KIUC Service Installation Manual

THIRD EDITION

(December 2020)

This manual provides the general requirements for electric service and metering for Kaua‘i Island Utility Cooperative (KIUC) and is meant to provide guidance for architects, electrical engineers, electrical contractors, and members on electric service meter installations. While it is intended that this manual provide requirements and guidance for a wide range of potential meter installations, it also acknowledges that there will be unique situations in which KIUC instructions may be required to facilitate the installation. It is critically important that KIUC be consulted in every case to avoid any confusion or issues that may arise out of an improper installation.

The requirements are consistent with KIUC’s Public Utilities Commission-approved tariff rules and also serve to govern electric service installations.

Above and beyond the specific requirements of this manual and KIUC’s tariff rules, member installation shall also follow any applicable requirements contained in the National Electric Code (also known as NFPA 70, published by the National Fire Protection Association), National Electrical Safety Code (also known as ANSI Standard C2, published by Institute of Electrical and Electronic Engineers), Electric Utility Service Equipment Requirements Committee (EUSERC), the Ordinances of the County of Kaua‘i, the Laws of the State of Hawai‘i (also known as the Hawai‘i Revised Statutes), Hawai‘i Occupational Safety and Health Division regulations (HIOSH), Occupational Safety and Health Administration regulations (OSHA), and the Hawai‘i Administrative Rules, which include the Hawai‘i Public Utility Commission’s rules and general orders.

General Requirements:

- When requesting new electric service, it is important to contact KIUC as soon as possible. Initial contact can be made by calling KIUC Member Services at (808) 246-4300.
- KIUC will determine the applicable tariff retail rate schedule applicable for each installation. As the rate schedule can affect the meter loop requirements, it is important to consult with KIUC prior to installing the meter loop. Also, depending on the circumstances, more than one metering loop may be required.
- Before digging or excavating in an area that may possibly contain utility underground lines or equipment, please contact the Hawai‘i One Call Center at 1 (866) 423-7287 (or 811) for guidance on how to proceed.
- Unauthorized entry into or tampering with KIUC facilities are civil and/or criminal violations of law and may result in prosecution, fines, penalties, and/or refusal of electric service under the applicable statutes, rules, orders, tariffs, or other governing laws of the State of Hawai‘i and/or the Hawai‘i Public Utilities Commission.
- Whenever unique installations not covered by this manual are necessary, members shall obtain from KIUC the specific requirements and instructions needed to facilitate the installation in advance of the actual service installation.

Effective: 04/1993
Revised: 12/2020

Kaua‘i Island Utility Cooperative
Your Touchstone Energy® Cooperative

TABLE OF CONTENTS

SECTION 1: GENERAL SERVICE REQUIREMENTS

SECTION 2: RESIDENTIAL SERVICE

SECTION 3: COMMERCIAL SERVICE

SECTION 4: METERING

SECTION 5: APPENDIX

SECTION 1: GENERAL SERVICE REQUIREMENTS

A. METER INSTALLATIONS ON MEMBER'S PREMISES

1. Location: All meters shall be installed at KIUC's preferred service attachment location, approved by KIUC as shown on page 6. All meter location shall have 24/7 vehicular access by KIUC and be readily accessible at all times for inspection, reading and testing. Refer to page 11 & 12 for requirements for meters in locked areas. At the member expense, the member shall provide a new and approved location for all meters whenever necessary in order to comply with the foregoing.

2. Multiple Occupancy Buildings: In all multiple occupancy buildings in which meters are required for the various members in the buildings, the meters shall be installed at a centrally located point or points approved by KIUC and shall be clearly and permanently marked by the building owner to indicate the location served by each meter. Each meter shall record the consumption of only one member; sub metering is not permitted.

3. Sealing of Meter and Metering Equipment: All KIUC meters and associated service equipment, gutters, raceways or other compartments containing unmetered conductors will be sealed by KIUC and no such seal shall be tampered with or broken except by an authorized representative of KIUC.

4. Single Metered Account: Service to the member will be via a single metered account. Separation of loads for a place of business is not permitted.

5. Different Rate Schedules: When a member requests service under two or more different rate schedules because of the purposes or uses to which the energy is applied, separate meters shall be installed to measure the energy supplied under each rate schedule.

6. County Inspection: All new service equipment installations or replacement of existing service equipment must be inspected and approved by the County Electrical Inspector prior to service being rendered or restored.

7. Recessed Meters: **NOT ALLOWED**. KIUC will not energize any meters that are recessed in any wall or structure.

B. MISCELLANEOUS SERVICE EQUIPMENT ON MEMBER'S PREMISES

1. Equipment Furnished by the Member: The applicant or member shall furnish, install and maintain in accordance with KIUC's requirements all conductors, service switches, fuses, meter sockets, meter and instrument transformer housing and mountings, switchboard meter test buses, meter panels and similar devices, irrespective of voltage, required for service connection and meter installations on the member's premises. Detailed information will be furnished by the member or consultant. The Member or applicant should also comply with all applicable National, State and County electrical codes.

2. Equipment Furnished by KIUC: KIUC will furnish the necessary instrument transformers upon receipt of a service application, test facilities (except switchboard meter test buses) and meters. These items will be owned, operated and maintained by KIUC.

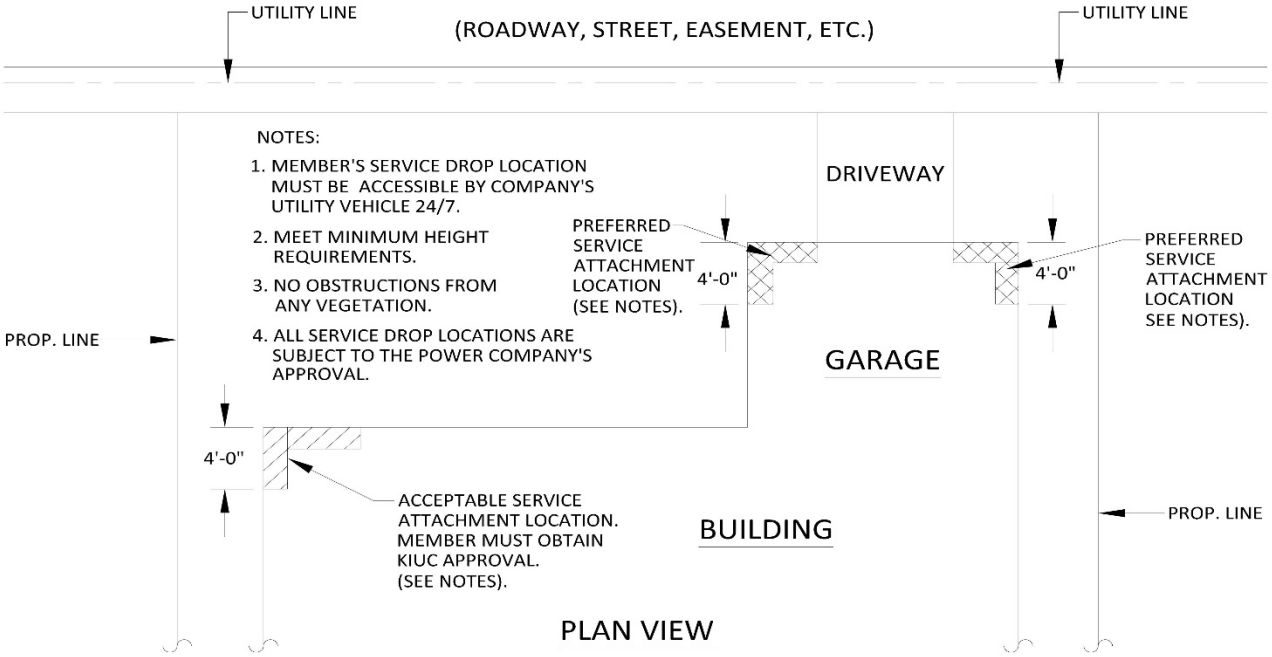


Figure 1: Approved locations for service attachments

C. SERVICE CONNECTIONS

No one other than an authorized KIUC employee may connect and/or disconnect the member's conductors to or from KIUC's conductors. Service connections will be made only under the conditions as described.

1. Overhead Service Connection from an Overhead System

   a. Service Drops: Upon receipt of an application from a bona fide applicant for service approved by the County Electrical Inspector, KIUC will at its expense furnish and install a single span of service conductor from its pole or other aerial support to the member's first permanent support or point of delivery provided that such support and connection is of a type approved by KIUC and is so located that the span will comply with good engineering practice and applicable laws, ordinances, rules and regulations. See Figure 1 for approved locations of service attachments.

   b. Impaired Clearance: Whenever any of the clearances required by the applicable laws, ordinances, rules and regulations become impaired by reason of a change made upon a member's premises, the member shall at his expense provide a new and approved support in a location approved by KIUC for termination of KIUC's existing service drop and shall also provide all required service entrance conductors and equipment.

   c. Service Entrance Conductors: For each service connection, the member shall furnish at his expense a set of service entrance conductors which shall extend from the termination of KIUC's service drop at the member's support to the meter. The service entrance conductors shall comply with applicable laws, ordinances, rules and regulations

d. Service Drop Diagram:

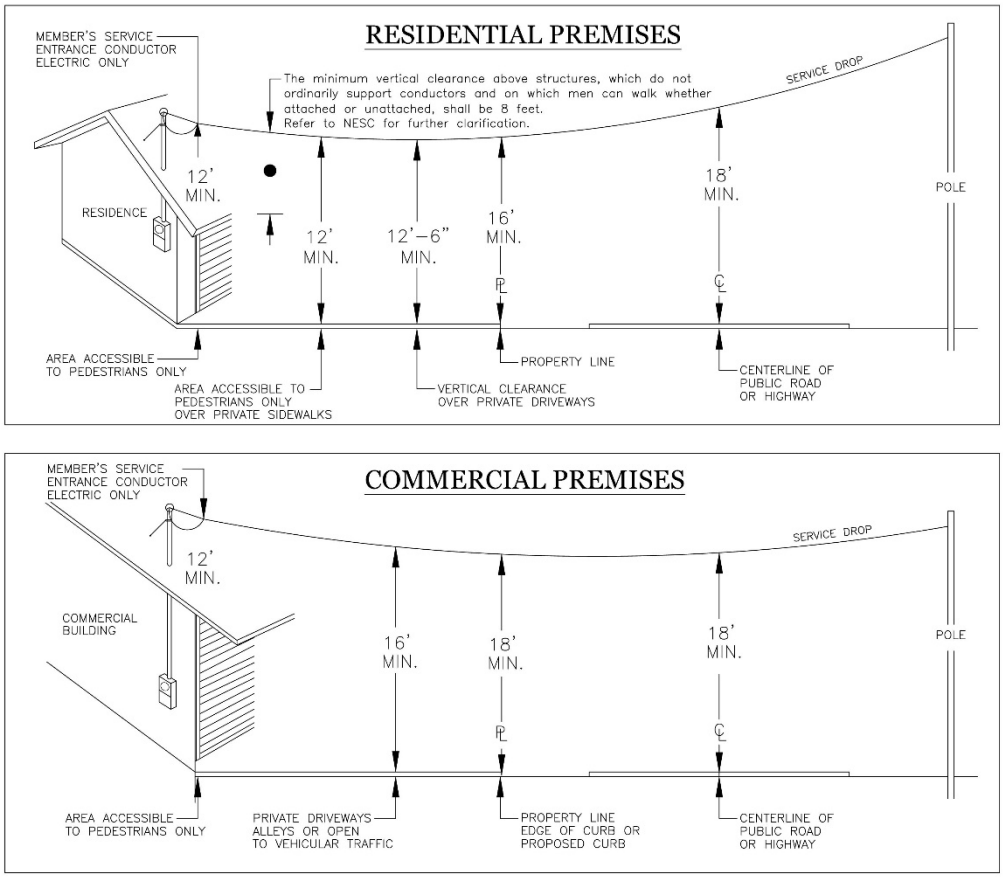


Figure 2: Residential and Commercial service drop diagrams.

NOTES:

1. The radial clearance between supply service drop conductors and other utility service drops conductors shall not be less than 24 inches: within the immediate vicinity of the point of attachment of either service drop. Pipe mast is for electrical service only. Other utilities will need their own pipe mast.

2. Service drop conductors shall have a clearance of not less than 3 feet from windows, doors, porches, fire escape and other points at which human contact might be expected.

3. Service drop conductors shall have a minimum vertical clearance of 8 feet from the highest point of all buildings over which they pass.

4. Installed where the weather head and point of attachment are safely accessible.

5. Service conductors are not permitted to pass over any swimming pools or tanks containing flammable materials.

6. All service locations are subject to KIUC's approval. Only one (1) service drop per building.

e. Meter Clearances:

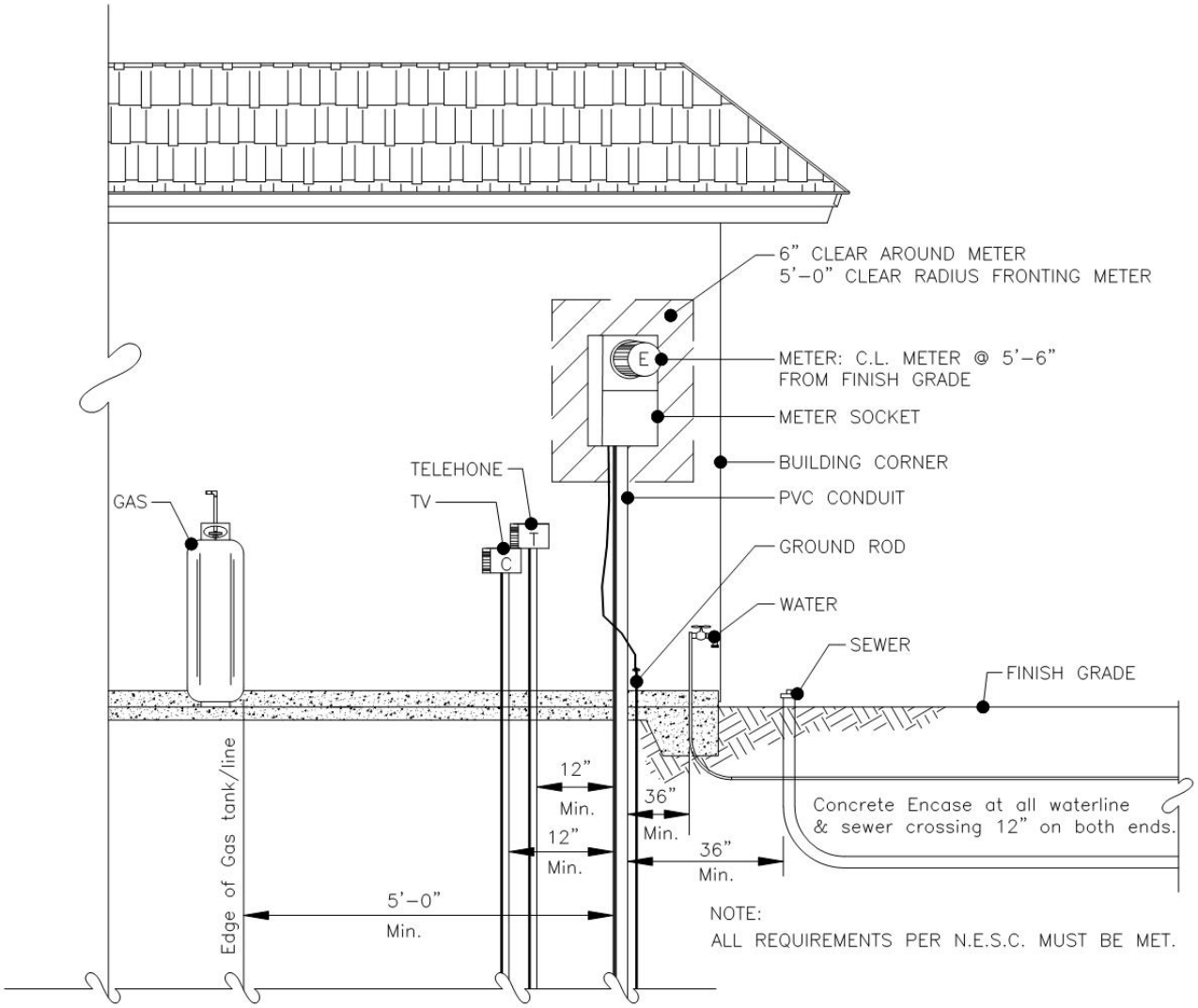


Figure 3: Meter clearances

2. Underground Service Connection from an Underground System

   a. Commercial Service: In areas where a distribution system has been installed underground in accordance with KIUC's Tariff, commercial service will be by underground connection only.

      (1) Secondary Voltage: The member shall furnish, without charge to KIUC, a suitable space and pad for the transformers and switching devices necessary for service. The member shall furnish and install two underground primary conduits, necessary pull boxes from KIUC's manholes or pull box to the transformer pad, and the secondary and service conductors to the transformer space with terminal connectors for cable connection to the transformer low-voltage bushing terminals. All secondary and service conductors are to be provided, installed, owned and maintained by the member.

(2) Primary Voltage: The member will furnish and install two underground conduits and necessary pull boxes from KIUC's manholes or pull box to the member's pull box or switchgear. The two sets of primary conductors to be installed in the underground conduits will be furnished and installed by KIUC. KIUC will designate the location and specifications for the conduits and pull boxes.

b. Residential Service: Where the distribution system has been installed underground in accordance with KIUC's Tariff, service to a residential building occupied by a single family will be by underground connection only. The member or applicant shall furnish the trenching, backfilling, conduits, pull boxes and transformer pad where necessary. KIUC will furnish and install the service conductors to the member's point of service connection and will designate the location and specifications of the conduits, pull boxes, transformer pad, trenching and backfilling.

3. Underground Service Connection from an Overhead Source:

Where the member desires underground service, KIUC will furnish and install the underground service conductors under the following conditions:

a. Commercial Service

(1) Secondary Voltage:
a) Where the secondary voltage is available on the overhead system at the member's premises, the member shall furnish and install the necessary conduits and pull boxes from the base of pole to the member's service connection. The member shall also supply and install the first 10 feet of schedule 80 PVC conduit or duct up KIUC's pole from the base. KIUC will furnish and install the service conductors and will designate the location and specifications of the conduits and pull boxes, unless otherwise specified by the member or consultant in an approved drawing. The member shall own and maintain all secondary facilities including service conductors.
b) When KIUC's pad mounted transformer(s) are to be located on the member's premises, the member shall furnish a suitable space, and shall furnish and install the necessary primary conduits and pull boxes from the base of pole to the transformer space. KIUC will furnish and install the primary service conductors and will designate the location and specifications of the primary conduits and pull boxes, and terminate the member's secondary cable in the secondary compartment of the transformer. The member shall own and maintain all secondary facilities including service conductors. Where maximum continuity of electrical service is required in the public interest, two sets of primary service conductors shall be installed. Easements to KIUC may be needed at the member's expense.

(2) Primary Voltage: Where the service is at primary voltage, the member shall furnish and install the required conduits from the base of pole to the service termination point. KIUC will furnish and install the primary service conductors and will designate the location and specifications of the primary conduits. Where maximum continuity of electrical service is required in the public interest, two sets of primary service conductors shall be installed. Easements to KIUC may be needed at the member's expense.

b. Residential Service – Secondary Voltage:

The trenching, backfill and any necessary conduit and pull boxes will be furnished and installed by the member; the first 10 feet of schedule 80 PVC conduit up the KIUC pole shall also be furnished and installed by the member. **Maximum of 2 conduit manufactured bends with a minimum radius of 24 inches will be allowed**. Any exceptions must be approved by KIUC. KIUC will furnish and install the service conductors from KIUC's facilities to the member's point of service connection and will designate the location and specifications of conduits, pull boxes, transformer pad, trenching and backfilling which will be the member's responsibility. Easements to KIUC may be needed at the member's expense.

D. TRANSFORMER INSTALLATIONS ON MEMBER'S PREMISES

In cases where a KIUC transformer installation is made on a member's premises, adequate space for the transformer installation shall be provided by the member. Space provisions must be such that required clearances from adjacent structures can be maintained, and any vault, room or enclosure provided by the member shall conform to applicable laws, ordinances, rules and regulations and shall meet with the approval of KIUC. Easements to KIUC will be required at the member's expense.

1. Secondary Installations of 100 KVA or Less

   a. KIUC will erect a pole-type transformer structure and service from this structure will be supplied as specified by KIUC.

   b. Where the member has provided a satisfactory concrete pad or foundation, fence, retaining wall, structure and necessary grounding to meet KIUC engineering construction standards.

   c KIUC reserves the right to require a pad mount transformer.

2. Secondary Installations over 100 KVA

   a. The member shall furnish suitable transformer space approved by KIUC.

   b. Where the member has provided a suitable vault or room, the member shall also furnish and install, at his expense, all secondary equipment, grounding, ventilation equipment and other material necessary to receive service from the secondary of the transformers or the secondary bus so that KIUC engineering specifications are met.

   c. Where the transformer and switching equipment is to be located outdoors, the member shall provide and maintain at his expense a satisfactory concrete pad or foundation, fence, retaining wall, structure and necessary grounding to meet KIUC engineering construction specifications. The member shall also furnish and install at his expense all secondary equipment and material necessary to receive service from the secondary of the transformers or the secondary bus so that KIUC engineering specifications are met. KIUC will at its expense complete the installation.

E. OWNERSHIP AND MAINTENANCE OF FACILITIES

All transformers, meters, service wires, appurtenances, fixtures and other facilities installed by KIUC upon the member's premises for the purpose of delivering electric energy to the member shall continue to be the property of KIUC and may be repaired or replaced by KIUC at any time and removed at the termination of service. An exception is the secondary conductor and facilities for a commercial underground service. The commercial member shall own and maintain all secondary facilities including service conductors.

No rent or other charge whatsoever shall be made against KIUC for placing or maintaining such facilities upon the member's premises. The member shall exercise reasonable care to prevent the KIUC facilities on the member's premises from being damaged or destroyed. The member shall not make or break any connections, attach any switches or other devices, or relocate or otherwise interfere with KIUC facilities situated on a member's premises. In case any defect in KIUC's facilities shall be discovered, KIUC shall be promptly notified.

F. LOSS OR DAMAGE

In the event of loss or damage to KIUC's facilities on the member's premises caused intentionally or arising from neglect, carelessness or misuse by anyone on the member's premises, the cost of necessary repairs or replacement shall be at the expense of the member.

G. MEMBER RESPONSIBILITY FOR EQUIPMENT

The member shall, at his/her own sole risk and expense, furnish, install, inspect and keep in good and safe condition all electrical wires, lines, machinery, apparatus and equipment of any kind or character which may be required for: (1) receiving electric energy from KIUC lines, regardless of the location of the transformers, meters or other KIUC equipment; and (2) applying and utilizing such energy, including all necessary protective equipment and suitable housing therefor.

The member shall also transmit and deliver and be solely responsible for the transmission and delivery of all electric energy over or through the member's wires and equipment, regardless of the place where such electric energy may be transformed or metered.

KIUC will not be responsible for any loss or damage occasioned or caused by the negligence, want of proper care or wrongful act of the member, his/her agents, employees or licensees in installing lines, machinery, apparatus or equipment.

H. RIGHT OF ACCESS

KIUC shall have the right of ingress to and egress from a member's premises at all reasonable hours for any purposes reasonably connected with the furnishing of electric energy and the exercise of any and all rights secured to it by law or the KIUC Tariff.

I. LOCKED AREAS OR EQUIPMENT

KIUC prefers that metering facilities be installed in readily accessible unlocked areas, but when KIUC's metering facilities or any other equipment accessible to KIUC is located in vaults, rooms or other enclosed areas which are locked, the following requirements shall be met.

1. Padlock or Cylinder Lock: Locked areas or equipment, which are accessible to KIUC, shall be provided with doors or covers which shall be fitted with a hasp for a padlock which the member purchases from KIUC. A cylinder lock, which will accommodate a Sargent Lock cylinder, may be used in place of a padlock but must be purchased and installed by the member. If the area is to be accessible to both KIUC and member, the cylinder/core or padlock will accommodate a KIUC master key and a member-owned key. The member-owned key will operate only the member's lock and will not open other locks operable by KIUC's master key. Doors leading into such areas shall be arranged to be readily opened from the inside by any person who may be inside the area, in accordance with the egress requirements of the latest edition of the National Fire Protection Association Life Safety Code.

2. Lockbox: If the purchase of KIUC padlocks or cylinder/core locks for the locked areas, presents a financial hardship to the member, then the member may purchase his own padlocks and store one (1) set of key(s) in a lockbox of suitable construction in a location approved by KIUC. KIUC will padlock the lockbox and the set of key(s) in the lockbox will not be available for the member's use.

3. Modifications to Area: In the event that KIUC's metering facilities or other equipment are readily accessible at the time of installation, and the member plans at a later date to make any modification or addition which will render the metering facilities or other equipment inaccessible, the member shall consult KIUC prior to making said modification or addition in order to make arrangements satisfactory to KIUC for access by KIUC personnel.

4. Electric Gate: If a member wishes to install an electric gate, which may impede access to a KIUC facility, the following requirements must be met: 1) Plans must be submitted by the member to KIUC's Engineering Department for review and approval, 2) The gate must have a key-operated bypass feature, which enables the gate to be opened solely by a key, particularly in the case of electrical failure, 3) The member must utilize KIUC's standard "lockbox" arrangement whereby the member keeps the gate bypass key in a KIUC approved lock box at the gate.

J. ALUMINUM SERVICE ENTRANCE CONDUCTORS

Aluminum service entrance conductors will be approved for use provided the following requirements are followed:

1. Meter Socket: Refer to Page 22.

2. Aluminum Conductor: In order to avoid low voltage conditions, corrosion of connections and overheating of the connector in meter sockets, the portion of the aluminum conductor which comes in contact with the terminals in the meter sockets must be cleaned with a wire scratch brush or fiberglass brush, where then a liberal coating of grease inhibitor such as *Penetrox A* or equivalent is applied over the end of the conductor before the connection to the terminal of the meter socket is made. After the connection is made, the conductor terminals in the meter socket should be coated with the grease inhibitor.

SECTION 2: RESIDENTIAL SERVICE

In addition to the applicable requirements contained in this manual, the requirements on the following apply to service and metering to single family dwellings only.

A. FLOOD ZONE

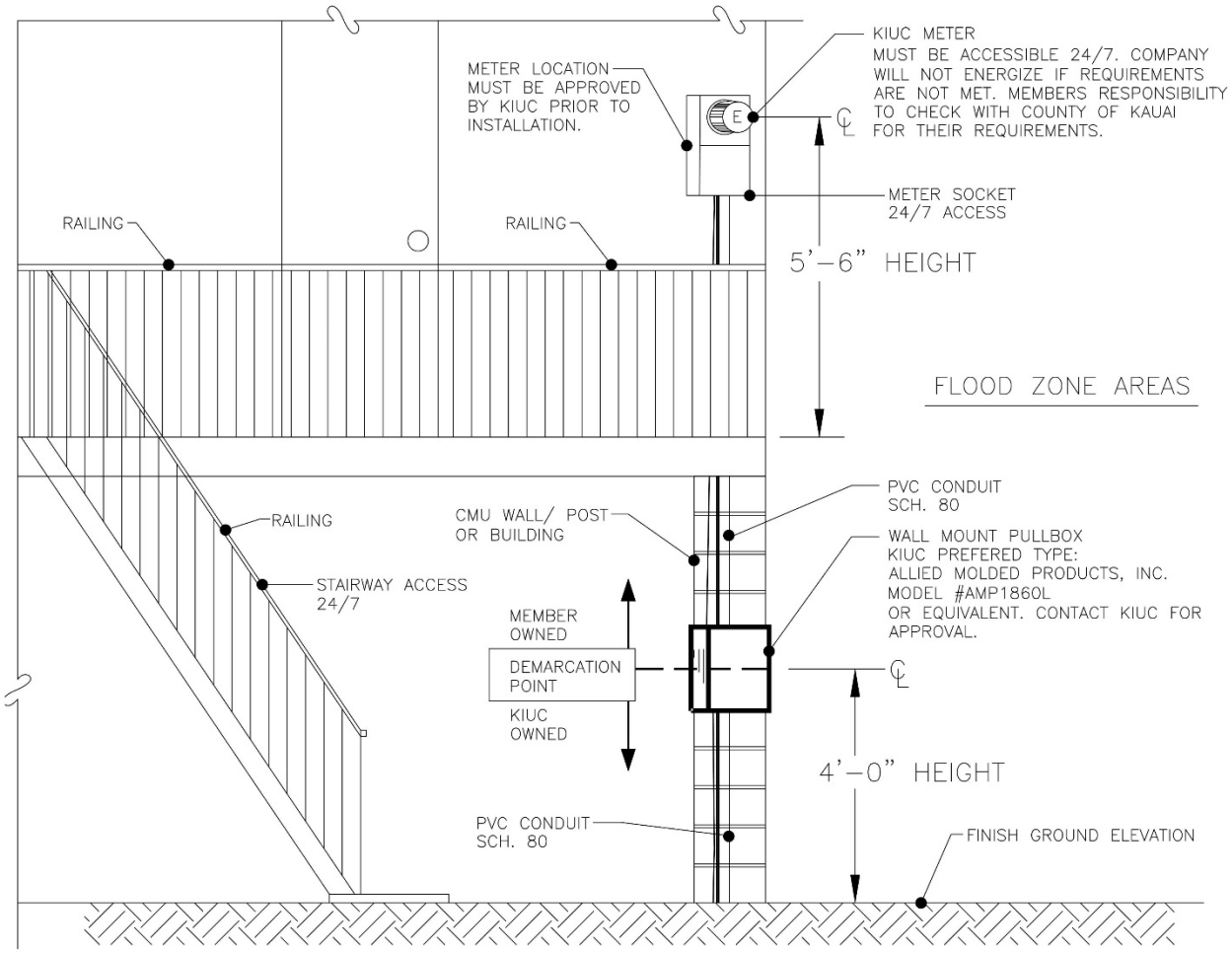


Figure 4: Flood zone clearances.

B. OVERHEAD

1. Service Drop

KIUC will, at its expense, furnish and install a single span of 3-wire service conductors from its pole or other aerial support to the member's residence or other approved permanent support. The maximum distance of the service drop shall be 125 feet. Any exceptions must be approved by KIUC.

2. Service Drop Support

KIUC will select the location of the Service Drop Support. The member will furnish the anchoring hardware and install the Service Drop Support.

When the eaves of the residence are not high enough to provide clearances as required by the National Electrical Code, the member shall provide a suitable, higher support. The member shall refer to page 15. If neither of these methods is suitable, consult KIUC for instructions.

Single story dwelling will only be allowed to pipe mast with guyed installations. No fascia connections will be allowed. KIUC personnel will not connect if pipe mast is not properly supported.

Multiple story dwellings will be allowed to fascia connect. Member is responsible to properly support at the connection point. KIUC personnel will not connect if fascia is not properly supported.

a. Guyed Mast Diagram:

GUYED MAST FOR INSTALLATIONON ALL TYPES OF ROOFING
“H” IS 5’-0”
MULTIPLE STORY FASCIA CONNECTION WILL BE ALLOWED

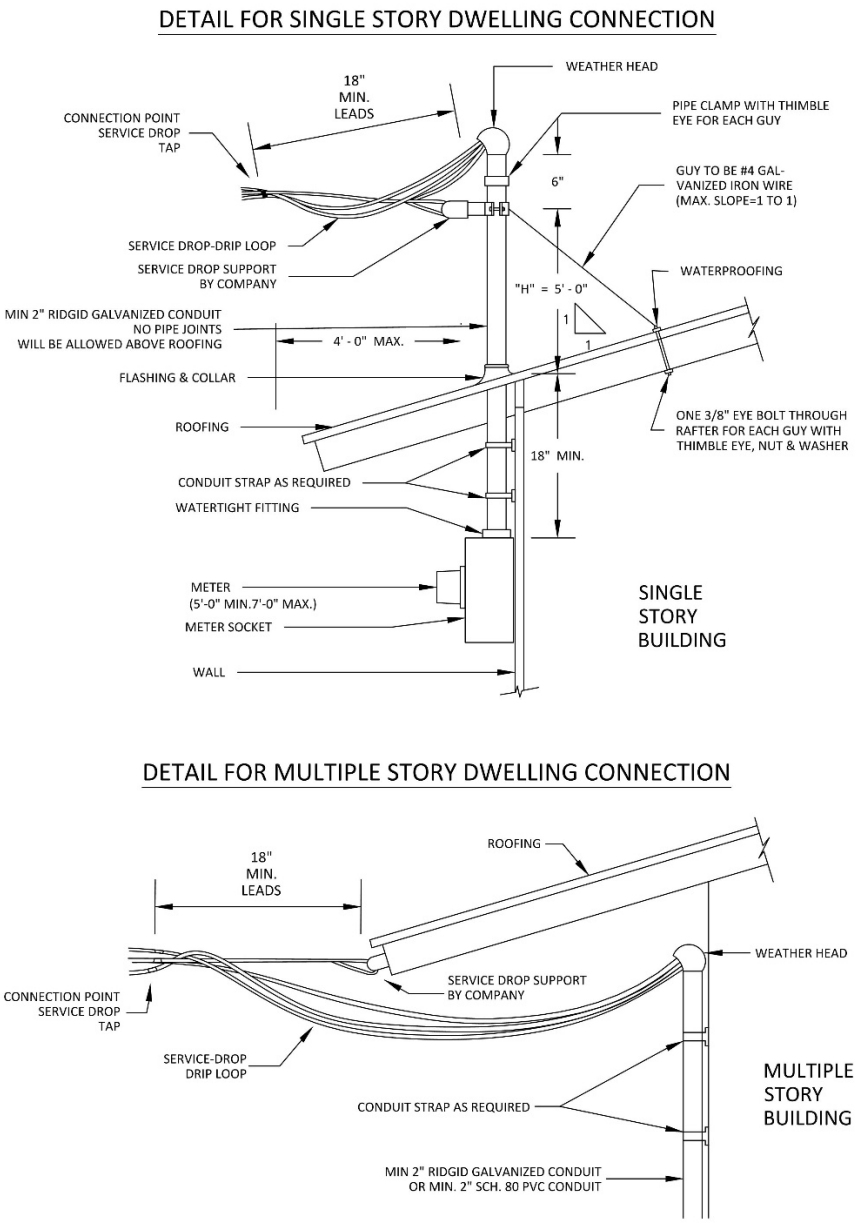


Figure 5: Single and multiple story dwelling connection details.

Notes (Applying to Diagram on page 15):

1. This diagram is intended only to show KIUC requirements for guying masts, In accordance with N.E.C Sec. 230.28. Consult the County Building Division or the Company for additional requirements for this type of construction.
2. For all types of single story roofing: "H" = 5 feet.
3. For multiple story buildings. Guyed pipe mast "H" = 5 feet or fascia connection will be allowed.
4. Undesignated installations are the member's responsibility.
5. KIUC will designate the location of the Service Mast and the minimum height above ground for point of attachment of the service drop, supply insulator for attachment of service drop and will make the tap at the service drop conductors. Service mast is for electric service only. Other utilities will need their own pipe mast.
6. The member shall supply and install all other equipment and hardware, including watertight flashing for pipe mast and guy bolts.
7. All conduit, masts and hardware shall be galvanized.
8. Masts, conduit and other equipment shall be grounded and bonded as required by the National Electrical Code.

3. Service Entrance Conductors

Member's service entrance conductors shall be long enough to reach the service drop tap with an additional 18 inches for forming a drip loop.

C. UNDERGROUND

Connection from an Overhead Distribution

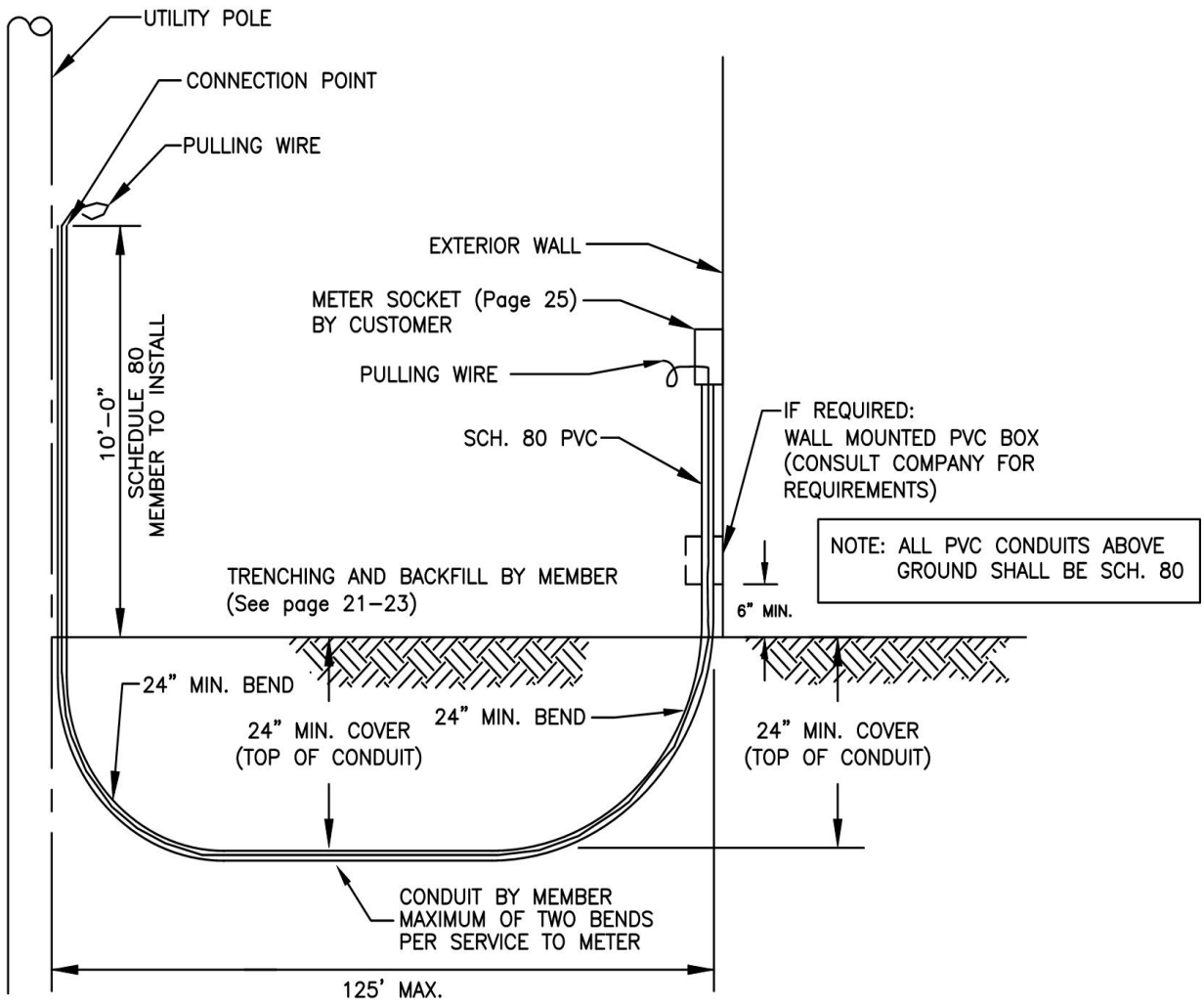


Figure 6: Underground service connection from overhead construction.

Underground Connection from an Underground Distribution

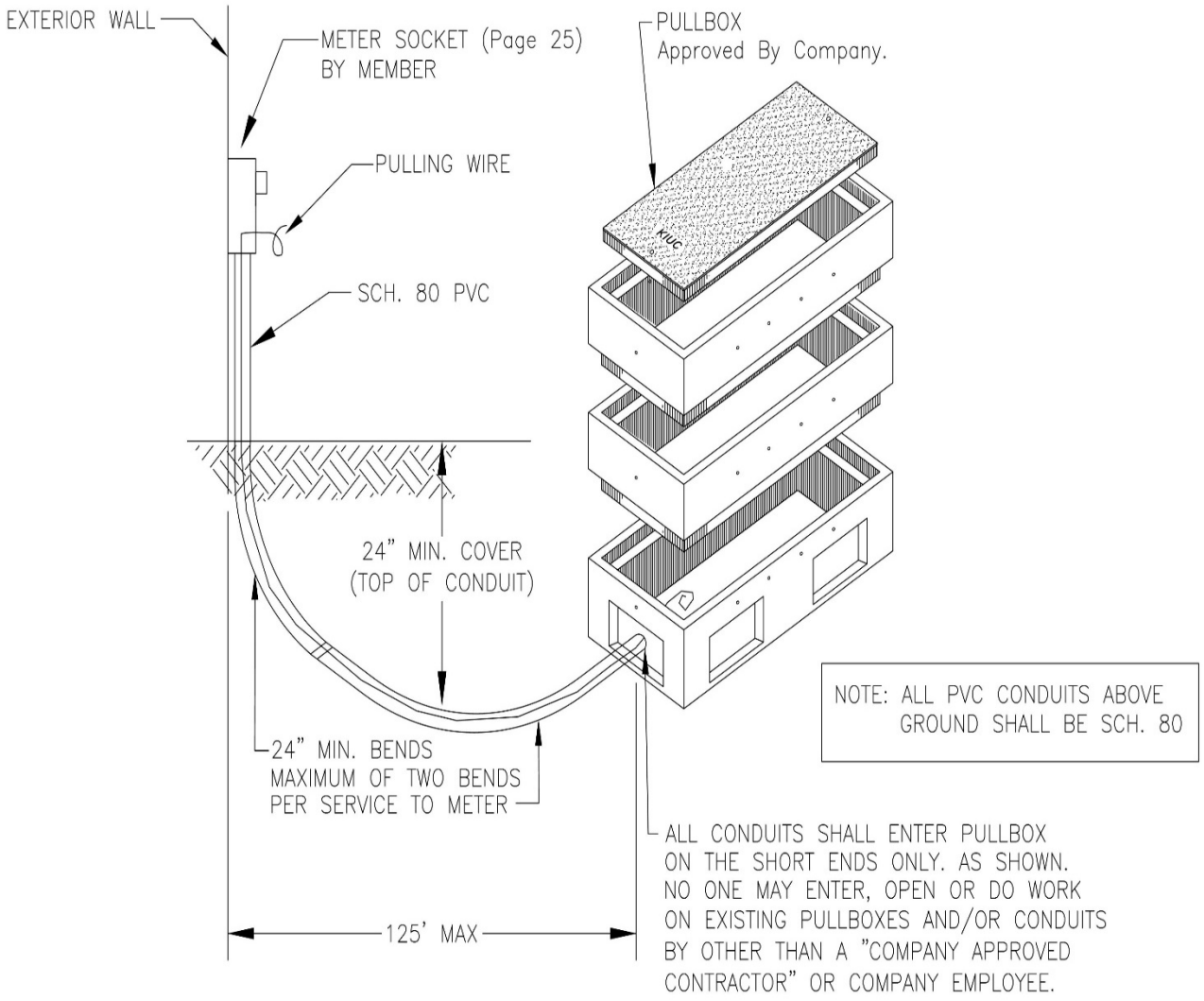


Figure 7: Underground service connection from underground construction.

1. Underground Service

   a. KIUC will furnish and install the service conductors to the Member's point of service connection and will designate the location and specifications of the conduits, pull boxes, transformer pad, trenching and backfilling. The maximum distance between the company's hand hole or base of pole to the meter socket support is 125 feet. Maximum of 2 conduit manufactured bends with a minimum radius of 24 inches will be allowed. Any exceptions must be approved by KIUC.

   b. The conduits, pull boxes, transformer pad, trenching and backfilling will be furnished and installed by the Member or applicant.

   c. In most cases, residential areas with new underground service from an underground system will have a secondary connection point approximately 1 foot 6 inches from the property line between lots and 1 foot from the street property line. Due caution should be exercised when excavating in the vicinity of this conduit stub as it may be energized. Call KIUC before you excavate.

   d. All new services and service conduits must enter pull box from the ends and be perpendicular to the wall; bell ends must be flush with the inside wall. See Detail on page 18.

   e. All existing meters requesting upgrades, contact KIUC for conduit sizing and approval.

   f. All PVC conduits above ground shall be Schedule 80.

2. Inspection

NO backfilling will be done until after the Kaua'i Island Utility Cooperative inspection. To schedule the necessary inspection, call Member Services at 246-4300 (72 hours' notice is required).

3. Trenching and Backfilling

Service conductors shall be installed in a conduit provided by the member from the meter location to the secondary connection point at KIUC's hand hole or base of pole; location of connection point will be designated by KIUC. Trench shall provide a minimum cover of 24 inches above direct buried or concrete-encased conduits. All trenches must be inspected by a KIUC inspector prior to concrete encasing and backfilling.

UNDERGROUND
Typical Trench Detail

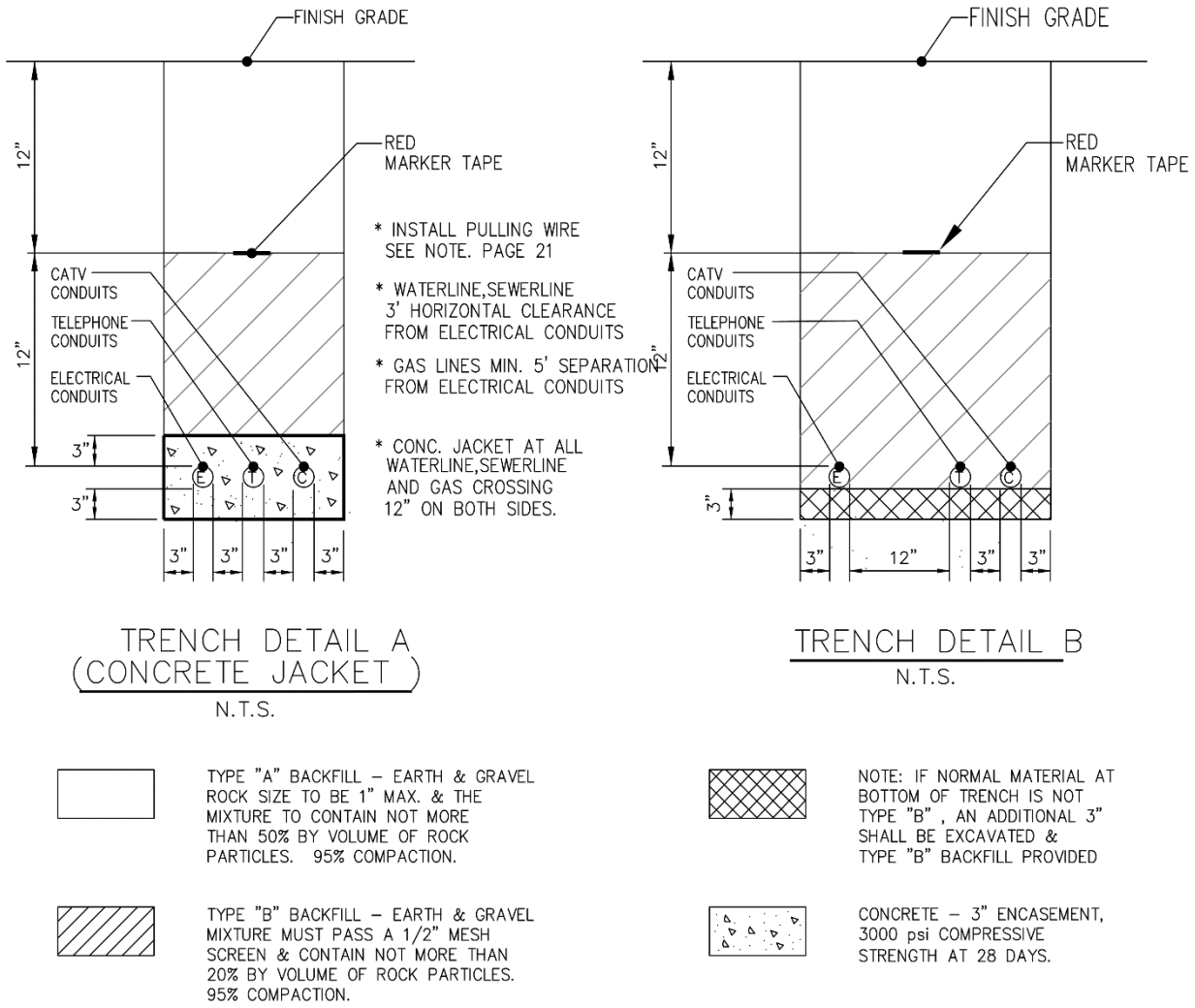


Figure 8: Trench details

4. Conduit

   a. PVC conduit for service conductors shall be installed from the meter socket or wall-mounted PVC box down the wall and into trench to KIUC's pull box or base of pole as shown on sketch on Page 17 and 18. Manufactured bends with a minimum radius of 24 inches shall be used at all times. Rigid galvanized steel conduit shall not be used.

   b. Conduit shall also be installed as follows:

      (1) For service conduit only - under all driveways, roadways and paved areas, the concrete-encased conduit shall be 2 or 3 inches Schedule 40 PVC, when buried at a depth to provide 24 inches of cover above the conduit. Under private concrete driveways only, Schedule 80 PVC conduit may be substituted for the concrete-encased, Schedule 40 installation.

      (2) Maximum of 2 manufactured bends with a 24-inch minimum radius will be allowed for each service.

      (3) The conduit shall be 2 or 3 inches, Schedule 40 PVC conduit in all other applications.

      (4) When size of service conductors is greater than #3/0, conduit shall be as specified by KIUC.

      (5) Consult KIUC for riser installation requirements.

      (6) 2-inch conduit for 125 amp meter sockets and 3-inch conduit for 200 amp meter sockets and 3-inch conduit for 320 amp meter socket (this service will only be allowed underground with a max. distance of 75-feet. All others contact KIUC.

      (7) Members load side conduits will need to have 24 inches clearance in any direction to KIUC's conduits.

5. Pull box

When the service conductor run is greater than 125 feet as specified on page 18, a pull box shall be installed as specified by KIUC at owner's expense. Pull box specifications may be obtained from KIUC. **No one may enter, open or do work on existing pull boxes and/or conduits** by anyone other than a KIUC approved contractor and only after authorized by KIUC's Construction Inspector.

6. Pulling Wire

The member shall install and leave in place a **NEPTCO polyester MULETAPE #WP1800P (or equivalent)** in each conduit installed by the member. Nylon string will no longer be accepted and will result in no service connection.

7. Sealing of Conduit and Ducts

When the member furnishes and installs service conduits from his facilities to a KIUC manhole, hand hole, vault, box or structure, a suitable device or materials for sealing these conduits shall be furnished, installed, and maintained by the member at his expense. The sealing device or material shall be installed at both ends of the conduit runs to prevent the entrance of moisture into the member's building or facilities from KIUC facilities. The member shall notify KIUC before installing and sealing conduits in KIUC's manhole, hand hole, vault, box or structure so that a KIUC representative can be present during the progress of this work in the KIUC facility.

D. METER SOCKET

1. Requirements

    a. The requirements listed below cover meter sockets for 100 amp, 200 amp and 320 amp services.

    b. Meter sockets shall be 4 jaw type for 120/240 volt service and 5 jaw type for 120/208 volt service. Fifth jaw shall be securely mounted in position. Plug in type is not acceptable unless spring retaining clips are of stainless steel.

    c. Maximum residential single phase service will be 320 amps. This service will only be allowed underground with a maximum distance of 75 feet.

2. Locations

    a. Meter sockets shall be installed in locations approved by KIUC and shall be so placed that meters installed therein will be readily accessible at all times for inspection, reading and testing. (See page 6).

    b. Meter sockets should be located as close as practical (within 4 feet) to the corner of the residence nearest the street. When the garage is closer to the street than the residence, it will be preferable to install the meter socket on the exterior wall of the garage in a location readily accessible from the driveway. (See page 6).

3. Mounting Height

    a. Center of meter socket shall neither be lower than 5 feet nor higher than 7 feet above floor or finished ground line. The preferred height is 5 feet 6 inches.

    b. Meter sockets shall not be installed at or below mean flood or tsunami level unless by written authorization from the County of Kaua'i - Building Division.

    c. Where meter is installed above mean flood level, 24/7 access to meter must be by stairs and platform with railing.

4. Clearances

    a. Horizontal clearance on each side of meter socket to any obstruction such as walls, windows, doors, fences, stairs, etc. shall be greater than 6 inches.

    b. Horizontal clearance in front of meter socket shall have a radius of 4 feet clearance to any obstruction such as walls, fences, trees or hedges.

    c. Vertical clearance above meter socket to any obstruction such as windows, etc. shall be greater than 6 inches.

5. Group Metering

a. Overhead Diagram

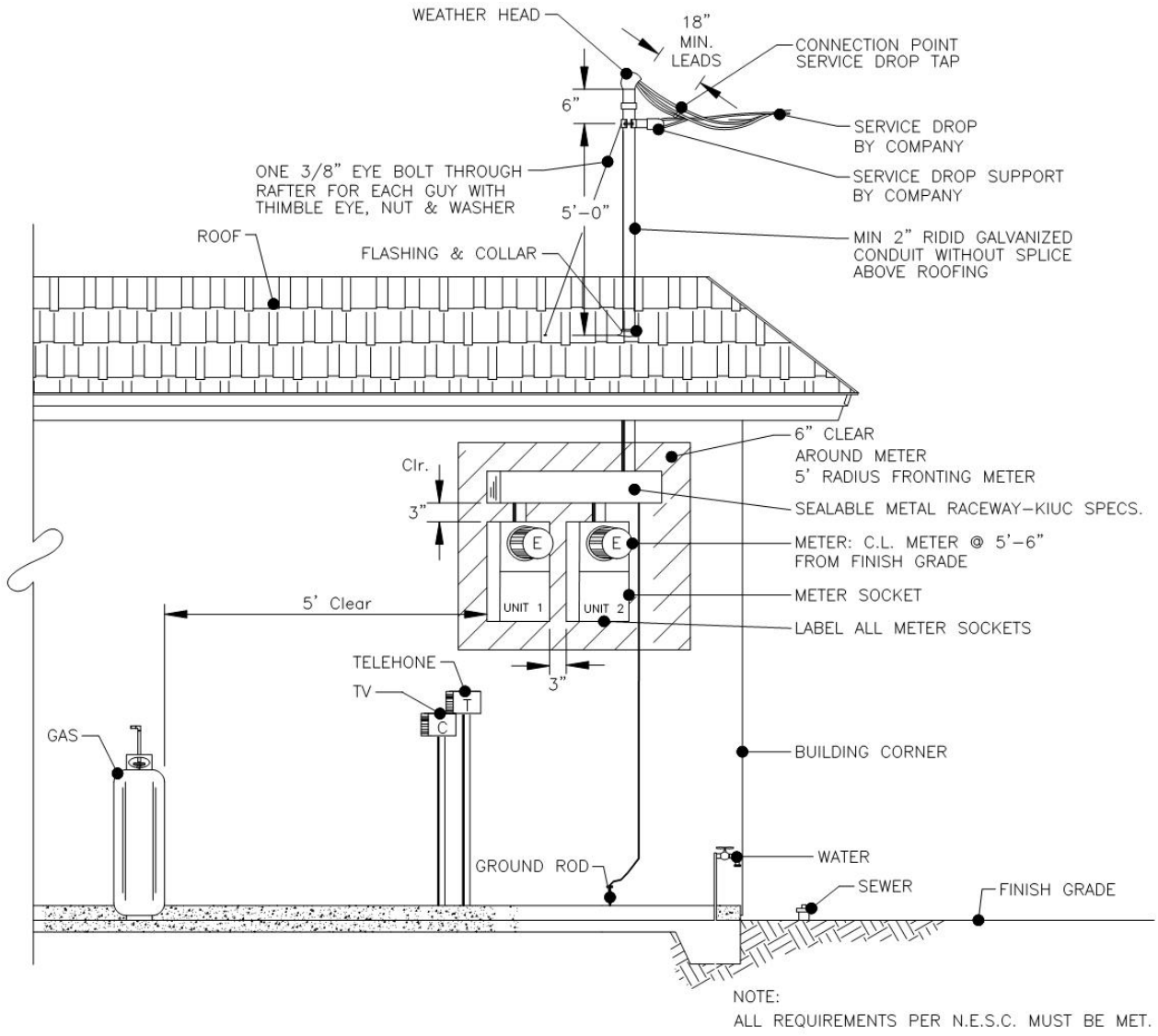


Figure 9: Overhead service details.

b. Underground Diagram

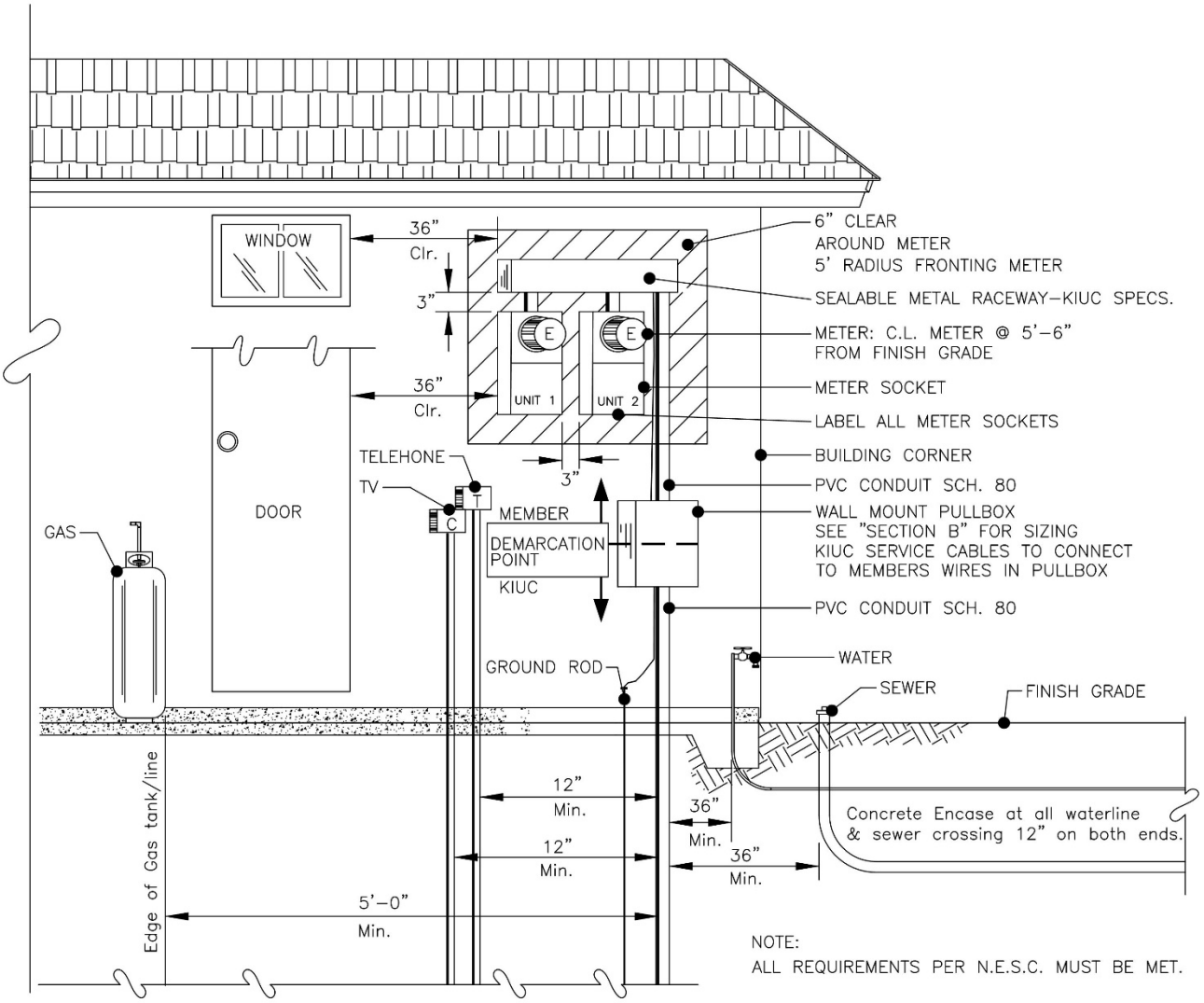


Figure 10: Underground service details.

6. Sockets for Use with Aluminum Conductors

Self-contained meter sockets that are approved by the Electric Utility Service Equipment Requirements Committee (EUSERC) may be connected to aluminum conductors on residential service.

EUSERC approved sockets have passed the temperature rise and insertion pressure tests, and comply with the following conditions:

a. Aluminum bodied AL-CU lugs are provided for the connection of aluminum conductors. Plated copper lugs are not acceptable.

b. The socket jaw or clip of the socket is made of beryllium copper or equivalent. A copper bus bar heat-sink (2 or 3 inches in length) is provided between the socket jaw and the aluminum bodied AL-CU lug.

c. The socket block and jaw assembly (not the can or socket enclosure) shall be identified by a label or tag, which gives the catalog number. This identification shall be on the face of the socket block and jaw assembly, and the socket does not have to be disassembled to find it.

d. The requirements covering meter sockets for use with aluminum conductors shall apply to aluminum service cable as installed by KIUC as well as aluminum service entrance cable as installed by the member.

e. Maximum residential single phase load KIUC will supply is 320 amps.

f. Member or his contractor shall contact KIUC for information on type of service cable, which will be installed by KIUC.

7. Group Meter Installations

a. When a group of meters are to be installed at one location, the applicant or his electrical contractor shall furnish a sketch identifying the area to be served by each meter socket (i.e., service address, apartment number, etc.). Before meter installation, the applicant (or his electrical contractor) shall mark each meter socket with a permanent identification (i.e., plastic engraved label, painted identification) to indicate the area served by the meter socket.

b. When an additional meter socket is installed adjacent to an existing meter location, a metal raceway is to be installed by the member to accommodate the meter sockets (Refer to pgs. 23-24). The member or his electrical contractor shall mark each meter socket with a permanent identification to indicate the area served by the meter socket.

(1) For underground multiple metering a sealable raceway is required. This raceway will be the point of delivery.

(2) An acceptable alternative is a multiple metering panel. The member or his electrical contractor must consult with the company before this equipment is installed.

8. Residential Service Conductor Schedule

SERVICE SIZE	SERVICE ENTRANCE			
	CONDUIT (PER NEC)		SERVICES ENTRANCE CONDUCTORS (See Notes below)	GROUNDING (CU Only)
	MAXIMUM DISTANCE	CONDUIT SIZE	RESIDENTIAL 1 Ph. 3W 120/240v	
100 Amps 125 Amps	125'	2 INCH.	1/0 AL	#4
200 Amps	125'	3 INCH.	3/0 AL	#4
320 Amps	75'	3 INCH.	350MCM AL	#4

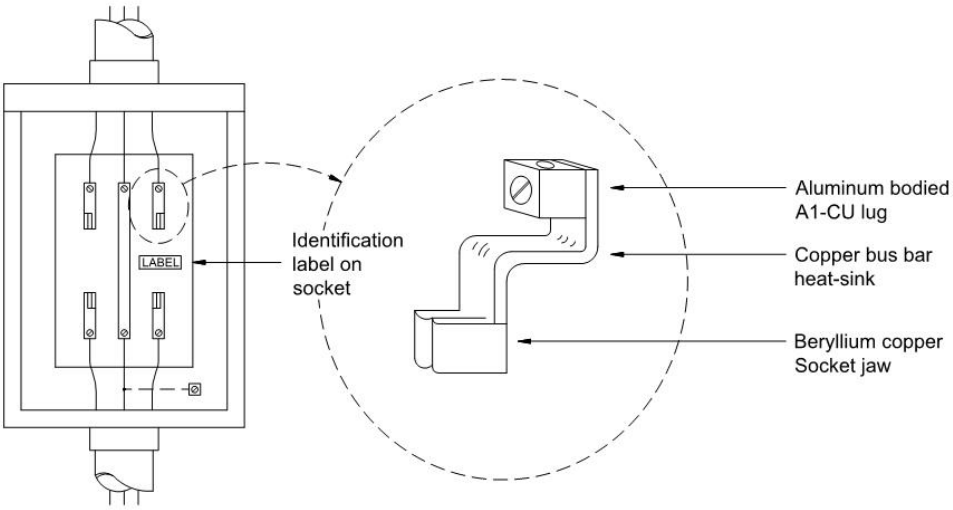


Figure 11: Residential service conductor schedule

9. Meter Socket Connection Diagram

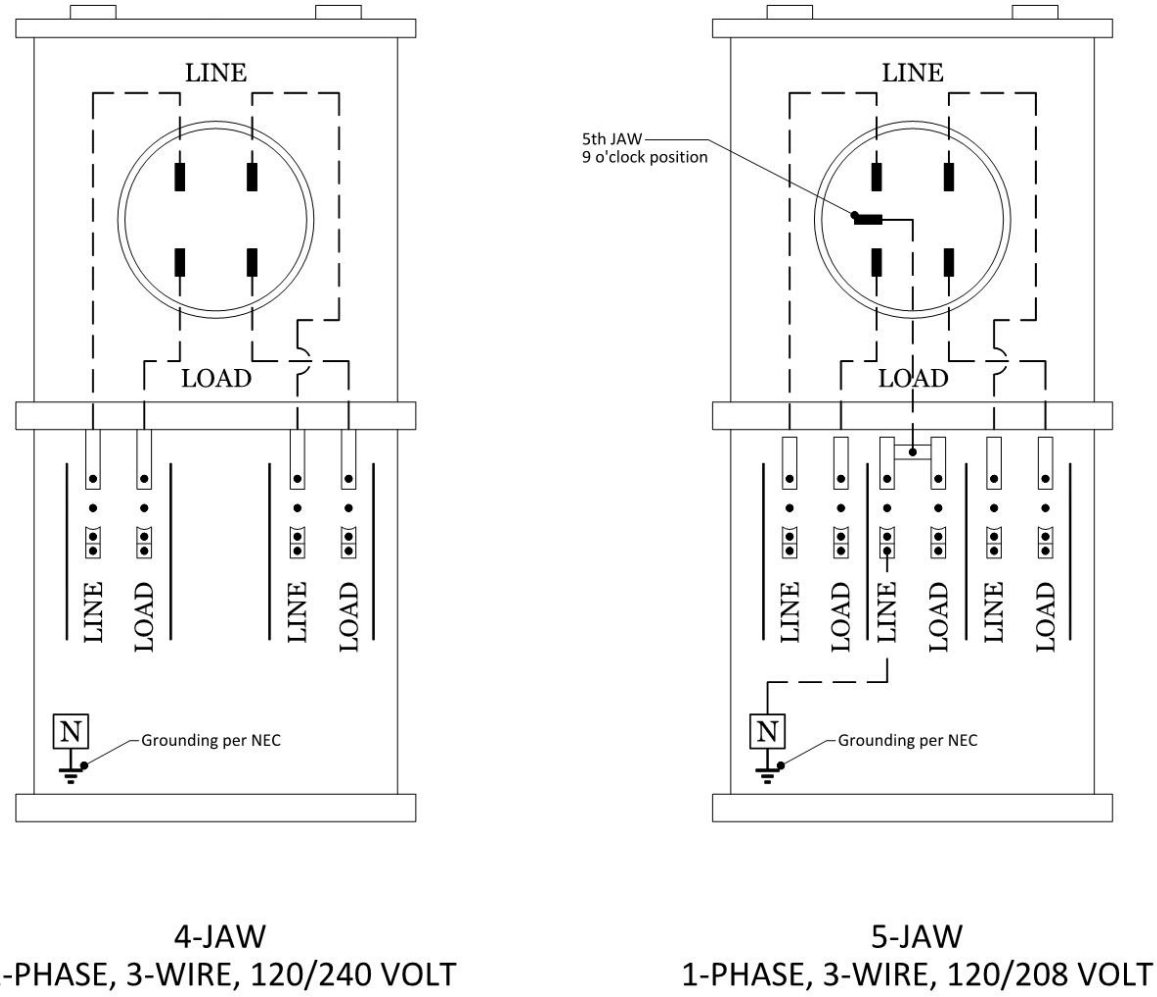


Figure 12: Residential meter socket diagram.

NOTES:

1. Socket shall be installed ahead of service equipment.
2. Line conductors shall be connected to the top terminals.
3. Load conductors shall be connected to the bottom terminals.
4. Sockets shall be installed with jaws vertical and plumb.
5. The 5th jaw must be mounted in the 9 o’clock position and shall be securely mounted in place. Plug in type is not acceptable unless spring retaining clips are of stainless steel.

SECTION 3: COMMERCIAL SERVICE

In addition to the applicable requirements contained in this Manual, the requirements on the following pages entitled, "COMMERCIAL SERVICE" apply to service and metering to all buildings or facilities which are not used only as a single family dwelling. This type of service requires applicant to submit Engineering drawings to Kaua'i Island Utility Cooperative, Engineering Department for approval.

A. UNDERGROUND

1. Trenching and Conduits

The member or applicant shall provide trenching and a suitable conduit for service from KIUC's pull box or base of pole. As shown on page 30. When more than one conduit is installed in the same trench, a minimum separation of 3 inches is required between KIUC conduits and 12 inches between conduits for KIUC use and conduits for other utilities - unless concrete encasement is provided. The conduit size will be specified by KIUC and will be a minimum of 2 inches inside dimension.

2. Wall-Mounted Lockable PVC Box

a. When the size of the service conductor is greater than 1/0, a wall-mounted lockable PVC box specified by KIUC shall be installed ahead of the meter socket or current transformer cabinet. The member's service entrance conductors shall terminate in the wall-mounted box with 18 inches extra length for splicing. When wall-mounted boxes are used, the minimum size shall be as follows:

SIZE OF SERVICE CABLE	SIZE OF WALL-MOUNTED PVC BOX
#1/0	6"D x 10"W x 12"H
#3/0	10"D x 12"W x 18"H
350 MCM	12"D x 18"W x 24"H

b. Wall-mounted lockable PVC boxes shall neither be mounted less than 6 inches nor more than 7 feet from finished grade.

3. Concrete Pull box

Concrete pull box may be required where lengths of runs are long or where service taps must be made. The size and location for these boxes will be determined by KIUC. Specifications for the boxes may be obtained from the KIUC Engineering Department. No one may enter, open or do work on existing pull box and/or conduits other than a "KIUC Approved Contractor" and only after authorized by KIUC's Construction Inspector.

4. Pulling Wire

The member shall install and leave in place a NEPTCO polyester MULETAPE #WP1800P (or equivalent) in each conduit installed by the member. Nylon string will no longer be accepted and will result in no service connection.

5. Sealing of Conduit

When the member furnishes and installs service conduits and cables from his facilities to a KIUC manhole, pull box, hand hole, vault, box or structure, a suitable device or materials for sealing these conduits shall be furnished, installed, and maintained by the member at his expense. The sealing device or material shall be installed at both ends of the conduit runs to prevent the entrance of moisture into the member's building or facilities from KIUC facilities. The member shall notify KIUC before installing his cables to and sealing his conduits in KIUC's manhole, pull box, handhole, vault, box or structure so that a KIUC representative can be present during the progress of this work in KIUC's facilities.

6. Inspection

No backfilling will be done until after Kaua'i Island Utility Cooperative (KIUC) inspection. To schedule the necessary inspection, call Member Services at 808-246-4300 (72 hours notice is required).

7. Trench Details

Typical illustrations only. Refer to KIUC
for complete details in specific cases.

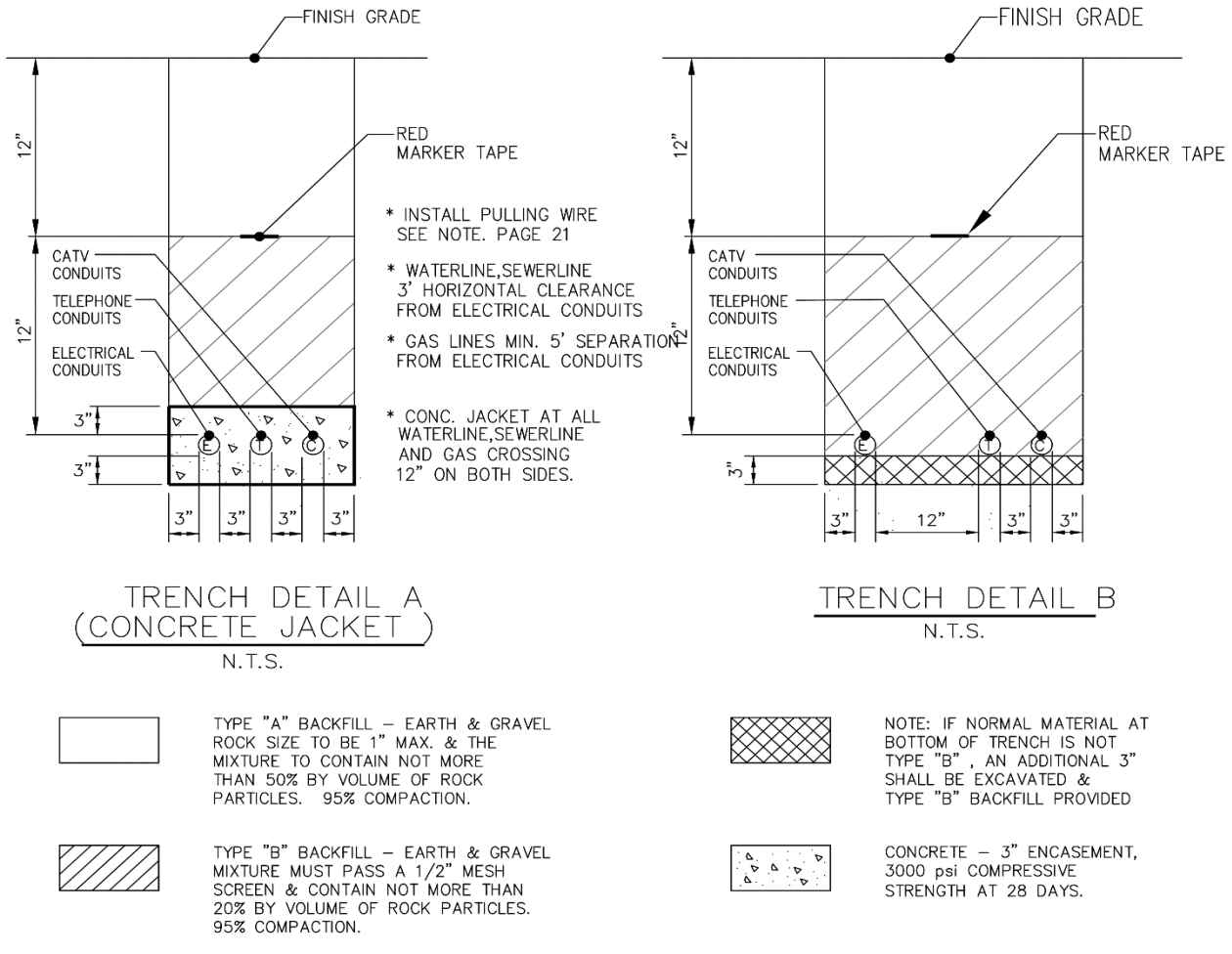


Figure 13: Trench details.

NOTES:

1. Member shall contact other utilities for size and type of conduit if they are to share trench.

2. Member shall install and leave in place a **NEPTCO polyester MULETAPE #WP1800P (or equivalent)** in each conduit installed by member. Nylon string will no longer be accepted and will result in no service connection.

3. Refer to Page 21 for note on sealing of conduits.

4. No work is to be done on KIUC's existing pull boxes and/or conduits by anyone other than a "KIUC Approved Contractor" and only after authorized by KIUC's Construction Inspector.

5. Members load side conduits will need to have 24 inches clearance in any direction to KIUC's conduits.

B. T. V. AMPLIFIER SYSTEM

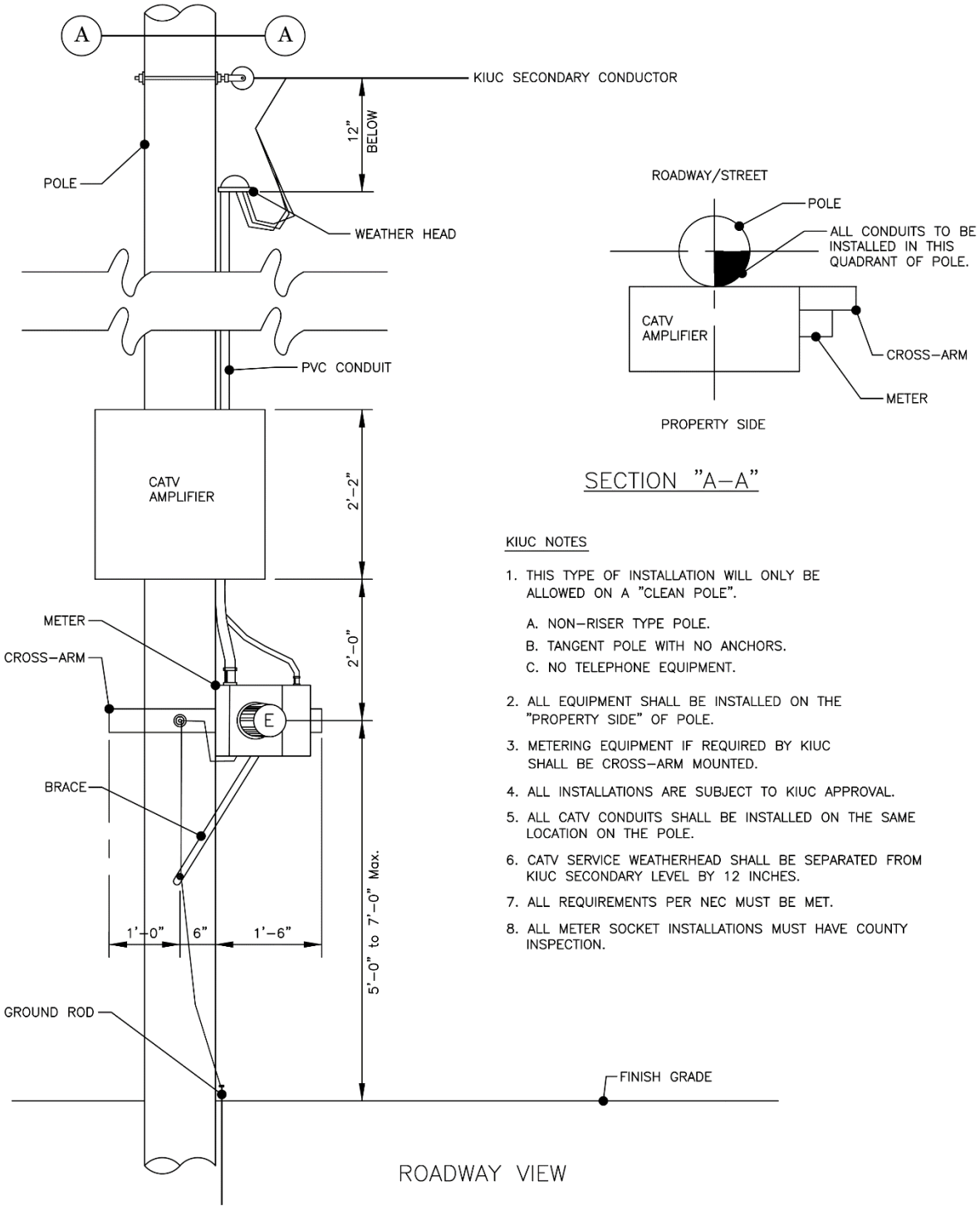


Figure 14: CATV amplifier details

C. TEMPORARY SERVICE OVERHEAD

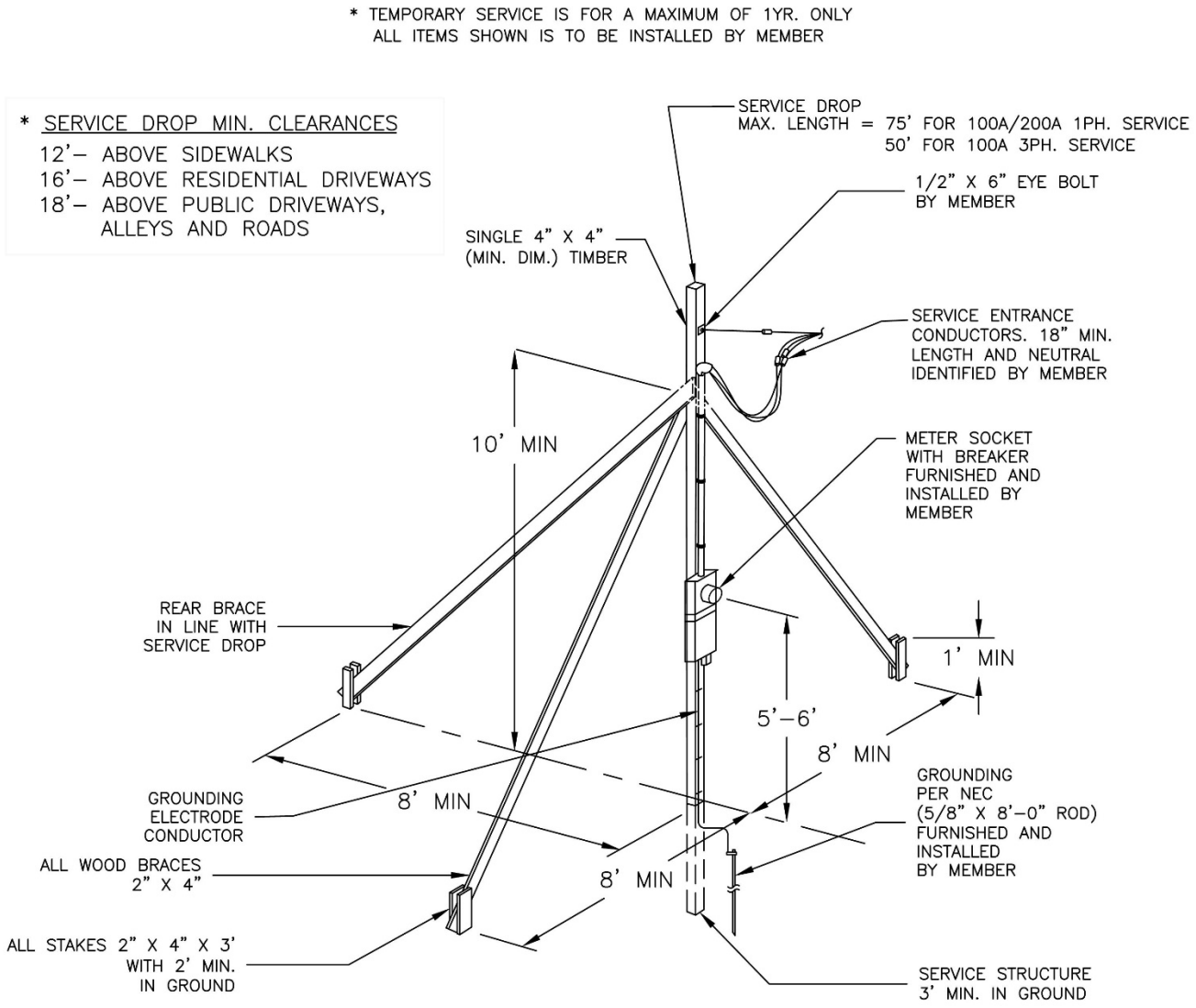
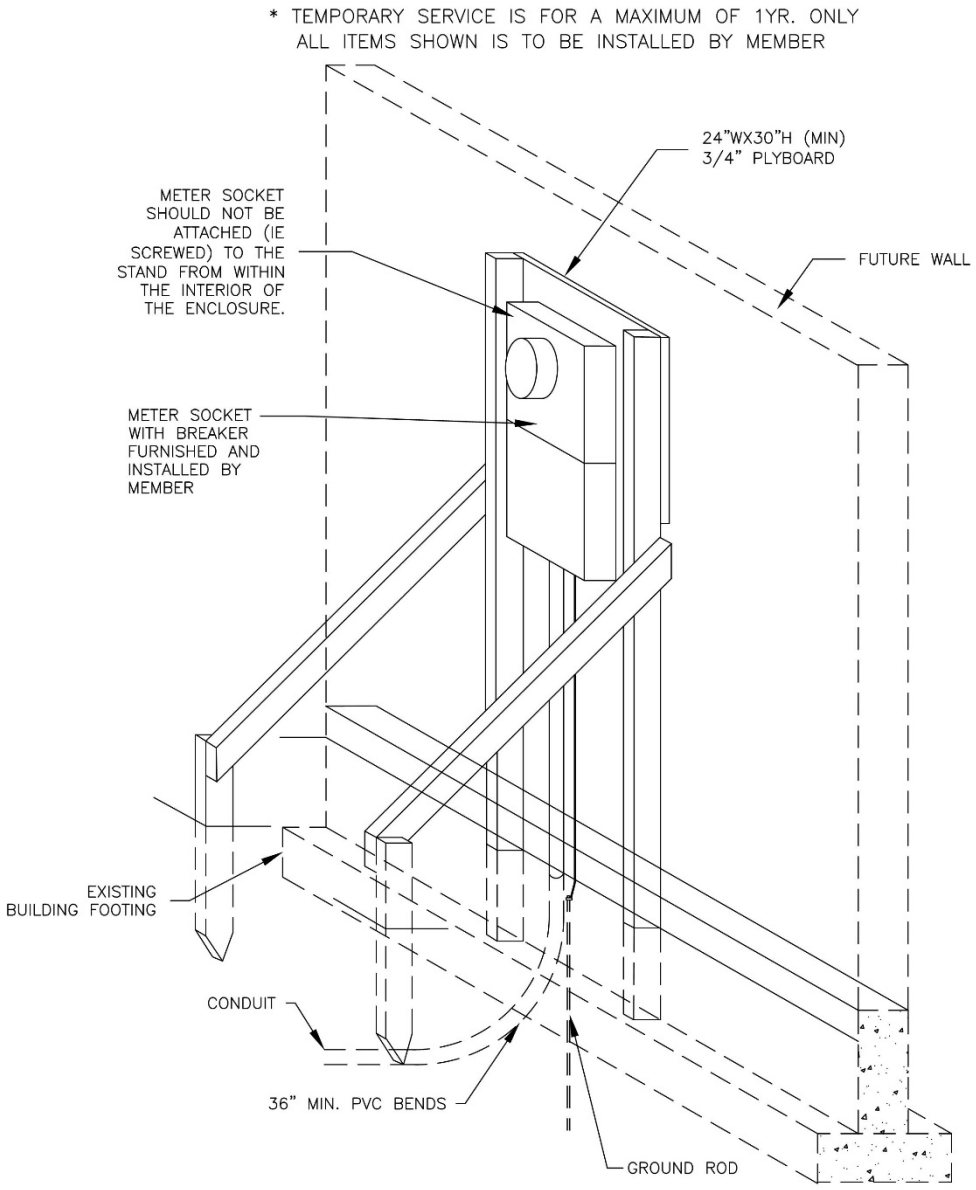


Figure 15: Temporary service details.

D. TEMPORARY SERVICE UNDERGROUND

NOTES:

1. All material and bracing similar to page 32.
2. See page 17-21 for residential underground requirements.
3. Meter height:
    a. For residential construction, temporary to become permanent, see page 17-21.
    b. For temporary commercial service, see page 32-33.



TEMPORARY SERVICE = 75' MAX.
TEMPORARY TO PERMANENT SERVICE = 125' MAX.
100A SERVICE = 2" or 3" PVC CONDUIT, 2–BENDS MAX. (NO EXCEPTIONS)
200A SERVICE = 3" PVC CONDUIT, 2–BENDS MAX. (NO EXCEPTIONS)

E. LOCATION

1. When a meter pole or pedestal is installed on the construction site, the meter is to be located away from the work area so as to avoid unnecessarily exposing KIUC personnel to such hazards as falling debris, heavy machinery operations, scrap piles, etc.

2. When a meter pole for overhead temporary service is required, it shall be placed on the same side of the building as the permanent service and within the required distance of the existing secondary facility.

F. AUTOMATIC TRANSFER EQUIPMENT

Equipment may be installed to automatically transfer Member's load from a de-energized preferred service to an energized alternate service, and to return to the preferred service either by automatic open transition return or by manual closed transition return performed by KIUC personnel. The manual closed transition return method may not be available at all locations on KIUC's system, and this option is offered subject to approval by KIUC. The requirements for either of these optional methods of operation are set forth in the following paragraphs.

1. Automatic Transfer with Automatic Open Transition Return

    a. Transfer equipment shall automatically transfer Member's load from a de-energized preferred service to an energized alternate service after an adjustable time period set by KIUC.

    b. When the preferred service is restored, the equipment shall make an automatic open transition return to the preferred service after an adjustable time period set by KIUC. The time period will range from five to ten minutes following restoration of preferred service. However, if during this time period the alternate service is interrupted, the equipment may make an automatic open transition return to the preferred service without waiting for the completion of the time delay period if the preferred service is energized.

    c. The protective and controlling equipment in the preferred and alternate services shall be designed to prevent paralleling the services during automatic transfer in either direction.

    d. The transfer equipment should have a "Normal-Closed Transition" selector switch and suitable interlocks so that the Member cannot parallel both services but KIUC can parallel both services when necessary to allow a manual closed transition transfer in either direction. This switch shall be sealed with a KIUC lock.

2. Automatic Transfer with Manual Closed Transition Return

    a. Transfer equipment shall automatically transfer Member's load from a de-energized preferred service to an energized alternate service after an adjustable time period set by KIUC.

    b. The Member should notify KIUC as soon as practical whenever the equipment automatically transfers to the energized alternate service.

    c. KIUC will manually make a closed transition transfer of the Member's load from the alternate service to the preferred service as soon as feasible after the preferred service is restored. However, if the alternate service is interrupted, the equipment may make an automatic open transition return to the preferred service if the preferred service is energized.

d. The protective and controlling equipment in the preferred and alternate services shall be interlocked to prevent paralleling the services during automatic transfer in either direction.

e. The transfer equipment shall have a "Normal-Closed Transition" selector switch and suitable interlocks so that the member cannot parallel both services, but KIUC can parallel both services when necessary to allow a manual closed transition transfer in either direction. This switch shall be sealed with a KIUC lock.

3. Additional Requirements

In addition to meeting the requirements of either paragraphs above, automatic transfer equipment shall comply with the following:

a. Installation of automatic transfer equipment shall comply with all applicable requirements.

b. The transfer equipment shall have provision for locking or blocking open either service and shall have targets to indicate whether each service is "Open" or "Closed" if this cannot be determined by a visible air gap.

c. The transfer equipment shall have provisions for changing either service to be preferred, so that the preferred feeder can be changed by KIUC.

d. The transfer equipment shall be accessible to KIUC at any time.

e. KIUC reserves the right to transfer the member's load to the alternate service and to block the automatic features temporarily to facilitate work or maintenance on KIUC's system.

f. The member shall obtain permission from KIUC before manually transferring to the alternate service.

g. The member shall operate his equipment so that it will not produce any adverse condition on KIUC's system in conformance with the Tariff.

h. It is highly recommended that the member install bus fault protection to provide automatic transfer blocking of his facilities in the event of a bus fault.

SECTION 4: METERING

A. METERING

In addition to the applicable requirements contained in Pages 5-12 of this Manual, the following requirements shall apply:

1. Mounting Heights / Group Metering

Center of KWH meter socket shall not be lower than 5 feet or higher than 6 feet above floor or finished ground line (preferred meter height is 5 feet 6 inches), except as follows:

   a. Whenever meters are installed in rooms with doors, specifically reserved for metering or service equipment, the minimum mounting height shall be 3 feet.

   b. Whenever meters are protected by a KIUC-approved enclosure which will protect the meter from mechanical injury and will permit reasonable access to the meter by KIUC, the minimum mounting height shall be 3 feet. The member shall submit a sketch of the proposed enclosure to KIUC for approval before proceeding with the installation.

2. Clearances

   a. Horizontal clearance on each side of meter socket to any obstruction such as walls, windows, doors, fences, stairs, etc. shall be greater than 6 inches.

   b. Clearance in front of meter socket shall have a radius of 4 feet clearance to any obstruction such as walls, fences, trees or hedges.

   c. Vertical clearance above meter socket to any obstruction such as windows, etc. shall be greater than 6 inches.

   d. Clearance of 5 feet minimum to any propane tank or flammable material.

3. Metering Sequence – Lineside Disconnect Must Be Installed by Member

Metering equipment shall be installed ahead of service equipment with the following exceptions:

   a. On group installations of more than 6 meters.

   b. On 480 volt direct metered services.

4. Sealing of Metering and Service Equipment

All metering and associated service equipment, gutters, raceways or other compartments containing unmetered conductors shall be sealable by KIUC.

5. Instrument Transformer Cabinets

The member shall install KIUC approved instrument transformer cabinets for the installation of KIUC's instrument transformers on all services with current limiting protection exceeding 200 amps or a demand of 100KVA or

greater. The instrument transformer cabinets shall comply with the following:

a. Cabinets shall be equipped with mounting racks for KIUC's instrument transformers.
b. Outdoor cabinets must be weatherproof (NEMA "3R").
c. Cabinets shall not be used for splicing, unless approved by KIUC.
d. Cabinet covers shall have two handles for lifting.
e. Cabinets and associated meter safety socket boxes shall be installed with minimum dimensions as shown on Page 39.
f. Cabinets shall be mounted not less than 1 foot nor more than 7 feet above finished grade as shown on Pages 39-41.
g. Cabinets shall have minimum sizes as listed in the following table:

Minimum Cabinet Sizes

CABINET SIZE	CONDUCTOR SIZE
30" x 30" x 11" deep	One #3/0 per phase or smaller
36" x 36" x 11" deep	One 500 MCM per phase or smaller
42" x 42" x 11" deep	Three 500 MCM per phase or smaller
36" x 48" x 11" deep	Three 500 MCM per phase or smaller*
48" x 48" x 11" deep	Special - when specified by Company

Table 1: Minimum cabinet sizes

* With side entrance cables only

6. Conductors

For member-installed cables, line and load conductors shall be of the same size and number and be identified as to phase and neutral or high leg when applicable (i.e. 1-2-3-G or black-red-blue-white/green; connected to the meter terminals left to right)

7. Meter Sockets and Safety Socket Boxes

The member shall install KIUC approved meter sockets or safety socket boxes for all meter installations except for recording or totalizing meters. The sockets or safety socket boxes shall meet the following requirements:

a. Meter sockets for installations not requiring the use of instrument transformers (self-contained type) may be equipped with a manual circuit closing device.

b. For any service having total current limiting protection exceeding 200 amps the member shall provide one safety socket box for measuring KWH.

8. Group Meter Installations

a. When groups of meters are to be installed at one location, the applicant (or his electrical contractor) shall furnish a sketch identifying the area to be served by each meter socket (i.e., apartment number, office number, etc.) Before meter installation, the applicant (or his electrical contractor) shall mark each

meter socket with a permanent identification (i.e., plastic engraved label, painted identification) to indicate the area served by the meter socket.

b. When an additional meter socket is installed adjacent to an existing meter location, a metal raceway is to be installed by the member to accommodate the meter sockets. (Refer to pages 40 & 41). The raceway size will be specified by the contractor but must be approved by KIUC.

c. KIUC recommends the installation of ILSCO type LDB Power Distribution Blocks or equivalent in the raceway for future meter installations.

d. When seven or more meters are installed in a single enclosure, in a group of separate enclosures or in a switchboard, the applicant (or his electrical contractor) shall comply with NEC 230.71.

9. Prohibited Metering Locations

No meter or metering equipment shall be installed in any location which is not readily accessible at all times. Examples of locations not approved for installation of meters or metering equipment are the following:

a. In an elevator shaft or hatchway.
b. In any attic or place not in general use.
c. In any rest, bath, shower or toilet room.
d. Near any moving or rotating machinery unless all such machinery is guarded and meters are outside of the guarded area.
e. Near any high voltage compartment, switchboard or other bare or exposed live parts unless such meter is located at least 4 feet from such parts and is effectively screened from them.
f. In any building unless approved by KIUC.
g. In any locked area unless requirements of paragraph H, page 11, are complied with.
h. In areas used for trash containers, storage or janitors' rooms.
i. Where the meter projection could hinder or become a hazard to pedestrian traffic.

In the event that the member's meter is obstructed by new additional construction, it is the member's responsibility to relocate meter at the member's expense. KIUC has the right to terminate service.

10. Operating and Instrument Transformers

Transformers for operating protective and controlling equipment shall be installed on the load side of KIUC's metering facilities. All other loads such as switchgear heaters, lights, convenience outlets, etc., shall also be installed on the load side of KIUC's metering facilities. All potential and control power transformers shall be provided with primary fuses adequate to interrupt the maximum fault current as specified by KIUC.

11. 480 Volt Direct Service

The member must provide a sealable, non-fusible disconnect switch or breaker just ahead (line-side) of the meter socket for direct metered accounts not exceeding 200 amp current limiting protection and less than 100 KVA demand.

12. Indirect Metering

The member must install a disconnect switch or breaker just after (load-side) all instrument transformer cabinets.

The disconnecting device must be capable of being locked in the open (OFF) position and accessible by KIUC.

13. Typical Installation of Instrument Transformer Cabinet and Meter Safety Socket Boxes

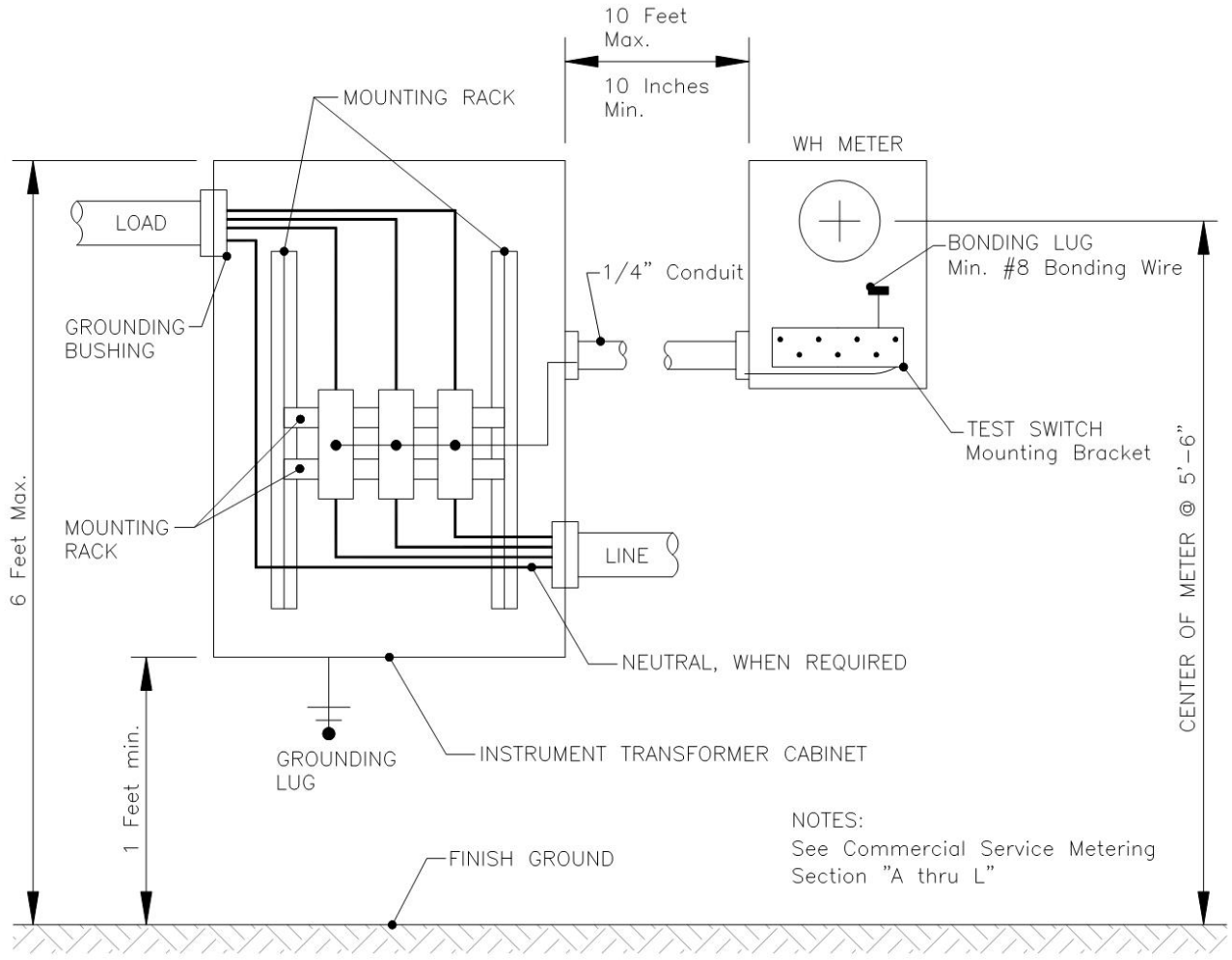


Figure 16: Typical installation of instrument transformer cabinet and meter safety socket boxes.

NOTES:

1. All metering boxes and cabinets must be bonded together to ground with #8 bare copper wire. The use of grounding bushings alone between the metering boxes and cabinets are not sufficient for metering accuracy.

2. The member will obtain instrument transformers from KIUC and mount them in the cabinet. KIUC to wire instrument transformers to metering.

3. Meter height requirement = 5 feet to 6 feet.

14. Group Metering Diagram

a. Group Metering Using a Sealable Metal Raceway

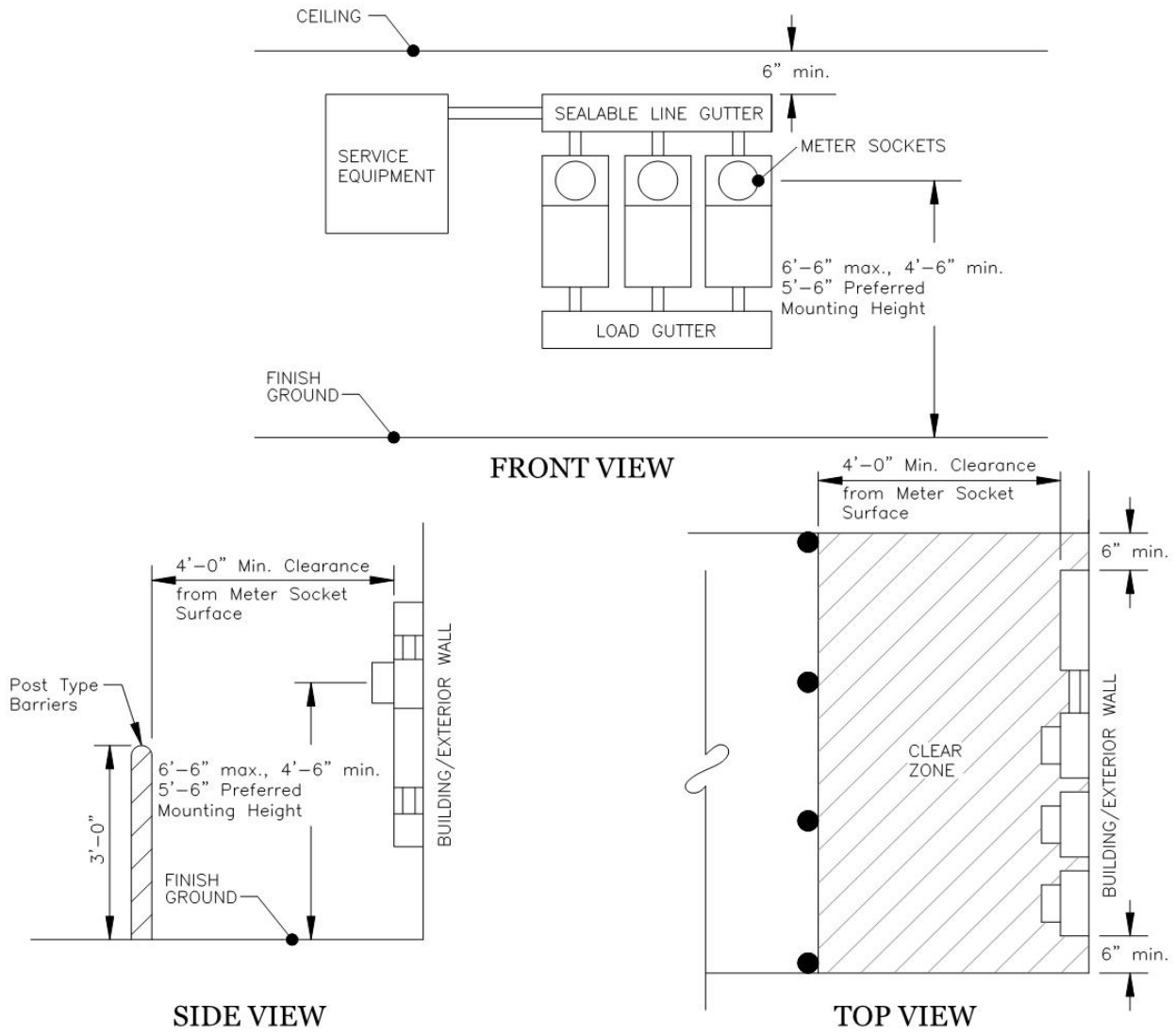


Figure 17: Group metering using a sealable metal raceway.

NOTES:

1. Refer to page 36-41 for information on meter sequence for group installation of 6 meters or less.
2. The gutter shall be installed as directed by Article 374 of the N.E.C. Meter line conductors shall leave the gutter adjacent to the socket. Meter load conductors shall not enter the gutter.
3. Refer to page 36, section 2 for clearance requirements.
4. Bond meter sockets to service equipment ground per N.E.C. requirements.
5. All plans must be submitted to KIUC for review and approval.

b. Group Metering Using a Sealable Metal Raceway in an Enclosed Area

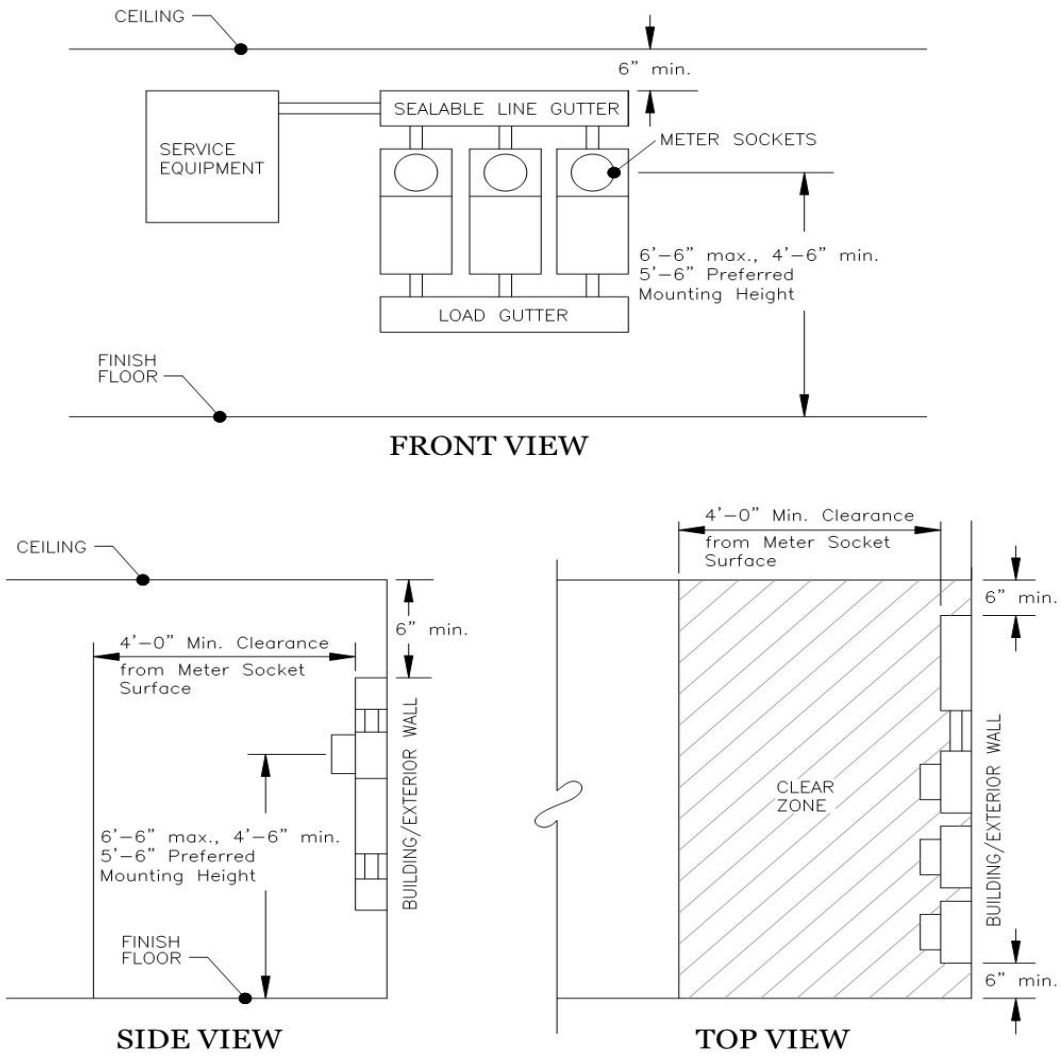


Figure 18: Group metering using a sealable metal raceway in an enclosed area.

NOTES:

1. Refer to page 36-41 for information on meter sequencing for group installations of 6 meters or less.
2. Meter load conductors shall leave the sockets and must not re-enter the line gutter.
3. Refer to page 36, section 2 for clearance requirements.
4. Bond meter sockets to service equipment ground per N.E.C. requirements.
5. All plans must be submitted to KIUC for review and approval.

15. Meter Socket Dimensions for Self-Contained Meters with Factory Installed Test By-Pass Facilities

a. 100 AMP

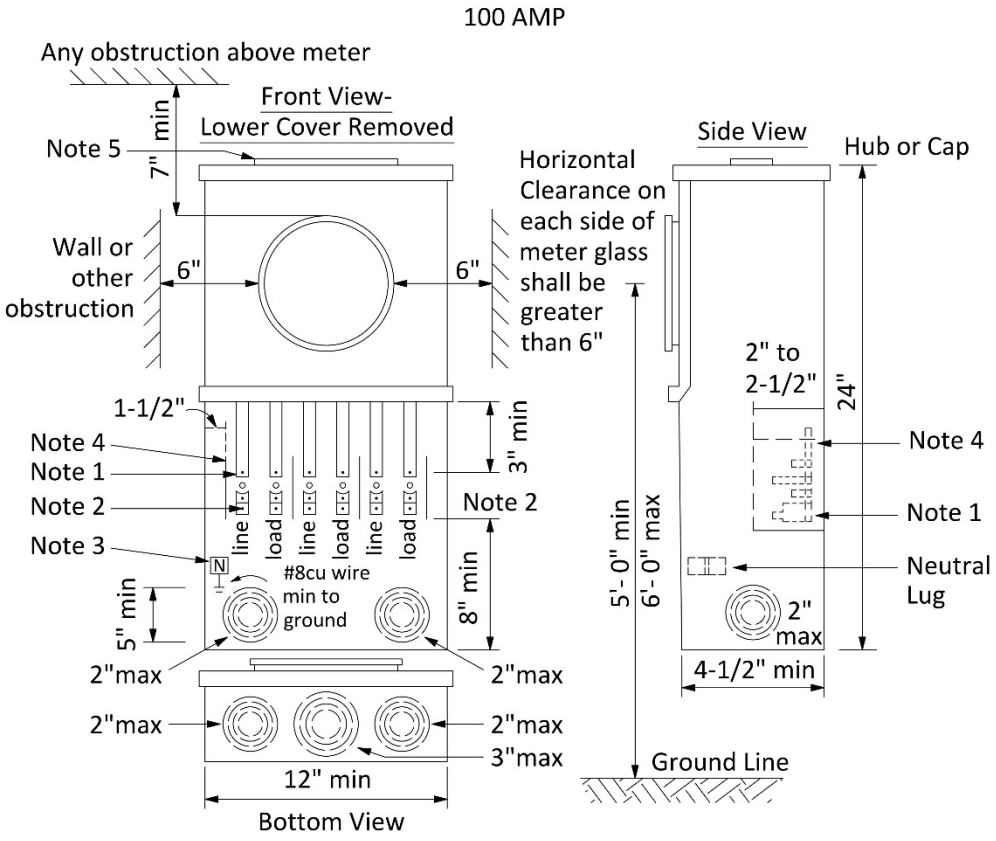


Figure 19: 100 amp meter socket dimensions for self-contained meters with factory installed test by-pass facilities.

NOTES:

1. Test blocks, bussed or wired to the socket jaws or terminals.
2. Aluminum bodied terminals for #6 AWG through #1/0 AWG wire for copper aluminum conductors.
3. Insulated bondable vertical lay-in double neutral lug with #1/0 wire capacity.
4. Rigid insulating barriers.
5. Hubs capped off if used for underground feed.
6. Sockets shall be installed with jaws vertical and plumb.
7. Refer to page 25-38 for additional socket requirements.

b. 200 AMP

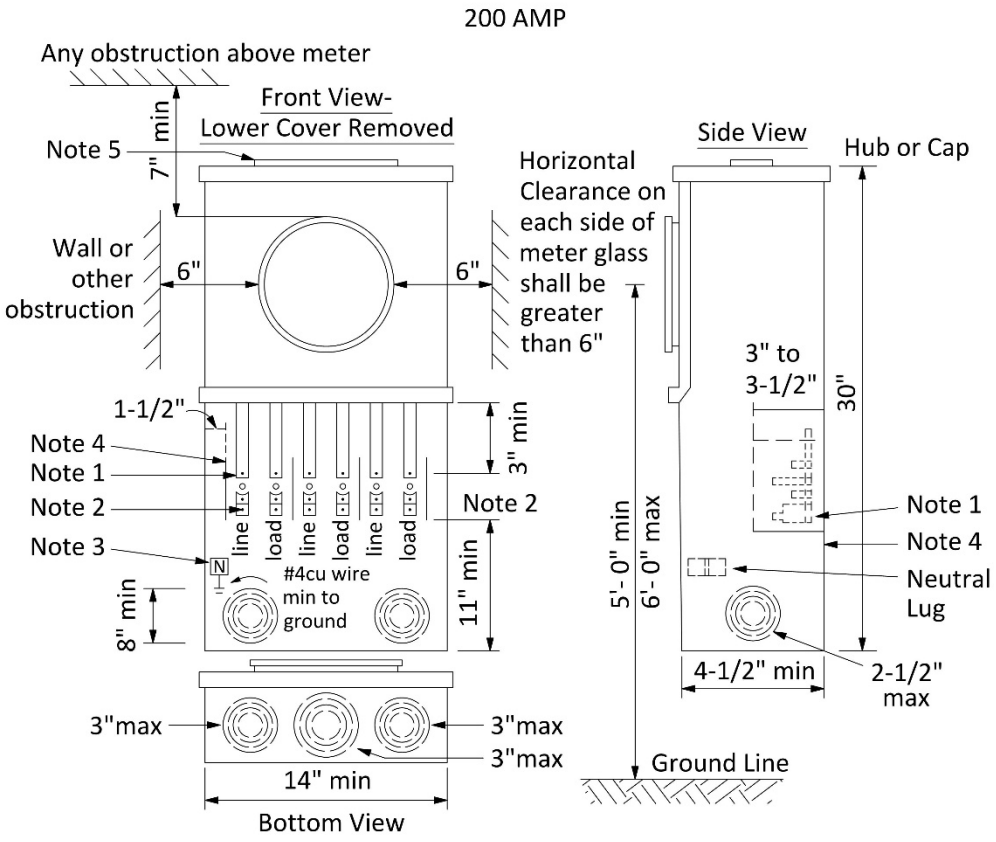


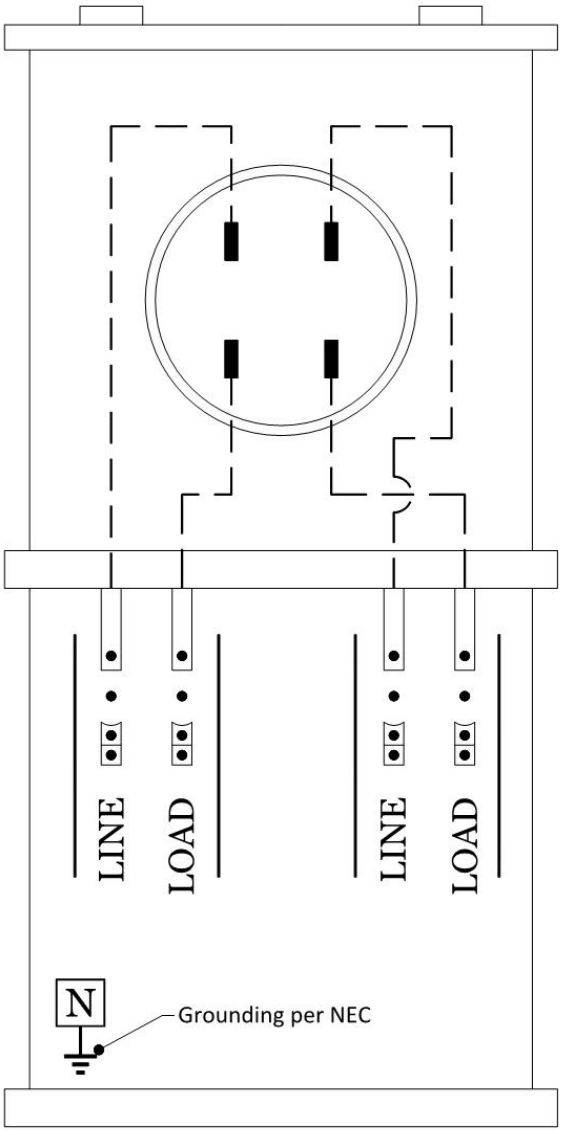
Figure 20: 200 amp meter socket dimensions for self-contained meters with factory installed test by-pass facilities.

NOTES:

1. Test blocks, bussed or wired to the socket jaws or terminals.
2. Aluminum bodied terminals for #1/0 AWG through #250MCM wire for copper and aluminum conductors.
3. Insulated bondable vertical lay-in double neutral lug with #250MCM wire capacity.
4. Rigid insulating barriers.
5. Hubs capped off if used for underground feed.
6. Sockets shall be installed with jaws vertical and plumb.
7. Refer to page 25-38 for additional socket requirements.

16. Meter Socket Wiring Diagrams for Self-Contained Meters

a. 4-jaw, 1-Phase, 3-wire, 120/240 Volt, 100 amp & 200 amp.



4-JAW
1-PHASE, 3-WIRE, 120/240 VOLT

Figure 21: 4-jaw, 1-Phase, 3-wire, 120/240 Volt, 100 amp & 200 amp socket wiring

b. 4-JAW, 1-Phase, 3-wire, 120/240 Volt, 320 amp.

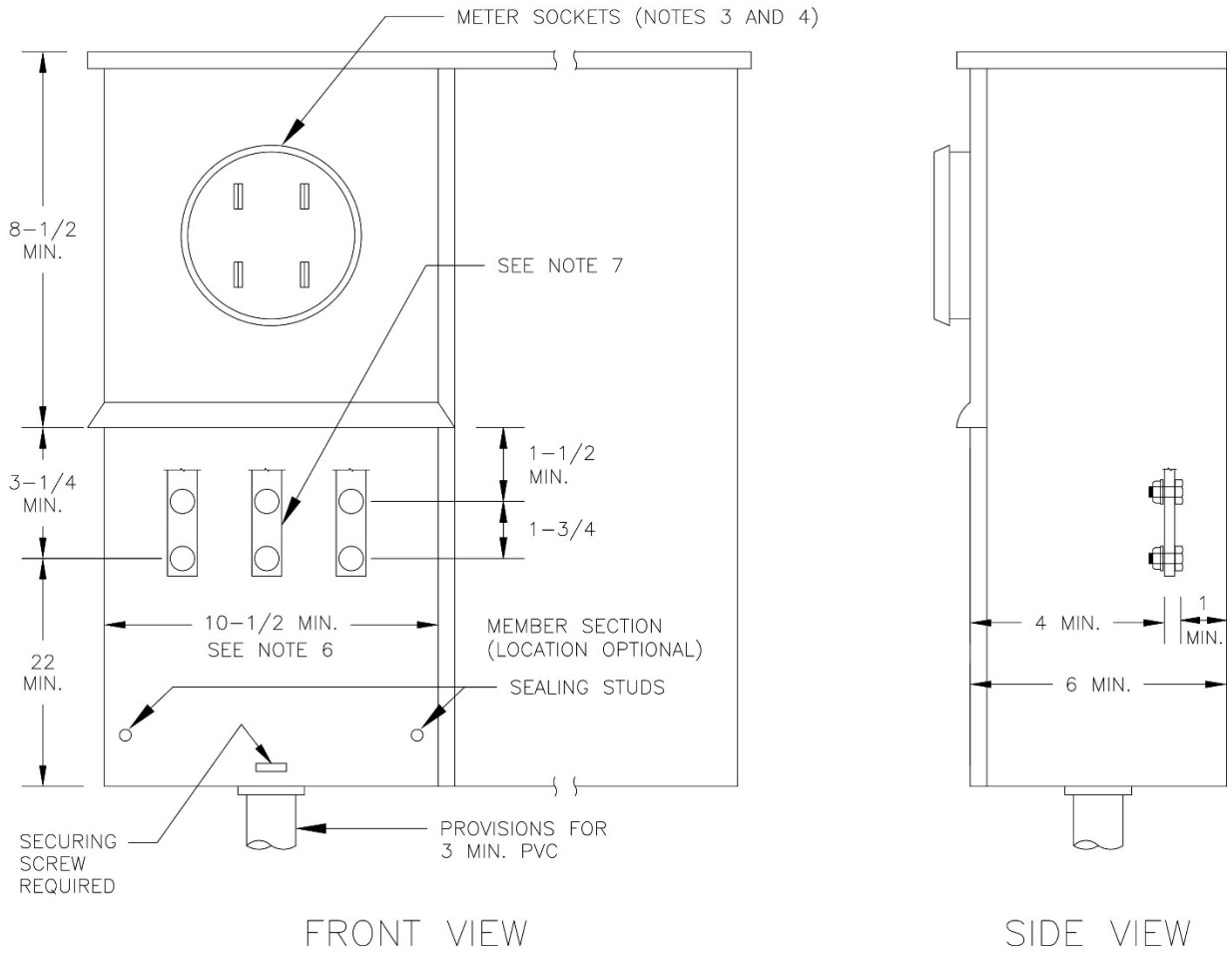


Figure 22: 4-JAW, 1-Phase, 3-wire, 120/240 Volt, 320 amp socket wiring

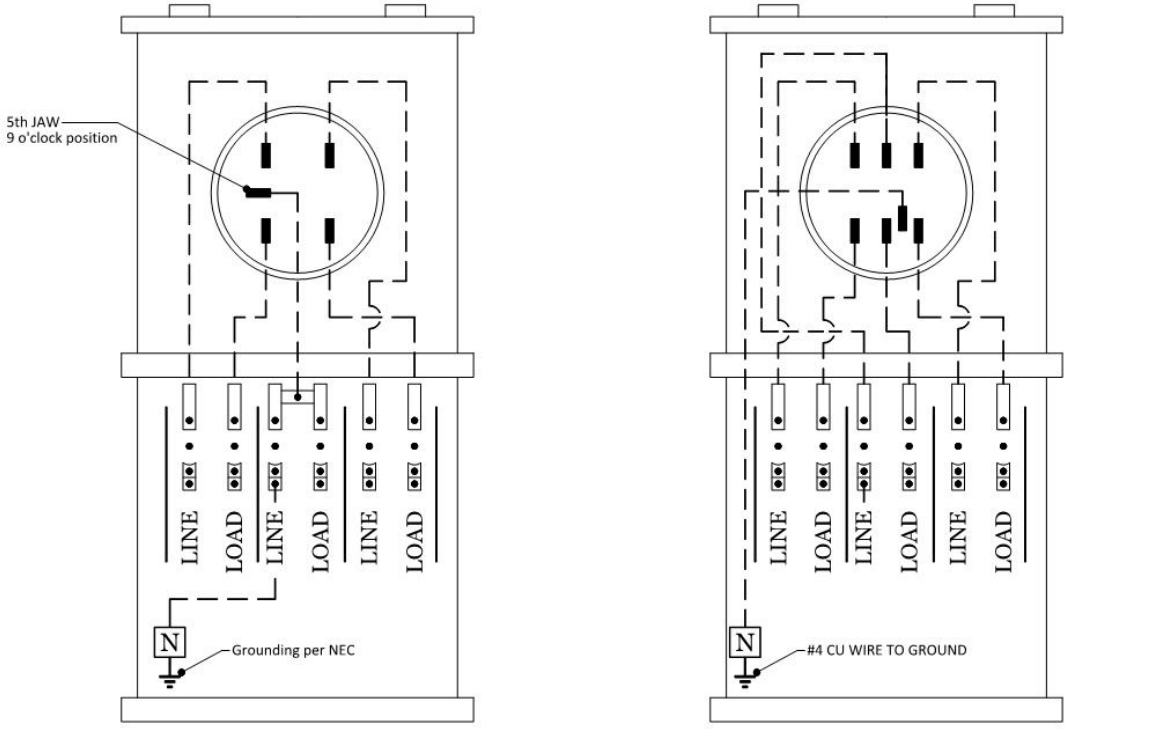
Notes:

1. The panel shown is a combination device having both a utility section (i.e. pull section and metering section) and member section, but may also be constructed without an attached member section.
2. The panel shall be marked with either a rating of "320 amperes continuous" or "400 amperes maximum (320 amperes continuous)".
3. The panel shall be provided with a sealing ring and the meter socket shall be rigidly mounted on a support and attached to the meter panel.
4. The meter socket at be located above the left, or right of the terminating pull section.
5. Pull section cover panels shall be removable, sealable, provided with two lifting handles, and limited to a maximum size of 9 square feet in area.
6. The access opening dimension shown is measured between the return flanges.

7. Cable terminating facilities shall consist of single-position studs with clearances and access requirements complying with Drawing 302 (EUSERC).
   Exception: The neutral clearances to the back wall of the enclosure may be reduced.

c. 5-Jaw, 1-Ph., 3-wire, 120/208 Volt.

d. 7-Jaw, 3-Ph., 4-wire, 120/208 or 277/480 Volt.



5-JAW
1-PHASE, 3-WIRE, 120/208 VOLT

*Multi-Meter Location
All Meters must be properly labeled for each unit on the exterior of all Meters with Min. of 1" high lettering.

*Meters will not be energized if not properly labeled.

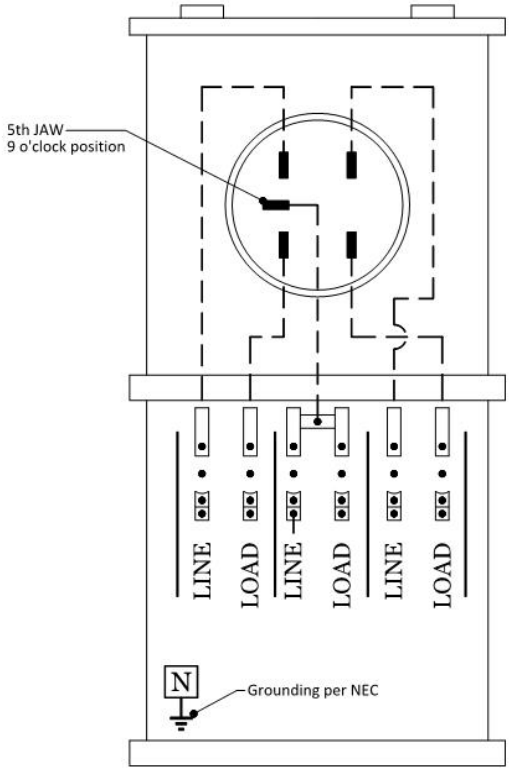
7-JAW
3-PHASE, 4-WIRE, 120/208 VOLT
OR 480/277 VOLT

*Multi-Meter Location
All Meters must be properly labeled for each unit on the exterior of all Meters with Min. of 1" high lettering.

*Meters will not be energized if not properly labeled.

Figure 23: 5-jaw, 1-Ph., 3-wire, 120/208 Volt (left) and 7-Jaw, 3-Ph., 4-wire, 120/208 or 277/480 Volt (right).

e. 5-Jaw, 3-Ph., 3-wire, 480 Volt Delta.

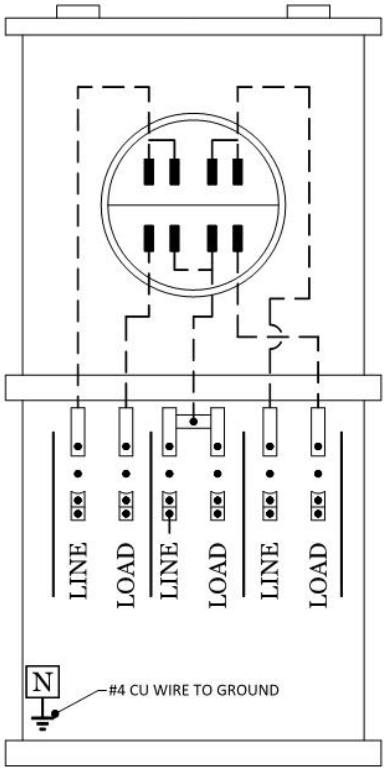


5-JAW
3-PHASE, 3-WIRE, 480 VOLT DELTA

*Multi-Meter Location
All Meters must be properly labeled for each unit on the exterior of all Meters with Min. of 1" high lettering.

*Meters will not be energized if not properly labeled.

f. 8-Jaw, 3-Ph., 3-wire, 480 Volt.



8-JAW
3-PHASE, 3-WIRE, 480 VOLT

*Multi-Meter Location
All Meters must be properly labeled for each unit on the exterior of all Meters with Min. of 1" high lettering.

*Meters will not be energized if not properly labeled.

Figure 24: 5-jaw, 3-Ph., 3-wire, 480 Volt delta(left) and 8-Jaw, 3-Ph., 3-wire, 480 Volt (right).

17. Meter Socket Jaws Arrangement for Self-Contained or Instrument Transformer-Rated Metering

The number of jaws in the meter socket and their arrangement to match the meter furnished and installed by the utility company varies with the classification of service supplied to the member and the determination of self-contained or transformer-rated metering.

The following table lists the information on meter socket jaw arrangements to enable the member to provide the proper equipment.

CLASSIFICATION OF SERVICE			SELF-CONTAINED METER SOCKET	TRANSFORMER-RATED METER SOCKET	
			BREAKER 200 AMPS OR LESS	BREAKER GREATER THAN 200 AMPS	
Voltage	Phase	No. Wires	No. of Jaws KWH	No. of Jaws KWH	No. of CT's
120/240	1	3	4	8	2
120/208	1	3	5	8	2
480	3	3	5	8	2
120/208Y	3	4	7	13	3
277/480Y	3	4	7	13	3

Table 2: Meter socket jaw arrangements for various classes of service.

For primary and totalized metering requirements consult the utility company.

3-phase, 3-wire, 240 and 480 Volt service is only served overhead.
3-phase, 4-wire, 277/480Y Volt service is served overhead and underground.

B. METERING IN SWITCHGEAR

Applicable requirements contained in pages 36-48 shall apply to metering in switchgear. Switchgear which conforms to appropriate plates and specifications of the Electric Utility Service Equipment Requirements Committee (EUSERC) will, in general, be acceptable. However, where EUSERC conflicts with the Service Installation Manual, the requirements of the Manual shall apply.

The member should check the switchgear design to insure that applicable KIUC metering requirements of clearances, mounting heights, metering sequence, test blocks, auxiliaries, sealing of equipment, and accessibility, as contained in pages 36-38 are met. To avoid possible conflicts and delays, drawings of the switchgear shall be submitted for review and approval as soon as possible to the KIUC Engineering Department.

Copies of EUSERC are available for examination at the Company.

SECTION 5: APPENDIX

A. DEFINITION OF TERMS

Commercial Service: Electric service to any building at other than residential rate schedules.

Company: The service utility: Kaua'i Island Utility Cooperative (KIUC)

Line Extension: All facilities excluding line transformers, service connection, and meters, required to extend electric service from KIUC's existing facilities to the member's point of delivery.

Member: The person, group of persons, firm, corporation, association, institution, governmental agency or civic body, in whose name electric service is rendered (regardless of the actual identity of the user of the service) as evidenced by the signature on an application, contract or agreement for service or, in the absence of a signed instrument, by acceptance of service or by the receipt and payment of bills for service issued in his name.

Permanent Service: Service which is of a permanent and established character.

Point of Delivery: The point where KIUC's conductors are connected to those of the member regardless of the location of the meters and transformers.

Pull Box: An enclosure for joining conductors and facilities for pulling conductors into place. The term as used in the Service Installation Manual includes "splice cans" "manholes" "hand holes" and "switchboard pull sections."

Readily Accessible: Capable of being reached quickly for operation, renewal or inspections, without requiring Company personnel to climb over or remove obstacles or to resort to portable ladders, chairs, etc., or to enter or pass through living quarters such as individual units in apartment buildings, enclosed patios, lanais, etc.

Residential Service: Electric service to single-family dwelling metered and billed separately by KIUC, unless otherwise provided for in the Company Tariff. Incidental farm service used in the production of farm crops, produce and poultry will be supplied, when combined with residential service, through the same meter as the farm operator's residence only when the transformer capacity required for the combined load does not exceed the normal capacity required for the single family residential load of that residence.

Service (Electric Service): Electrical energy generated, transmitted, distributed or furnished by KIUC.

Service (Conductors and Equipment): The conductors and equipment for delivering energy from the electricity supply system to the wiring system of the premises served.

Service Conductors: That portion of the supply conductors which extends from the street main or duct or from transformers to the service equipment of the premises supplied. For overhead conductors this includes the conductors between the last pole or other aerial support and the service equipment.

Service Drop: That portion of overhead service conductors between the last pole or other aerial support and the first point of attachment to the building.

Service Entrance Conductors: That portion of service conductors between the terminals of service equipment and a point outside the building, clear of building walls, where joined by tap or splice to the service drop or to street mains or other source of supply.

Service Equipment: The necessary equipment, usually consisting of circuit breakers or switches and fuses, and their accessories, located near point of entrance of supply conductors to a building and intended to constitute the main control and means of cutoff for the supply to that building.

Service Head (Weather head): The rain tight wiring device terminating the service entrance conductors at the point where they connect to the service drop.

Service Drip Loop: Slack span or (loop) of service conductor at the members connection point.

Tariff: The entire body of rates, charges, definitions and rules including those services contained in special contracts and supplemental tariffs adopted and filed by KIUC as set forth and authorized by the Public Utilities Commission.

Temporary Service: Service for enterprises or activities which are temporary in character or where it is known in advance that service will be of a limited duration and service which is for operations the permanency of which has not been established.