities for this capability.

1. Total electrical load to be served under normal operating conditions from preferred feed.
2. Amount of electrical load to be served under emergency operating conditions from alternate feed.
3. Overhead or underground service.
4. The acceptable duration of outage for transfer to alternate feed: less than 4 hours, 1 hour, 30 seconds, 1 second, or less than 1 second.
5. Alternate feed from different substation or different feeder of same substation.

3.14 Non-Standard Requirements

Customer shall pay the excess cost of any installation necessary to serve requirements above KPUB's standard electric service.

All deviations from standard electric service shall be approved by KPUB. KPUB may determine what is standard electric service at a specific location for a specific load.

3.15 Relocation or Modification of Existing Facilities

No person, not employed by KPUB for such purposes, will in any way alter, adjust, or extend any part of the electric distribution facilities.

Request for relocation or modification of existing facilities shall be approved by KPUB. The Customer making such request shall be responsible for all costs to perform the modifications.

4 OVERHEAD SERVICE

4.1 Conditions

KPUB should install facilities for electric service along the front lot line of on publicly maintained allies or roadways.

KPUB provides standard overhead electric service at KPUB's standard voltages in accordance with KPUB's extension policy. If Customer requests an installation, which is non-standard, such service may be provided by KPUB at Customer's expense.

Standard electric service at 600 volts or less should be limited to 2000 amperes of load through a single Customer's service entrance. KPUB may require loads exceeding 2000 amperes to be served with two or more adjacent services at a single point of delivery utilizing bus duct, pad mount transformers, underground service, and totalized metering.

The maximum size electric service provided from overhead facilities is 300 KVA connected transformer size. Underground facilities should be used for loads, which exceed this limit.

4.2 Responsibilities

4.2.1 KPUB

4.2.1.1 Design and layout of electrical facilities including poles, guys, anchors, transformers, conductors, service drops, and metering.

4.2.1.2 Providing construction details and plans for items to be furnished by Customer as per 4.5.2.

4.2.1.3 Staking all pole locations as per design layout. Customer must have all property corners clearly marked as per 4.05.02 before staking is begun.

4.2.1.4 Providing meter sockets and installing meters.

4.2.1.5 Designating the point of delivery and the meter location.

4.2.1.6 Making all connections at the point of delivery. Providing connectors for this purpose.

4.2.1.7 Designate location of, provide and install service drop attachment on Customer's building.

4.2.1.8 Provide and install service drop to point of delivery (POD).

4.2.2 Customer

4.2.2.1 (Commercial) Properly mark all phases of three phase service conductors.

4.2.2.2 Provide suitable space and structure for service drop attachment.

4.2.2.3 Provide site at final grade, clear of all trees and other obstructions as required by KPUB.

4.2.2.4 Stake all property corners with iron pins or other similar means such that corners are easily identifiable and will not be disturbed.

4.2.2.5 Full set of site plans showing grading, paving, drainage, easements, other utilities or underground facilities. Submittal in electronic CAD format is preferred.

4.2.2.6 Full set of building plans including architectural, mechanical, electrical, and plumbing designs.

4.2.2.7 Final recorded plat of subdivision or development in electronic CAD format.

4.2.2.8 Install meter socket(s) supplied by KPUB for permanent service.

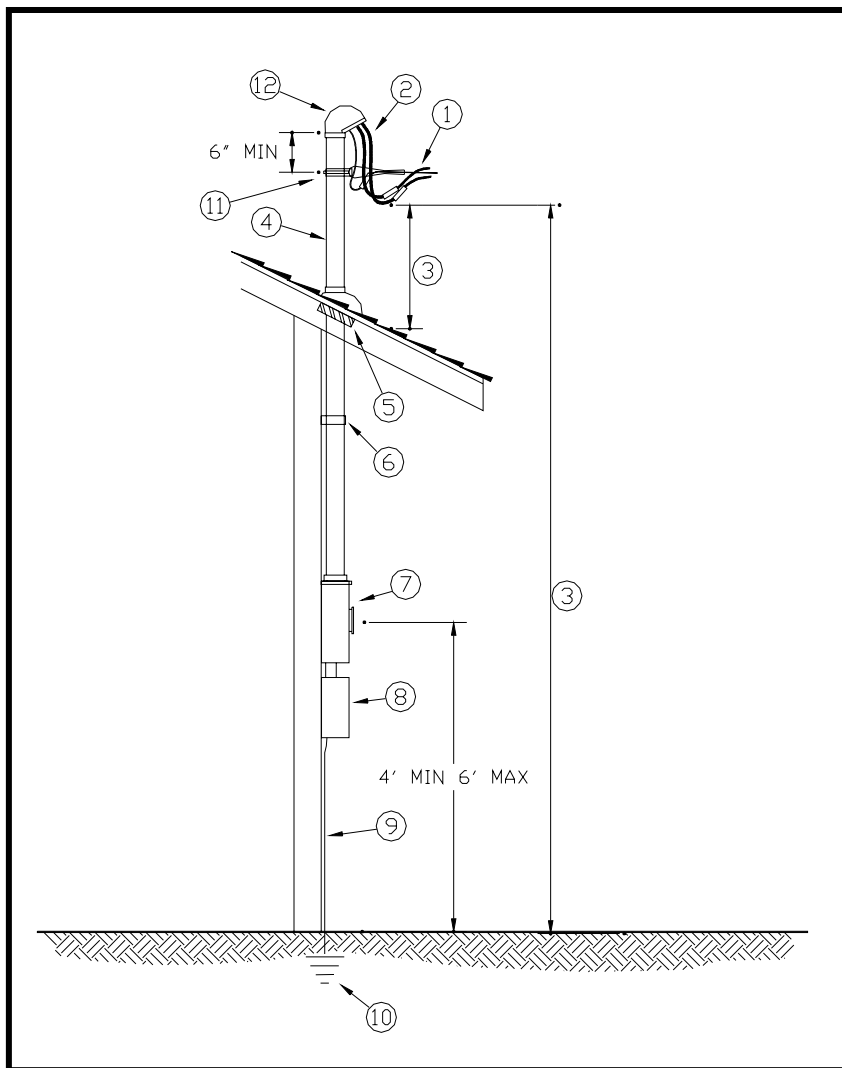
4.2.2.9 Provide easements required by KPUB at no cost to KPUB.

4.2.2.10 Provide written construction schedule including dates for temporary and permanent service.

4.2.2.11 Provide load information including square footage, HVAC unit ratings, motor horsepower, lighting, other equipment ratings and requirements. Specify hours/day of operation for premises and equipment.

4.3 Typical Service Installation

4.3.1 Self Contained Meter



NOTES:

4.3.1.1 Service drop, connectors and service grip provided, owned, and installed by KPUB.

4.3.1.2 Service entrance conductors provided, owned, installed and maintained by Customer. Extend conductors 24" minimum outside service head or as needed for connection to service drop. Minimum #8 Cu or #6 Al NEC approved conductor. Phase conductors shall have black insulation, neutral shall have white or gray insulation or white marking. Connections to service drop shall be made by KPUB.

4.3.1.3 Service mast shall be of sufficient height for the service drop including drip loop to maintain minimum clearances at all points along its span, minimum 18" over roof and 12 ft. over ground. Customer should contact KPUB for site-specific requirements.

4.3.1.4 Service raceway and mast roof kit provided, owned, installed and maintained by Customer. Service raceway shall be rigid galvanized steel or IMC conduit with no coupling above top conduit strap. Customer shall provide service mast of sufficient

strength to support service drop.

4.3.1.5 Mast shall have sufficient additional support where needed, i.e. 2"x6" framing between rafters to reinforce roof decking.

4.3.1.6 Conduit strap clamp for mast support. If mast not used, two or more straps shall be installed.

4.3.1.7 Meter socket provided by KPUB only, and installed and maintained by Customer. Socket shall be anchored securely to wall. Customer shall connect Service entrance conductors to meter socket terminals.

4.3.1.8 Customer's electric service main disconnect, raintight construction.

4.3.1.9 Customer's grounding electrode conductor. This conductor shall originate from the service entrance equipment and shall not terminate in meter socket. Conductor shall be #8 Cu minimum, #6 Cu recommended, and be connected to an NEC approved ground electrode. Conductor shall be protected as required by NEC.

4.3.1.10 Ground electrode as required by the NEC, typically 5/8" x 8ft copper clad ground rod and the top of the rod shall be even with final grade or 4" below the surface.

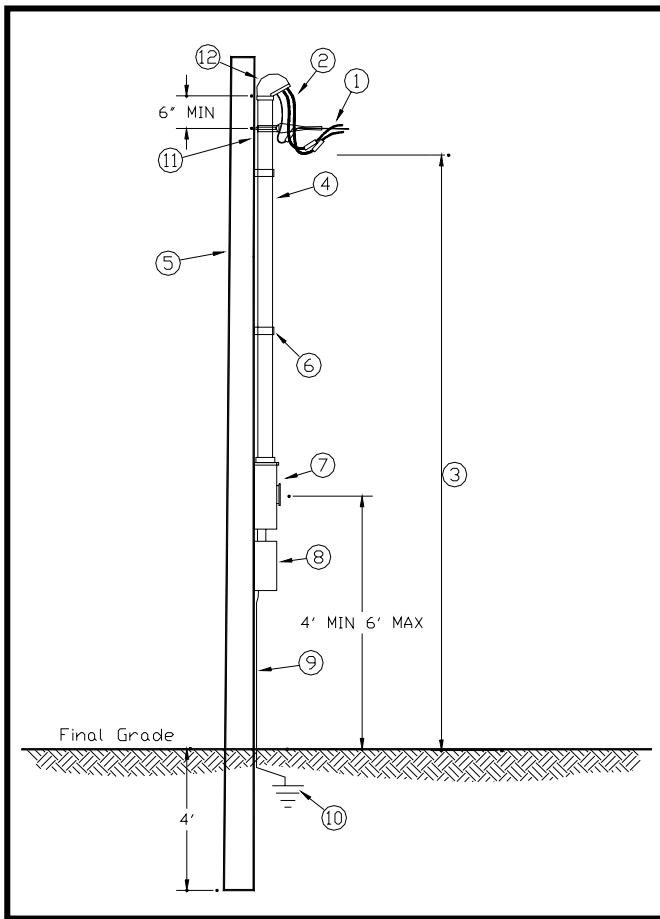
4.3.1.11 Service drop attachment bracket provided and installed by Customer. Service drop attachment point shall be a minimum of 6" below service head.

4.3.1.12 Service head provided and installed by Customer and shall be of raintight construction with insulated bushing.

4.3.2 C.T. Meter

The C.T. metered installation should be similar to that in 4.3.1 except for Note 7, which is not applicable. C.T. metering equipment including the meter is provided and should be installed by KPUB on a KPUB service pole located as near as possible to the POD. KPUB shall provide and install the service drop to the POD on Customer's building.

4.3.3 Meter Pole Installation



NOTES:

4.3.3.1 Service drop, connectors and service grip provided, owned, and installed by KPUB.

4.3.3.2 Service entrance conductors provided, owned, installed and maintained by Customer. Extend conductors 24" minimum outside service head or as needed for connection to service drop. Minimum #8 Cu or #6 Al NEC approved conductor. Phase conductors shall have black insulation, neutral shall have white or gray insulation or white marking. Connections to service drop shall be made by KPUB.

4.3.3.3 Service raceway shall be of sufficient height for the service drop including drip loop to maintain minimum clearances at all points along its span, minimum 12 ft. over ground. Customer should contact KPUB for site-specific requirements.

4.3.3.4 Service raceway provided, owned, installed and maintained by Customer. Service raceway shall be rigid galvanized steel, IMC or EMT conduit with no coupling above top conduit strap.

4.3.3.5 Customer provided and installed treated wood pole, with 4" minimum diameter top. Pole shall be installed without braces. Pole shall be set 4 feet minimum depth in tamped soil or concrete.

4.3.3.6 Conduit strap clamp for raceway support. Two or more straps shall be installed.

4.3.3.7 Meter socket provided by KPUB and installed and maintained by Customer. Socket shall be anchored securely to pole. Customer shall connect Service entrance conductors to meter socket terminals.

4.3.3.8 Customer's electric service main disconnect, raintight construction.

4.3.3.9 Customer's grounding electrode conductor. This conductor shall originate from the main disconnect panel and terminate at the ground rod, but shall not terminate in meter socket. Conductor shall be #8 Cu minimum, #6 Cu recommended, and be connected to an NEC approved ground electrode. Conductor shall be protected as required by NEC.

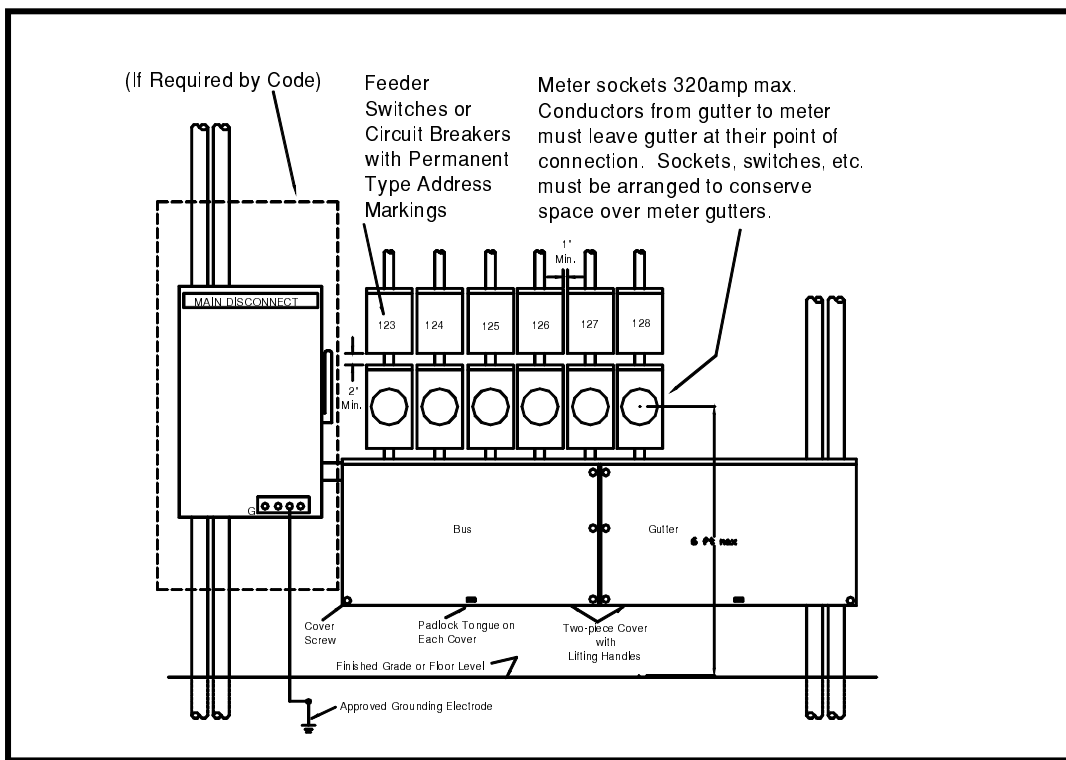
4.3.3.10 Customer's ground electrode as required by the NEC, typically 5/8" x 8ft copper clad ground rod.

4.3.3.11 Service drop attachment bracket provided and installed by Customer. Service drop attachment point shall be a minimum of 6" below service head.

4.3.3.12 Service head provided and installed by Customer and shall be of raintight construction with insulated bushing

4.4 Multiple Occupancy Buildings

Where allowed by the NEC and practical, meter sockets and service entrance equipment should be grouped together to allow installation of one service drop. Service heads shall be located within 3 feet of service drop attachment. Service entrance conductors shall extend minimum of 24" beyond service drop attachment. See also 5.3.2 and 8.6.



4.5 Service Drop Attachments

Customer shall provide and install adequate service attachment. Customer shall make available a safe and adequate structure to which KPUB will attach service conductors. KPUB shall not be responsible for damage or injury to persons or property resulting from

the condition of Customer's building or structure to which service conductors are attached or have been attached.

If service conductors are to be installed on metal or masonry structures, Customer shall install suitable service attachment or anchorage. KPUB should be consulted for recommendations in these cases.

5 UNDERGROUND SERVICE

5.1 Conditions

KPUB should install facilities for electric service along the front lot line or on publicly maintained allies or roadways. Underground service will be made available where feasible based on engineering, operation, and economic evaluations.

The layout of electrical facilities as specified in 5.2.1.1 shall be provided by KPUB only after having received the approved preliminary plat and construction drawings for a subdivision or the full set of building plans for structures.

All underground facilities installed for the distribution of KPUB's electric service up to the point of delivery, including those installed by others for this purpose, are the property of KPUB and are maintained by KPUB. All such installations provided by Customer shall be inspected by KPUB prior to acceptance. Upon notification by KPUB of acceptance of the facilities as installed, Customer shall convey those facilities to KPUB.

Customer shall pay the costs of any rearrangements in the underground electric facilities, which may be required by Customer after installation of such facilities.

Where KPUB provides underground electric service, KPUB retains the right to limit electric service to such underground distribution systems.

Customer shall pay the full cost of relocating or removing existing facilities as requested by Customer.

All new subdivisions in the City shall be served with an underground residential distribution system as per the City's ordinance.

5.2 Responsibilities

5.2.1 KPUB

5.2.1.1 Design and layout of electrical facilities including trench, transformers, cabinets, handholes, conduit, street crossings, metering, and conductors.

5.2.1.2 Providing construction details and plans for items to be furnished by Customer as per 5.2.2.

5.2.1.3 Providing meter sockets and installing meters.

5.2.1.4 Designating the point of delivery and the meter location.

5.2.1.5 Determining the maximum number of service lateral conductors.

5.2.1.6 Making all connections at transformers and handholes, source side connections at meters. Providing connectors for this purpose.

5.2.1.7 (Residential) Provide and install service lateral conductors.

5.2.1.8 Inspection of items to be furnished by Customer as per 5.2.2.

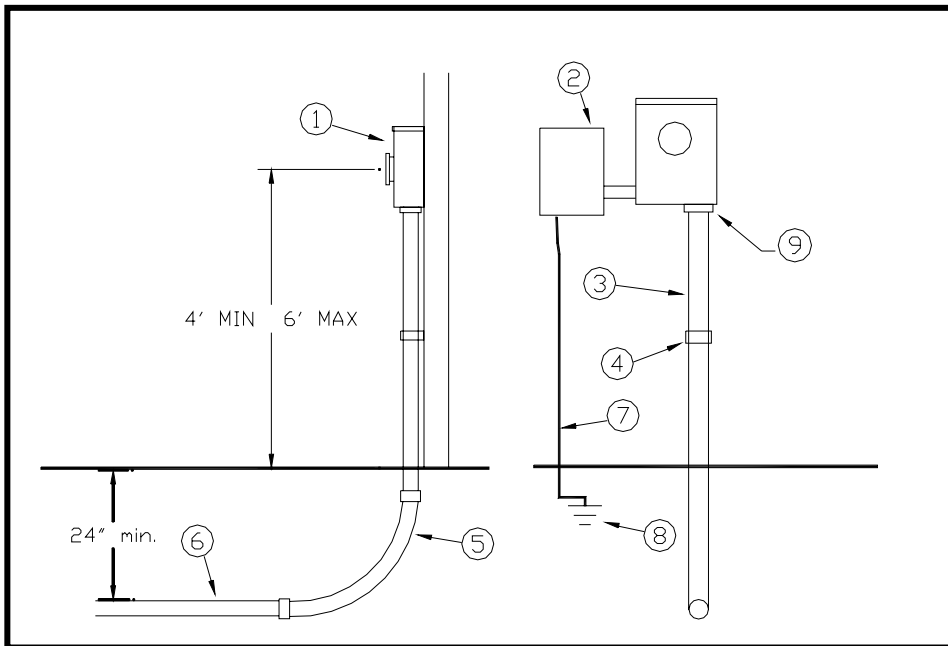
5.2.2 Customer

5.2.2.1 (Commercial) Properly mark all phases of three phase service conductors.

5.2.2.2 Provide all trenching, backfilling, and conduit as per KPUB specifications and design layout.

- 5.2.2.3 Provide site at final grade, clear of all trees and other obstructions as required by KPUB.
- 5.2.2.4 Stake all property corners with iron pins or other similar means such that corners are easily identifiable and will not be disturbed.
- 5.2.2.5 Provide concrete pads for all pad mounted equipment as per KPUB specifications.
- 5.2.2.6 Provide and install handholes as per KPUB specifications.
- 5.2.2.7 Full set of site plans showing grading, paving, drainage, easements, other utilities or underground facilities.
- 5.2.2.8 Full set of building plans including architectural, mechanical, electrical, and plumbing designs.
- 5.2.2.9 Final recorded plat of subdivision or development.
- 5.2.2.10 Install meter socket(s) supplied only by KPUB for permanent service.
- 5.2.2.11 Provide easements required by KPUB at no cost to KPUB.
- 5.2.2.12 (Residential) Provide trench, conduit with mule tape, and backfill for service lateral from transformer or handhole to designated point of delivery.
- 5.2.2.13 (Commercial) Provide, install and maintain trench, conduit, and service conductors from service entrance equipment to designated point of delivery.
- 5.2.2.14 Provide written construction schedule including dates for temporary and permanent service.
- 5.2.2.15 Provide load information including square footage, HVAC unit ratings, motor horsepower, lighting, other equipment ratings and requirements. Specify hours/day of operation for premises and equipment.

5.3 Typical Service Installation
5.3.1 Self Contained Meter



NOTES:

5.3.1.1 Meter socket furnished by KPUB and installed and maintained by Customer. KPUB owned service lateral conductors are installed by KPUB and source (top) connections made by KPUB. Customer's service entrance conductors are installed and connected in socket by Customer. Customer shall not install other unassociated equipment (gas meter, A/C unit, water/sewer services, etc.) within 3 feet of all sides and front of meter socket to allow for adequate working space.

5.3.1.2 Outdoor service entrance equipment or main disconnect, raintight construction, mounted beside meter socket. Customer conductors shall not exit top of meter socket. There shall be no exposed wiring exiting the meter socket or service entrance equipment. All service entrance conductors shall be approved for use in outdoor locations. Neutral conductors shall have white or gray insulation or white marking.

5.3.1.3 Customer provided and installed 2" minimum rigid galvanized steel, PVC Schedule 80, or IMC service raceway. Steel raceway shall be continuously wrapped with Scotch tape No. 50 to 6" above ground line. Insulated conduit bushing required for all conduits terminating in meter socket. Customer shall install conduit to 12" below final grade and fit with female-female PVC adapter. If concrete flat work is poured around raceway, box out or sleeve conduit for mechanical protection.

5.3.1.4 One or more conduit straps to secure raceway to wall.

5.3.1.5 Conduit PVC long radius bends provided and installed by Customer, owned and maintained by KPUB.

5.3.1.6 Service lateral raceway provided and installed by Customer, owned and maintained by KPUB. Raceway conduit shall be Schedule 40 PVC. All joints shall be made as per manufacturer's specification using suitable primer and glue.

5.3.1.7 Customer's grounding electrode conductor. This conductor shall originate from the service entrance equipment and shall not terminate in meter socket. Conductor shall be #8 Cu minimum, #6 Cu recommended, and be connected to an NEC approved ground electrode. Conductor shall be protected as required by NEC.

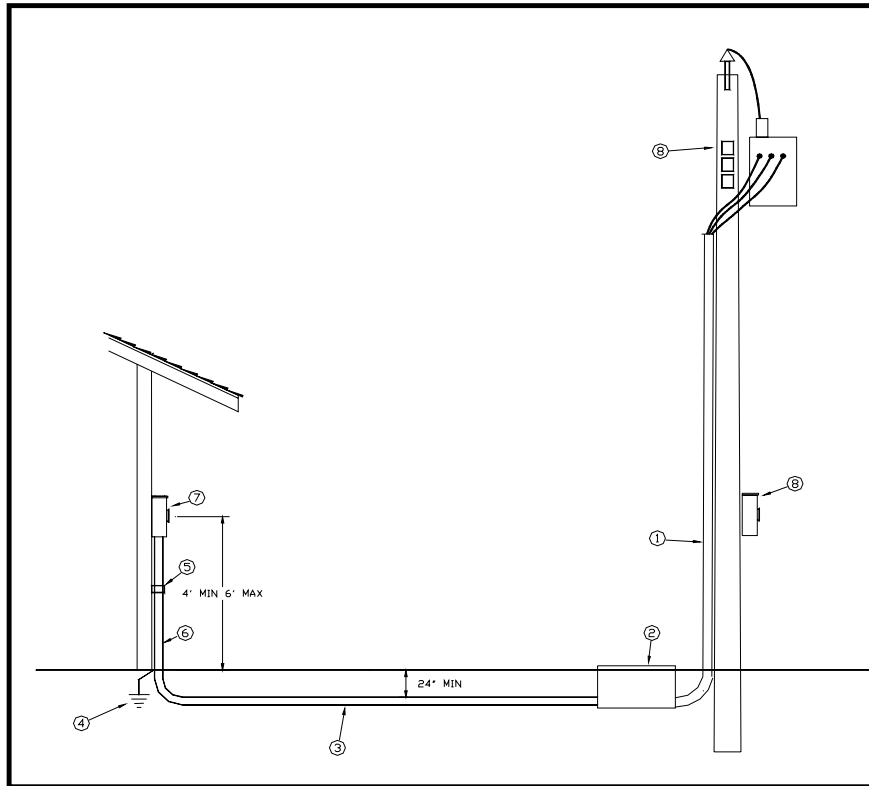
5.3.1.8 Customer ground electrode as required by NEC, typically 5/8" x 8ft copper clad ground rod.

5.3.1.9 Service lateral raceway shall be installed in either corner of meter socket opposite of customer wiring conduit as shown.

5.3.2 Multi-Family Gang Meter

Gang meter sockets are to be approved by KPUB prior to being provided by and installed by Customer. Each of the sockets in the gang shall be clearly and permanently marked by Customer to indicate the location it serves prior to the connection of service. See also 4.4 and 8.6.

5.3.3 U.G. Service from Overhead Transformer



NOTES:

5.3.3.1 Underground service lateral riser provided and installed by KPUB.

5.3.3.2 Handhole provided and installed by KPUB.

5.3.3.2.1 Residential. This item should be installed where more than one service is expected to be served from this location.

5.3.3.2.2 Commercial. This item shall be installed for all services and shall be the POD. Customer shall install service lateral conductors from building to handhole where KPUB shall make up connections.

5.3.3.3 Underground service lateral raceway installed by Customer, and owned and maintained by: (1) KPUB if residential; (2) Customer if commercial. Raceway conduit shall be Schedule 40 PVC. All joints shall be made as per manufacturer's specification using suitable primer and glue.

5.3.3.4 Customer ground electrode as required by NEC, typically 5/8" x 8ft copper clad ground rod.

5.3.3.5 One or more conduit straps to secure raceway to wall.

5.3.3.6 Customer provided and installed 2" minimum rigid galvanized steel, PVC Schedule 80, or IMC service raceway. Steel raceway shall be continuously wrapped with Scotch tape No. 50 to 6" above ground line. Insulated conduit bushing required for all conduits terminating in meter socket. Customer shall install conduit to 12" below final grade and fit with female-female PVC adapter. If concrete flat work is poured around raceway, box out or sleeve conduit for mechanical protection.

5.3.3.7 Meter socket furnished by KPUB and installed by Customer. KPUB owned service lateral conductors are installed by KPUB and source (top) connections made by KPUB. Customer's service entrance conductors are installed and connected in socket by Customer. Customer shall not install other unassociated equipment (gas meter, A/C unit, water/sewer services, etc.) within 3 feet of all sides and front of meter socket to allow for adequate working space. See 5.3.1.

5.3.3.8 C.T. metering equipment, if required, including the meter socket is provided and should be installed by KPUB on the pole with the service lateral riser.

5.3.4 C.T. Meter

The C.T. metered installation for underground service from overhead transformer should be similar to that in 5.3.3 except for Note 7, which is not applicable, reference 5.3.3.8. For pad mounted transformer applications the instrument rated transformers and meter should be located on the pad with the service transformer. Consult with KPUB for specific instructions.

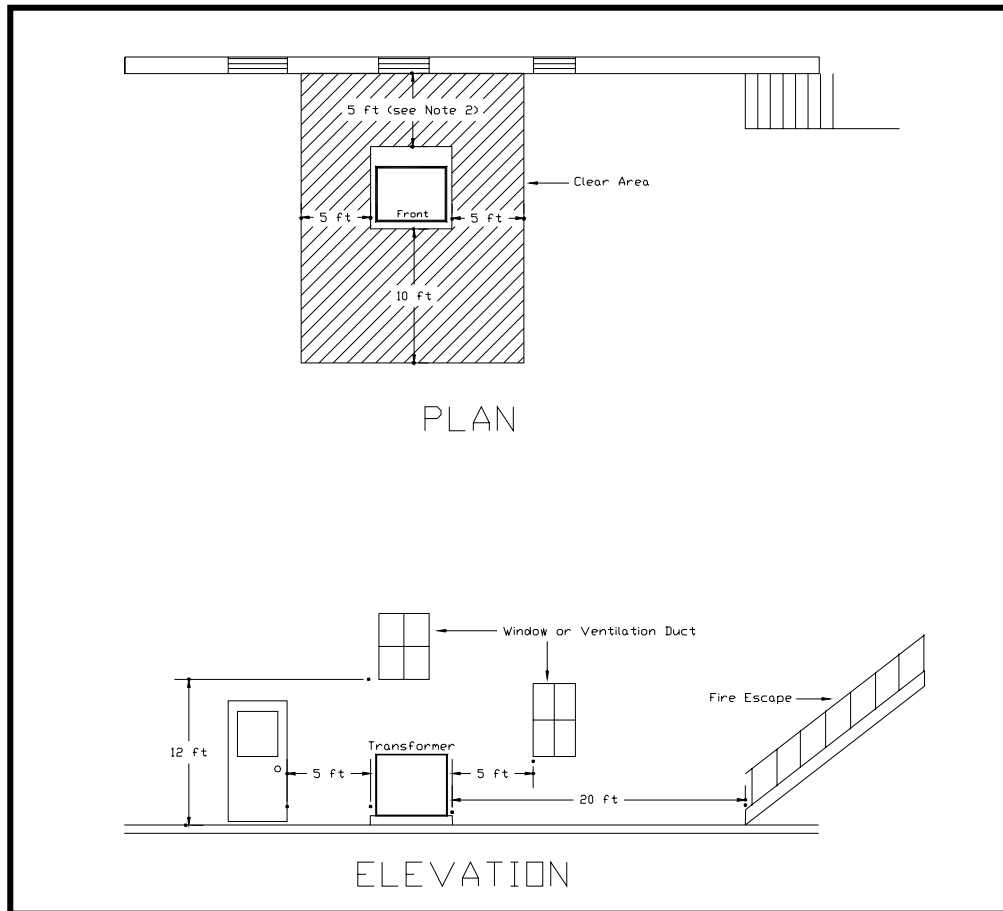
5.3.5 Mobile Home Pedestal

Customer shall provide, install, and maintain meter pedestal that meets KPUB specifications. KPUB will install and connect service lateral to pedestal. KPUB shall designate the location of the pedestal.

5.4 Maximum Number of Service Runs

3 Phase Transformer kVA	Maximum Number 4" Conduits	
	120/208V	277/480V
75-300	6	6
500	8	6
750	12	6
1000	16	8
1500	-	12
2000	-	16
2500	-	16

Clearances from Pad mounted Equipment



NOTES:

5.5.1.15.4.1.1 All dimensions are minimums

5.5.1.25.4.1.2 Increase clearance to 12 feet if window or vent behind equipment is less than 12 feet above ground and less than 5 feet lateral separation.

5.5.1.35.4.1.3 This drawing is applicable only to brick or masonry structures with a three hour fire rating. For other applications additional protection measures will be necessary.

5.5.1.45.4.1.4 Liquid flow of area surrounding equipment shall be away from building.

5.5.1.55.4.1.5 There shall not be any above ground obstructions, such as shrubs, gas meters, fencing, air conditioning units, etc. within 5 feet of pad or any overhangs above pad facilities.

5.5.1.65.4.1.6 When installed on private property there shall not be any piping or conduit under the pad other than those entering the equipment except for telephone/tv when installed in conduit at the same time electrical conduit is installed.

5.5.1.75.4.1.7 Equipment shall not obstruct fire lanes.

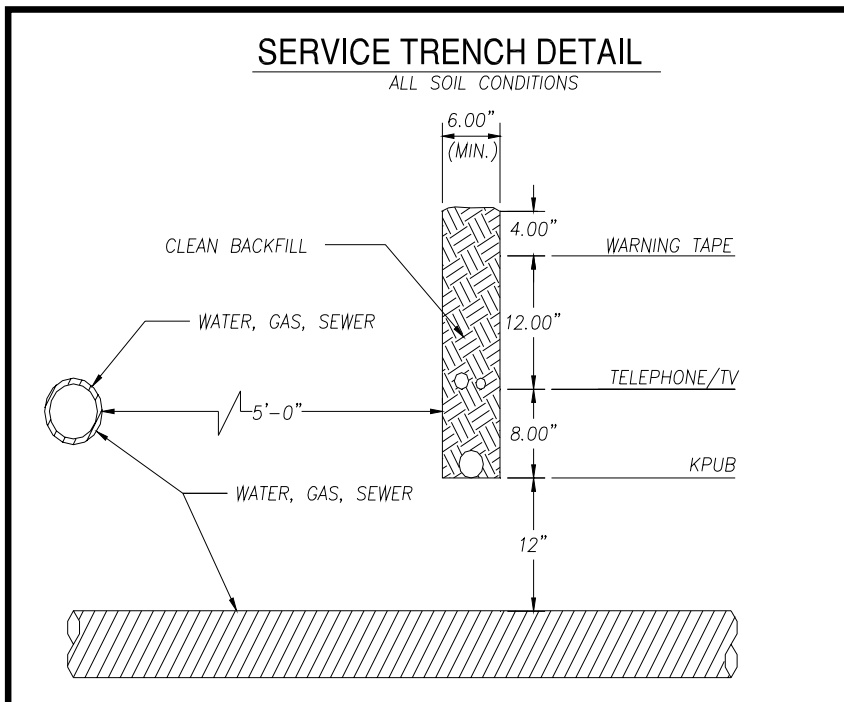
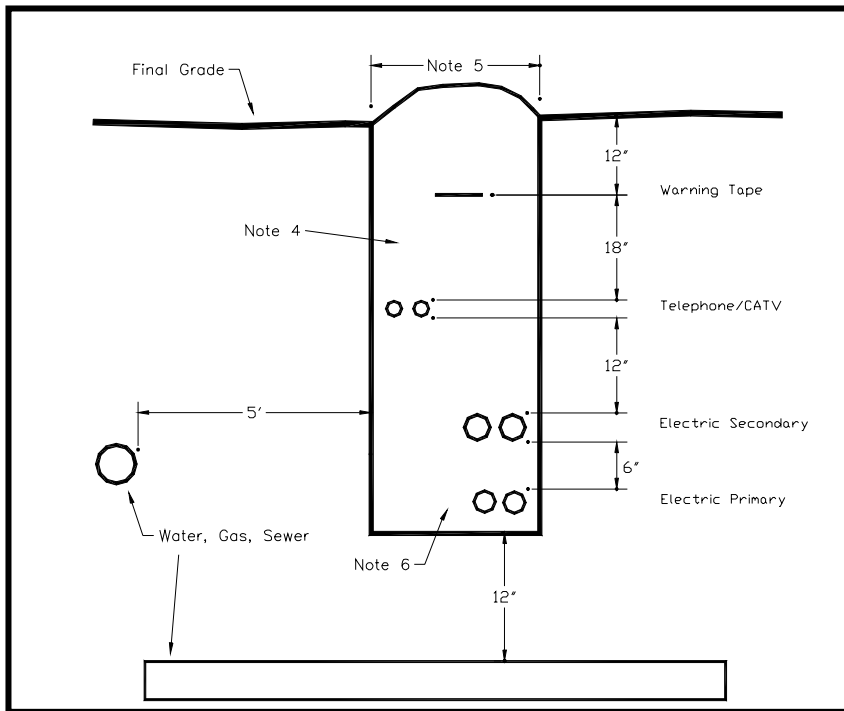
5.65.5 Trenching and Conduit

Placement of utilities within street right-of-way should be coordinated with the City and other utilities to minimize conflicts at crossings and maintain needed clearances. KPUB

Formatted: Bullets and Numbering

Formatted: Bullets and Numbering

shall provide the layout and route for underground electrical trench and conduit.



NOTES:

5.6.1.15.5.1.1 All dimensions are minimums and may require adjustments due to site-specific requirements, avoidance of obstructions, other utilities, etc.

5.6.1.25.5.1.2 Trench and completed conduit system shall be inspected by KPUB before backfill.

5.6.1.35.5.1.3 All conduits for KPUB facilities shall be PVC Schedule 40, except for bends for switchgear, risers, and other as specified which should be rigid galvanized steel. Galvanized conduit shall be wrapped continuously with Scotch tape No. 50 to 6" above ground line.

5.6.1.45.5.1.4 Backfill to be select material, 1/4" maximum aggregate size.

5.6.1.55.5.1.5 Minimum trench width shall be 18".

5.6.1.65.5.1.6 Trench shall be free of debris and bottom shall be undisturbed, tamped, or smooth earth or sand. Where excavation is in rock, conduit shall be laid on 4" of clean tamped backfill.

5.6.1.75.5.1.7 Install 1800 lb. Mule Tape without splices in each conduit. Conduit shall be clear of any debris or soil and should be swabbed after entire run is complete. Conduit shall be plugged or capped at ends with molded sealers on primary and PVC caps on secondary.

5.6.1.85.5.1.8 Backfill shall be compacted to not less than 95% of the density of the surrounding undisturbed soil.

5.6.1.95.5.1.9 All conduit bends for primary cable shall have a 36" radius.

5.6.1.105.5.1.10 Crossings of other utilities shall be made with a minimum of 12" separation and backfilled with stable sand (one sack concrete mix) a distance of 5 feet both sides of the crossing.

5.6.1.115.5.1.11 All PVC conduit sections shall be joined using colored chemical cleaner and colored cement

5.6.1.125.5.1.12 Stub up conduit for risers shall be located by KPUB. Conduit shall be swept up not more than 6" above final grade. For three phase installations the conduit shall be grouped in triangular configuration at the pole.

5.6.1.135.5.1.13 Multiphase conduit installations shall have each phase uniquely marked at each end of the conduit run.

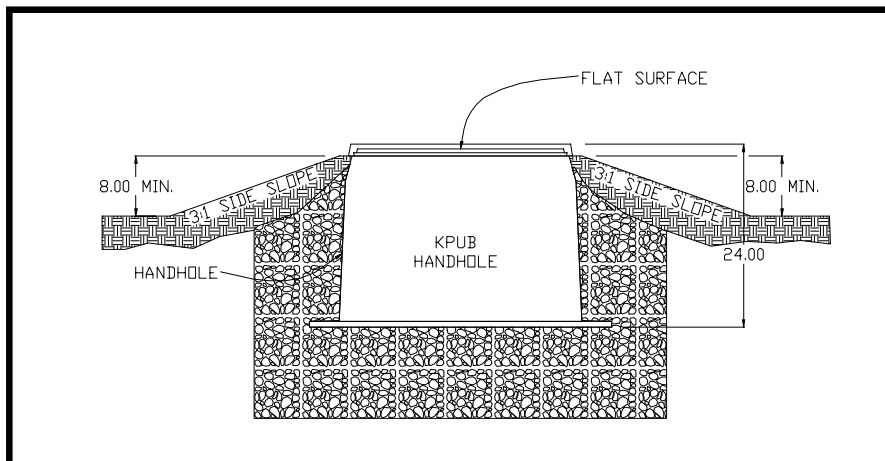
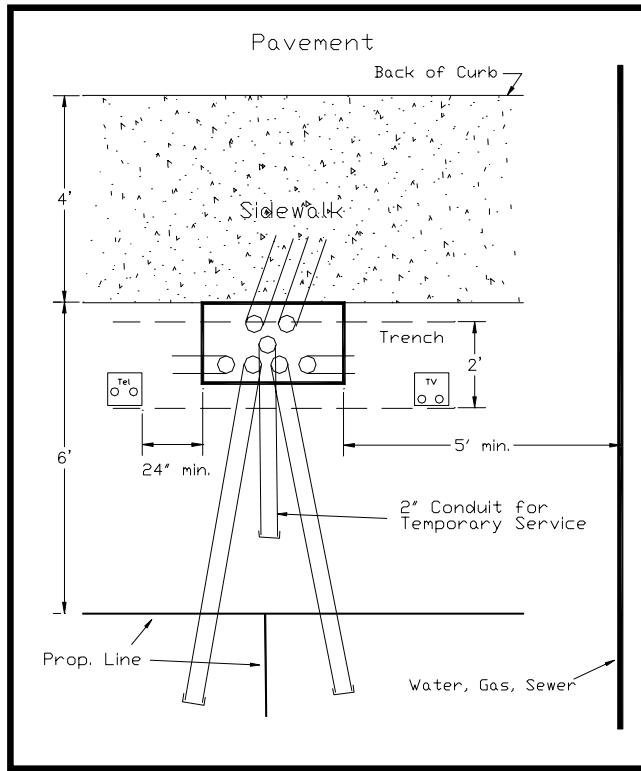
Formatted: Bullets and Numbering

Formatted: Bullets and Numbering

5.75.6 Handholes

Handholes shall be installed level with final grade, or 6-8" above rough grade to allow for topsoil and sod. Lids shall be above final grade including topsoil.

Service conduits shall be installed to past the lot line, capped with pvc caps and location marked with iron pin or similar durable item so they can be found when Customer requests service. Conduits shall be stubbed into handhole with 45° bends



NOTES:

5.7.1.15.6.1.1 Excavate total handhole area plus an additional 12" at a depth of 12", and compact at 95% of the density of the surrounding undisturbed soil.

5.7.1.25.6.1.2 Install 3/8"-1/2" gravel level to top of excavated area.

5.7.1.35.6.1.3 Handhole to be parallel to all streets. Unless notified otherwise by KPUB personnel.

Formatted: Bullets and Numbering

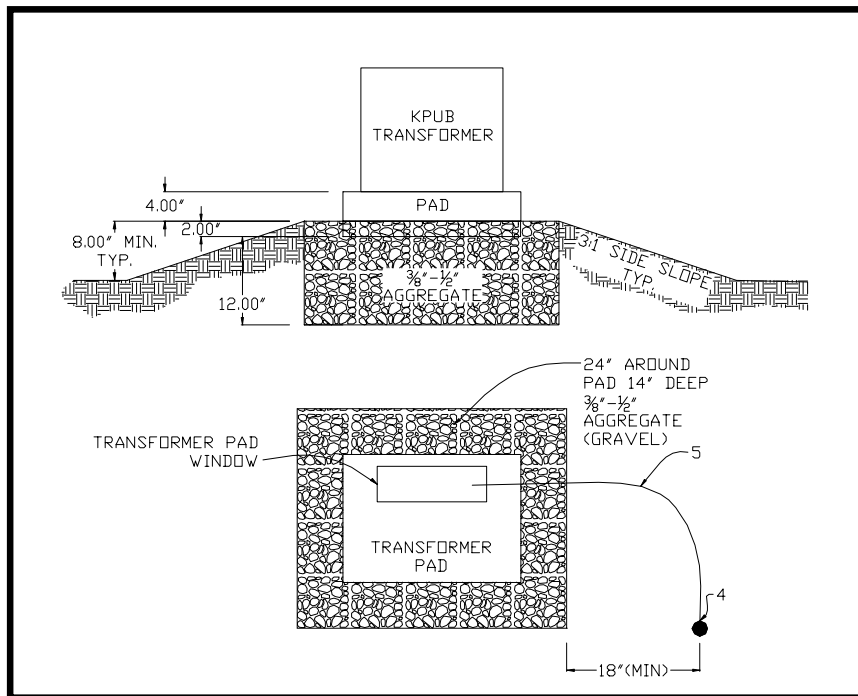
5.85.7 Transformer Pads

Transformer pads shall be installed level with final grade, or 6-8" above rough grade to allow for topsoil and sod.

Formatted: Bullets and Numbering

Service conduits shall be installed to past the lot line, capped with pvc caps and location marked with iron pin or similar durable item so they can be found when Customer requests service.

Notes in 5.8.4 may apply to any pad. Check with KPUB for specific instructions.



NOTES:

5.8.1.15.7.1.1 Excavate total pad area plus an additional 24" at a depth of 14", and compact at 95% of the density of the surrounding undisturbed soil.

5.8.1.25.7.1.2 Install 3/8"-1/2" gravel level to top of excavated area.

5.8.1.35.7.1.3 Transformer pad window to be parallel to all streets. Unless notified otherwise by KPUB personnel.

5.7.1.4 5/8"x8" ground rod shall be installed 18" minimum from edge of excavated area in undisturbed soil and not in trenchline. Top of ground rod shall be 4" below final grade.

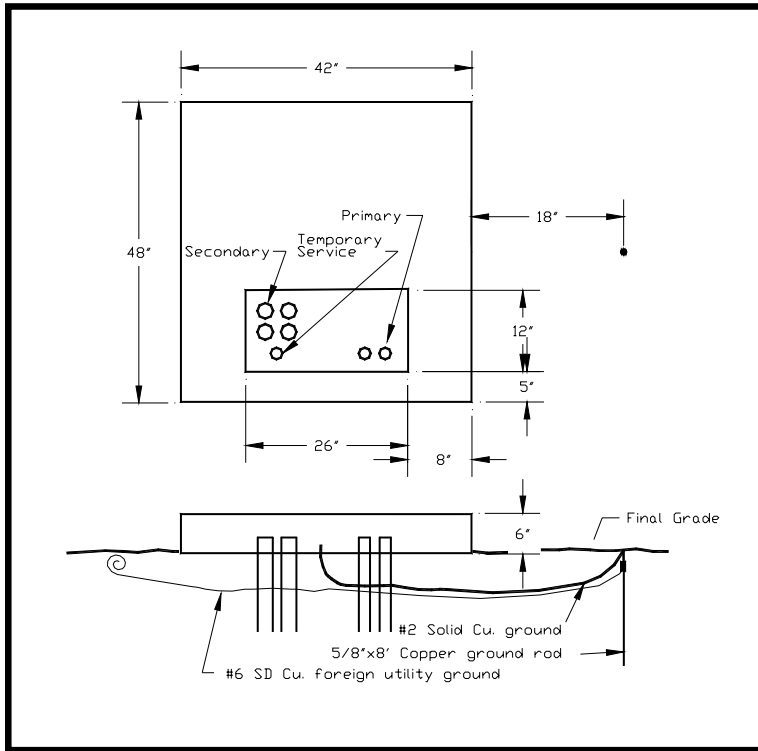
5.7.1.5 Install (1)#2 solid copper ground wire. Connect with ground clamp to rod. Leave

Formatted: Bullets and Numbering

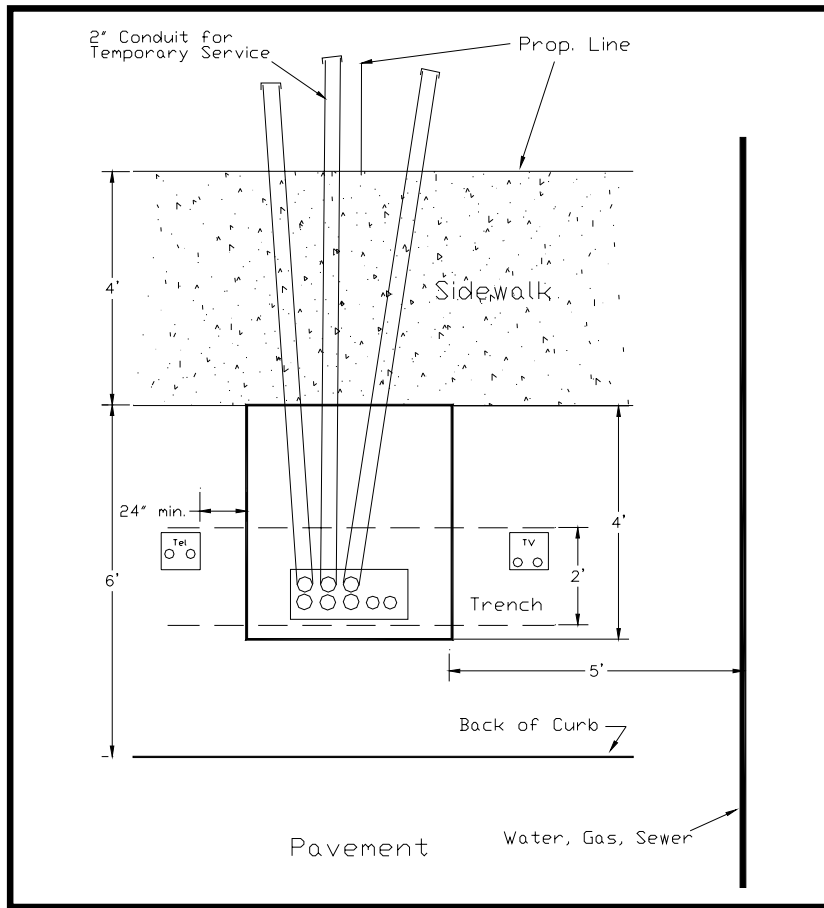
36" inside pad.

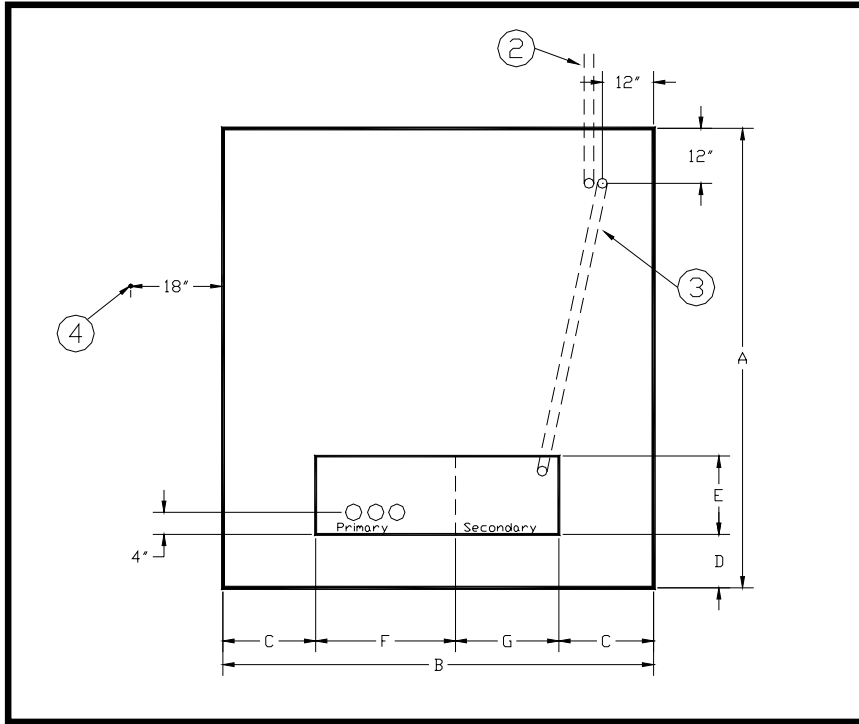
5.8.25.7.2 Single Phase Residential - Detail

Formatted: Bullets and Numbering



5.7.4 Single Phase Residential - Location behind curb





KVA	A	B	C	D	E	F	G
75-150	76	76	17	12	14	24	18
225-500	94	94	25	12	14	24	20
750-1000	114	96	22	12	14	27	25
1500-2500	132	114	29	12	20	31	25

NOTES:

5.8.5.15.7.5.1 Three-phase transformer pads shall be pre-cast to KPUB specifications by approved suppliers. Contact KPUB for obtaining approved supplier information.

5.8.5.25.7.5.2 Optional customer 1" conduit for energy management system wiring if required connecting to metering equipment. See 8.11.

5.8.5.35.7.5.3 Instrument transformer secondary wiring conduit shall be 1 1/4" Schedule 40 PVC.

5.8.5.45.7.5.4 Ground rods shall be installed 18" in each direction from trench line and pad, in undisturbed soil, and shall be 5/8" x 8 ft Cu. Rod shall be level with ground or 4" below the surface.

5.8.5.55.7.5.5 Tamp all disturbed soil underneath pad to 95% compaction. Piers may be required where backfilled soil is deeper than 12". Contact KPUB for determination and specifications.

5.8.5.65.7.5.6 Pad surface shall be level, smooth, flat, and even across the entire

dimension.

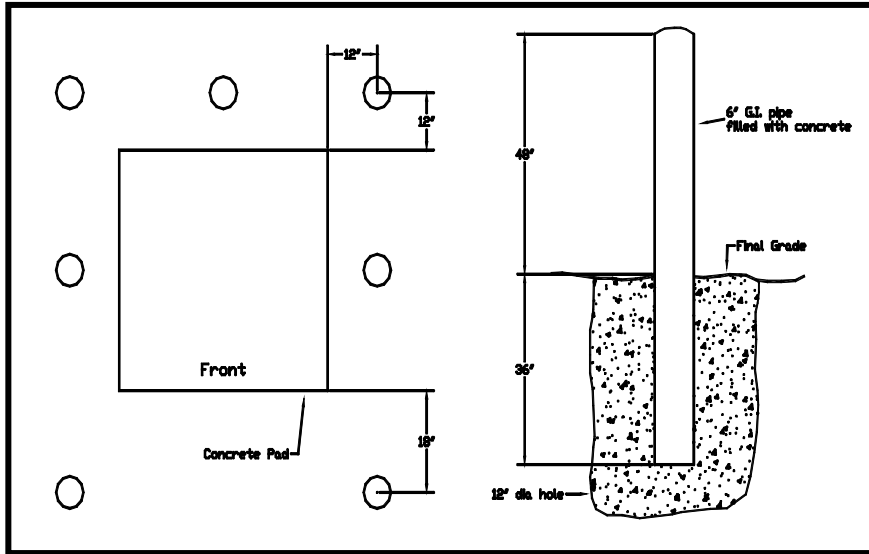
5.8.5.75.7.5.7 Conduits shall be swept up into pad window not more than 2" above the top of the pad.

5.8.5.85.7.5.8 Surrounding grade shall be of slope to allow run-off without erosion. If this is not achievable while maintaining clearances required in 5.4, other devices shall be installed. Contact KPUB for determination and specifications for approved retaining devices.

5.8.65.7.6 **Guard Posts**

Customer shall provide and install guard posts to protect pad mounted equipment as determined by KPUB. If customer chooses to, they should be painted either safety yellow or orange.

Formatted: Bullets and Numbering



6

TEMPORARY SERVICE

6.1 Availability

Temporary Service shall be provided for construction, fairs and other similar purposes. Customer must make application for service at KPUB office and execute an agreement.

When temporary service is requested for construction purposes, and such temporary line extension results in a permanent service upon completion of the construction, KPUB will, at its option, extend temporary service under the appropriate rule for permanent extensions.

6.2 Charge

Customer shall pay in advance a charge for the installation and removal of facilities required to furnish temporary service.

6.3 Rate

The monthly billing will be in accordance with one of KPUB's General Service rates. A deposit may also be required according to the rate schedules and the Service Regulations of KPUB.

6.4 Term

The term for temporary service shall not exceed one year.

6.5 Customer's Installation

Service entrance wiring and equipment shall be supplied and installed by Customer, including the meter socket. If not installed on a permanent structure, a temporary pole shall be installed by the Customer in accordance with Section 6.6.

The location for the temporary pole, service, and other temporary facilities shall be determined by KPUB. The location should be no more than 25 feet from the nearest KPUB transformer or service pole.

Customer's installation shall be made and inspected in the same manner as permanent service.

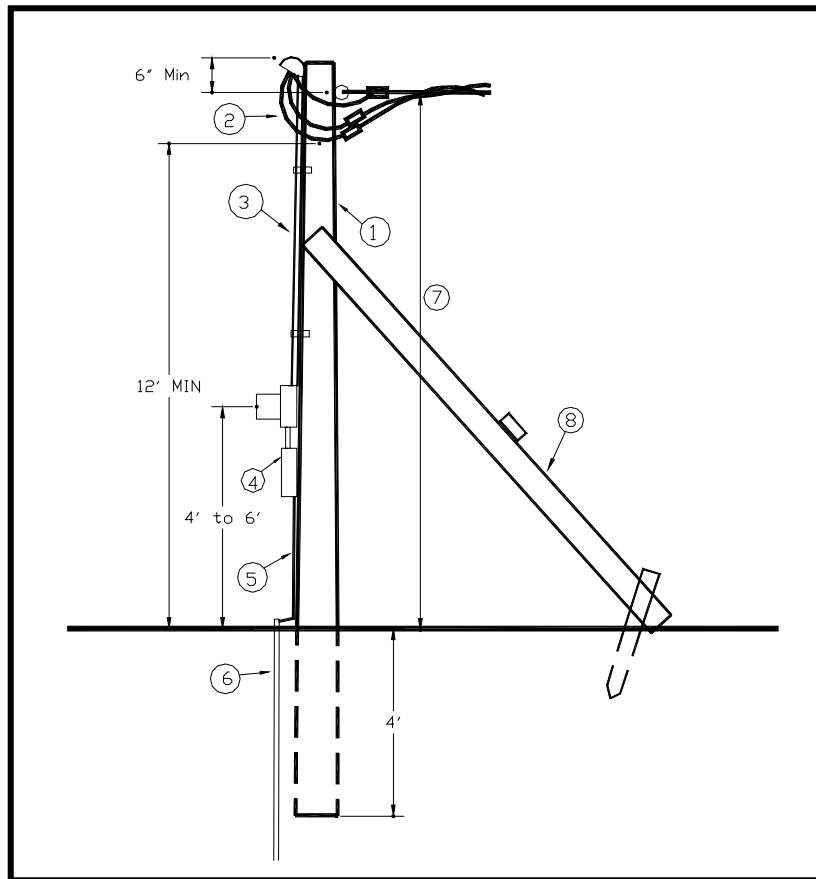
Customer shall not allow pole to be moved or tampered with as long as KPUB service wires are attached.

All single phase receptacle outlets for construction sites shall have approved ground fault protection for personnel safety.

6.6 Typical Service Installation

6.6.1 Overhead

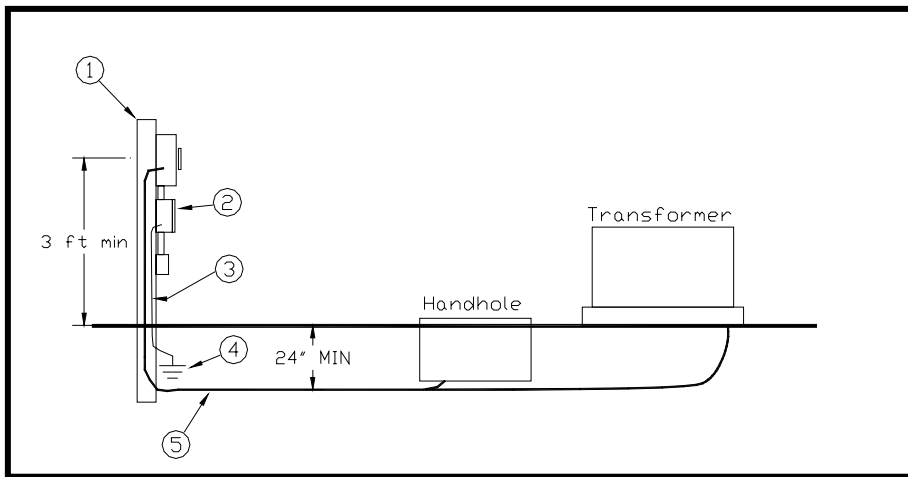
Service drop (conductors, attachment, grips, and connectors) shall be owned and installed by KPUB. All other materials and equipment provided and installed by Customer.



NOTES:

- 6.6.1.1** Pole shall be unspliced treated wood with 4" minimum diameter top.
- 6.6.1.2** Service entrance conductors shall extend 24" minimum out of service head. Minimum #8 Cu or #6 Al conductor to be NEC approved for this use. Phase conductors shall be black insulation, neutral shall be white insulation or bare.
- 6.6.1.3** Service head and raceway shall be attached to pole with minimum of 2 conduit straps. Raceway conduit shall be rigid galvanized steel, IMC or EMT with no coupling above top conduit strap.
- 6.6.1.4** Weatherproof main service disconnect or breaker enclosure provided and installed by Customer. There shall not be any exposed wiring exiting meter socket or service entrance equipment.
- 6.6.1.5** Grounding electrode conductor shall not terminate in meter socket. Conductor shall be #8 Cu minimum, #6 Cu recommended.
- 6.6.1.6** Ground electrode shall be 5/8" x 8 ft. copper clad rod or other NEC approved electrode.
- 6.6.1.7** Pole shall provide sufficient height for service drop and drip loop to meet minimum clearances specified by KPUB. The minimum clearance shall not be less than 12 ft. above ground.
- 6.6.1.8** 2x4 braces shall be installed when pole cannot be set to the depth of 4 ft. Under any circumstances pole shall not be set less than 3 ft. deep.

6.6.2 Underground



NOTES:

6.6.2.1 Pole shall be 4" x 4" minimum treated wood, unspliced, and set minimum of 2 feet deep. Pole should be set within 3 feet of the transformer or handhole.

6.6.2.2 Weatherproof main service disconnect or breaker enclosure provided and installed by Customer. There shall not be any exposed wiring exiting meter socket or service entrance equipment.

6.6.2.3 Grounding electrode conductor shall not terminate in meter socket. Conductor shall be #8 Cu minimum, #6 Cu recommended.

6.6.2.4 Ground electrode shall be 5/8" x 8 ft. copper clad rod or other NEC approved electrode.

6.6.2.5 Customer should trench to within 2 feet of transformer, pedestal, or handhole. KPUB will make final trenching and connections. Customer shall provide sufficient conduit to reach inside the transformer or handhole. Customer's wiring shall be protected by metal conduit, flexible or rigid in all areas exposed above ground.

7

STREET LIGHTING

7.1 General

Street light service will be provided by KPUB according to the applicable rate schedules for KPUB standard voltage, wattage, bulb type, and lumen output utilizing KPUB approved fixtures and light standard.

Street lighting designs shall conform to the guidelines as established by the city for which they are installed.

Requests for street lighting shall be made by the appropriate governmental authority or legal homeowners association using forms for this purpose available from KPUB.

Street lighting service shall be provided to public streets, alleys, highways, parks, and other public grounds by means of light fixtures installed on either (1) existing overhead distribution facilities, (2) new poles installed by KPUB expressly for street lighting or (3) light standards supplied and installed by Customer, Developer, or City.

Streetlights in areas with overhead electric facilities should be served overhead.
Streetlights in areas with underground electric facilities should be served underground.

Street lighting design and installation should be coordinated with the design and installation of electric distribution facilities. Developers should contact KPUB regarding provisions for streetlights in subdivisions at the time subdivision plat is presented for electric facility design.

Streetlights should be installed to coincide with the building activity within the subdivision. Luminaires should not be installed more than 500 feet from the last residence in a partially developed subdivision.

Conditions for street lighting are the same as specified in Section 5.1.

7.2 Maintenance

KPUB shall provide all necessary maintenance to satisfactorily operate streetlights during nighttime hours. Upon notification of street light malfunction, repair shall normally be made by KPUB within three working days.

7.3 Mercury Vapor Lamps

High pressure sodium and mercury vapor lamps shall not be commingled; group replacements shall be performed by intersection or block.

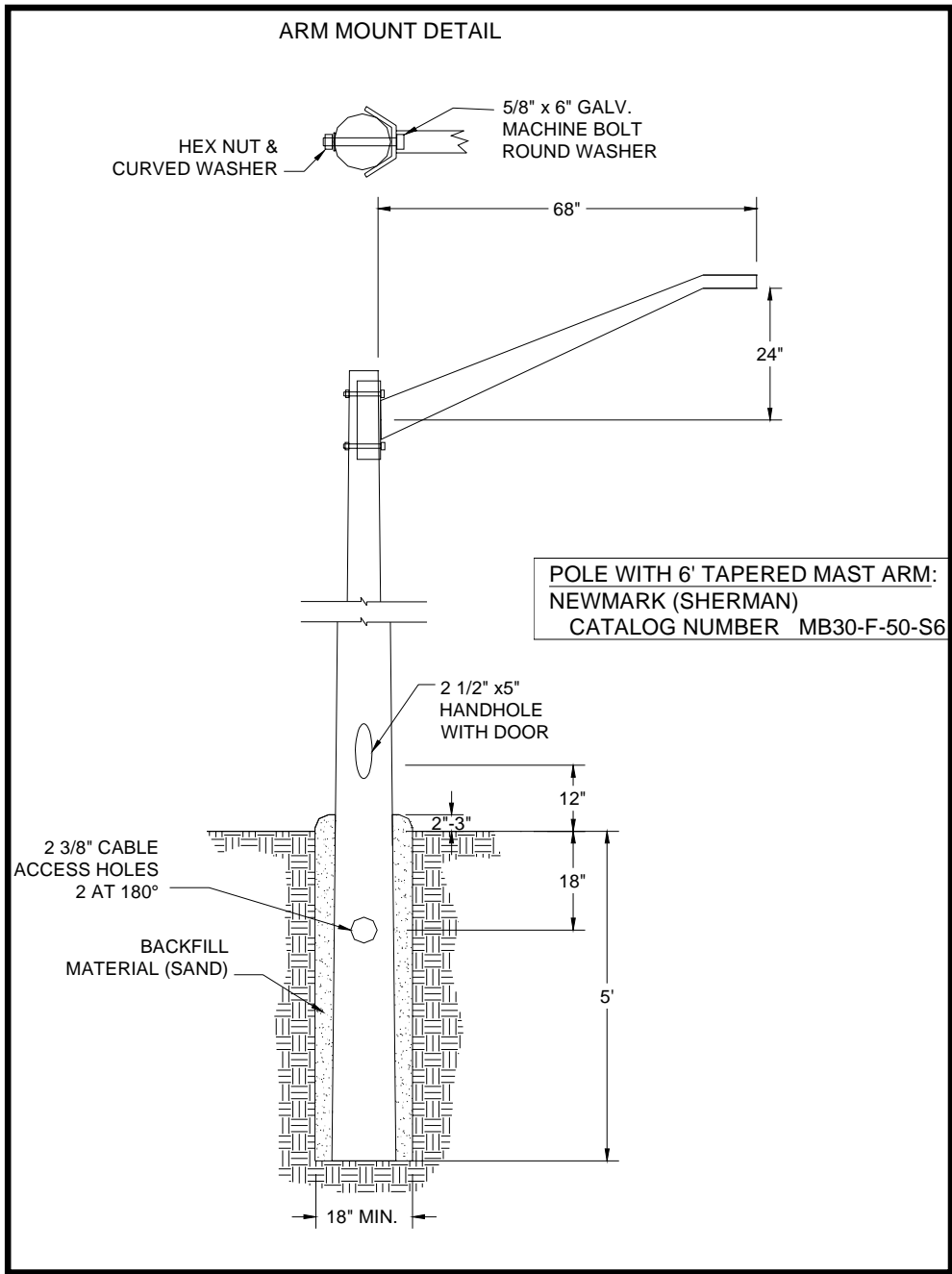
7.4 Metering

Street lighting systems should not be metered except where non-standard or Customer owned systems are to be served.

All traffic signal installations shall be metered as per KPUB rates and tariffs.

KPUB shall determine the POD, metering location, and source of supply for all traffic and street lighting systems.

7.5 Street Light Detail



Formatted: Bullets and Numbering

7.57.6 Responsibilities

7.5.17.6.1 KPUB

7.5.17.6.1.1 Provide, install and maintain street light luminaires.

7.5.17.6.1.2 (Overhead) Provide and install mast arms.

7.5.17.6.1.3 Make all connections to luminaires and to transformer or handhole.

7.5.17.6.1.4 Provide and install all service conductor and protective devices to streetlights.

7.5.17.6.1.5 Provide complete street lighting layout on subdivision plat as per city specifications.

7.5.17.6.1.6 Inspection of items to be furnished by Customer as per 7.5.2.

7.5.27.6.2 Developer

7.5.27.6.2.1 (Underground) Provide and install trench, conduit, and light standard with mast arm as per KPUB specifications.

7.5.27.6.2.2 (Underground) Install wiring in light standard to consist of 3 #12 Cu THHN, 1 green, 1 black, and 1 white. Wiring to extend 24" out of mast arm and roll 12" excess in handhole of standard.

7.5.27.6.2.3 Provide easements required by KPUB at no cost to KPUB.

7.5.37.6.3 City

7.5.37.6.3.1 Provide illumination standards for design and layout of street lighting.

7.5.37.6.3.2 Approve, control and request of KPUB the adjustment, addition, removal, or modification of the quantity and location of streetlights.

← --- Formatted: Bullets and Numbering

← --- Formatted: Bullets and Numbering

8 METERING AND METERING EQUIPMENT

8.1 General

KPUB supplies and installs electric meters to measure Customer's electric power usage. Only KPUB employees or authorized persons shall install or remove, turn on or off, KPUB meters or make any modifications or changes, which may affect the accuracy of KPUB meters.

8.2 Location of Metering Equipment

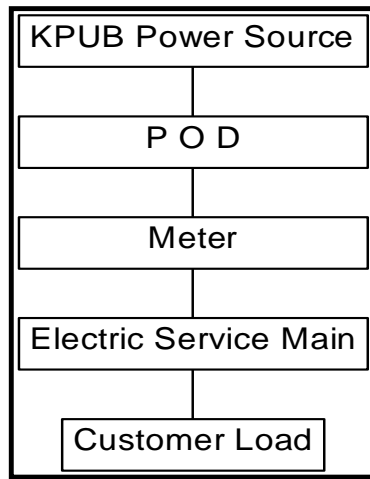
Meters and meter equipment shall be installed in a location determined by KPUB. All meter locations shall be outside the building and as near as possible to the point of delivery.

Customer shall pay the actual cost of installing additional facilities to provide service to a meter location other than that designated by KPUB.

Customer shall provide a proper space, accessible at all times, clean, safe, and free from vibration for the installation of metering equipment. KPUB may remove, or require customer to remove, as necessary to obtain working space, any debris, equipment, landscaping, and other obstacles.

8.3 Point of Delivery

The location of the POD shall be designated by KPUB and may differ from the location of the metering equipment. Customer shall extend service entrance conductors to the point of delivery.



Only authorized KPUB employees are permitted to make and energize the connection to Customer's service entrance conductors.

8.4 Meter Sockets

KPUB shall provide and the Customer shall install and maintain the meter socket. Customer shall be responsible in the event of damage, injury, loose connection, or overload of meter socket. A replacement meter socket may be purchased from KPUB at Customer's expense. Service shall not be reconnected until approved by local inspection authorities.

The meter socket shall be used exclusively for KPUB's metering, and shall not be used as a connection enclosure, or raceway for conductors not required for metering.

KPUB may refuse service if the incorrect socket is installed or if the socket is wired incorrectly. No meter sockets other than those provided by KPUB will be connected on permanent services.

8.5 Meter Socket Ampacity and Conductor Sizes

The meter socket ampacity shall be determined by KPUB using customer provided information on electric service requirements.

The connectors provided in meter sockets are rated for aluminum or copper. Aluminum conductors require wire brushing to remove oxide film and application of an oxide inhibitor immediately before installation. Customer shall not exceed the number of conductors for which KPUB provided connectors are intended.

Maximum Amps	Voltage	Phase	Hub Size	Max No. Conductor/Phase, Connector Range	Approx Dim WxHxD In.
200	120/240	1	2"	One #6 - 350 MCM	12 x 15 x 5
320	120/240	1	3"	Two #6 – 600 MCM	13 x 35 x 6
100	120/208/240	3	2"	One #8 - #2/0	8 x 15 x 5
200	120/208/240	3	2"	One #6 - 350 MCM	10 x 19 x 5
320	120/208/240	3	3"	Two #6 – 600 MCM	19 x 35 x 7

8.6 Identification of Meter Sockets and Main Disconnects

Meter sockets and main disconnects on multiple occupancy buildings or services requiring more than one meter shall be clearly and permanently identified by Customer as to street address, apartment number, or building section that each socket serves utilizing adhesive labels suitable for outdoor use.

8.7 Work Space

Customer shall keep meters and metering equipment at all times readily accessible and free from obstructions.

A minimum working space of three feet on all sides of metering equipment shall be kept clear of walls, shrubs, other equipment, doors, and other obstructions. KPUB may remove, or require customer to remove, to obtain working space, any debris, equipment, landscaping, and other obstacles.

8.8 Instrument Transformers

KPUB provides, installs and maintains instrument transformers when Customer's service requirements exceed the capacity of self-contained metering equipment. Voltage transformers are used whenever the nominal voltage to ground exceeds 240 volts, i.e. 480 volt self-contained metering is not permitted.

Exception: By written permission from KPUB, 480 volt self-contained metering may be permitted, but will require that the electric service main disconnect be installed on the source side of the meter.

8.9 Primary Metering

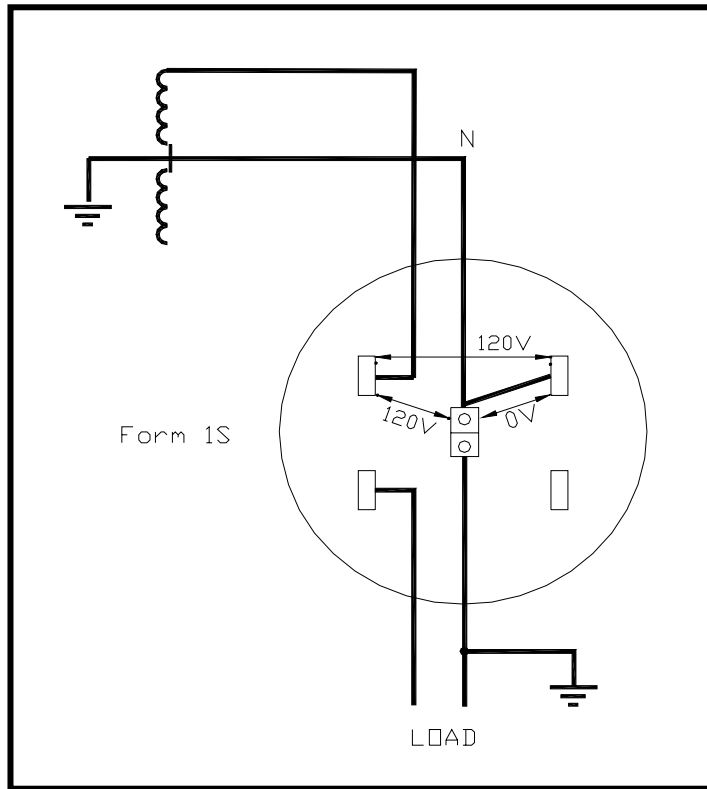
Primary metering equipment may be used by KPUB under special circumstances such as when Customer owns and operates an electrical distribution system. KPUB may install additional protective equipment on the source side of the point of delivery to protect the primary metering equipment and to isolate Customer's system from KPUB's.

Primary metering is not available for multi-family housing installations.

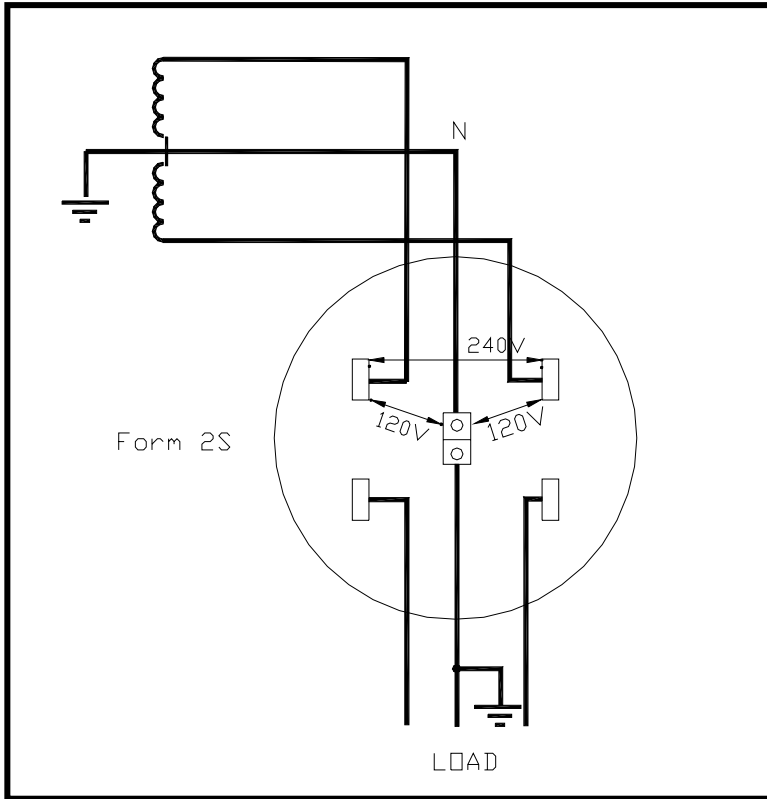
8.10 Electrical Connections

All meter sockets whether served overhead or underground, require the top connections to be connected to the source conductors.

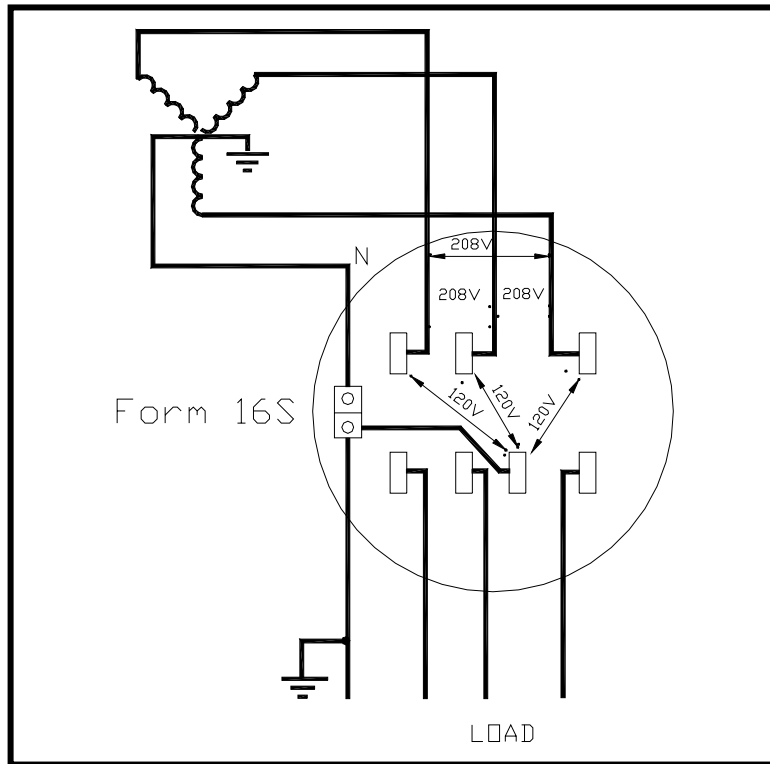
8.10.1 2 Wire 120 volt



8.10.2 3 Wire 120/240 volt

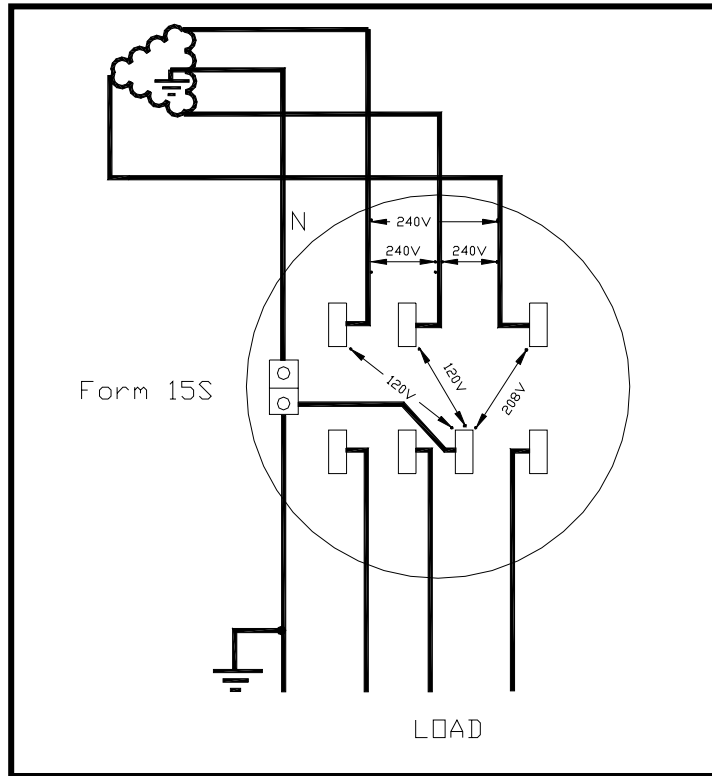


8.10.3 4 Wire, Wye 120/208 volt 3 Phase



8.10.4 4 Wire, Delta 120/240 volt 3 Phase

The phase commonly called the “power leg”, “high leg”, “freak leg”, or “wild phase” shall always be connected to the **right hand** meter socket connectors and shall be effectively identified in accordance with NEC 230-56 (marked by outer finish that is orange in color) at **both** the service head and in the meter socket.



8.11 Providing Energy Pulses to Customer

KPUB shall provide at Customer's request and after execution of an agreement by Customer, electric energy pulses for the purpose of monitoring Customer's energy consumption as metered by KPUB. According to the terms of the agreement KPUB should provide and install the equipment and devices needed to deliver pulses to a terminal block to which Customer's monitoring equipment is connected.

KPUB shall determine all pulse quantities, constants, and multipliers, and provide these to Customer.

Demand interval timing pulses shall not be made available to customer.

8.12 Meter Tampering and Theft of Service

Unauthorized connections to, or tampering with, KPUB's meter, associated equipment or meter seals, or indications or evidence thereof, subjects Customer to immediate discontinuance of electric service, prosecution under the laws of the State of Texas and local jurisdictions, adjustment of prior bills for electric service, and reimbursement to KPUB for all extra expenses incurred on Customer's account.