

SERVICE GUIDE

2021 EDITION

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This document is subject to periodic review and may be updated at any time. Please ensure that you have the latest version available at www.mea.coop.

MATANUSKA ELECTRIC ASSOCIATION, INC.
PALMER, ALASKA

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Revision History (Older History Removed)

Date	Revision
9/23/19	Figure 1 updated to show two required conduit clamps. Figures 7, 8 and 9 updated with notes to allow for direct fire-pump connection. Figures 5-10 updated to require RSC sweeps. Explicitly disallow RMPs for overhead service in Sections 4B and 4C.
1/6/20	Formalized subdivision and looping requirements under Section 1E. Added and clarified easement language under Section 1F. Formalized the allowance of member-trenching for services under Section 1G. Formalized ability for owner-designs under Section 2D. Added guidelines for electrical contractor’s construction near energized MEA equipment under Section 2E. Clarified what is covered by Section 4.02 and 4.03 of the MEA Tariff for temporary services in Section 4F.
1/20/20	Removed guidelines for electrical contractor’s construction near energized MEA equipment under Section 2E.
4/28/20	Added clarification for the proper application of the “MEA-Compliant Single-phase Meter Bases” document in Section 3A.
5/26/20	Formalized requirement on meter base location on served lot in Section 3B.
01/08/21	Added information and figure for Temp to Perm Meter Base against permanent structure in Section 4D and Figure 2A.

SECTION 1 – GENERAL INFORMATION

1A: Introduction

This Service Guide, based on the Tariff, is your installation guide to Matanuska Electric Association's (MEA) requirements for new, relocated, or upgraded electric service. This document contains information for single-phase residential, and single or three-phase commercial installations. Three-phase infrastructure and services may not be available at some locations.

MEA considers any entity which has been assigned an Alaska commercial business license a commercial installation. Any single or detached multi-family dwellings or four (4) or more, also known as "4-plexes" are also considered commercial installations. Locations which have obtained an Alaska license as a Marijuana Cultivation Facility are also considered commercial installations.

This booklet should be used only as a guide and is not intended to ensure the adequacy and safety of the member's installation. It is your responsibility to ensure that your installation complies with the most recent edition of the National Electric Code (NEC) and any other federal, state, or local codes that may apply. Additionally, there may be scenarios where this guide will not directly apply. In these instances, the MEA Engineering Department will determine appropriate requirements.

Portions of this guide are based on various codes that are subject to change. The most recent version is available on our website at www.mea.coop or at an MEA district office. An online Cost Estimator is also available on our website to provide a ballpark estimate of how much a new electric service will cost.

1B: Service Installation, Start to Finish

Depending on the specific circumstances at your location, not all of these steps may be required.

- 1.** Service Application (see Section 2)
- 2.** Preliminary engineering and cost estimate
- 3.** Right-of-way or permits obtained, as applicable
- 4.** Final engineering and cost estimate
- 5.** Letter of Agreement signature and fees paid, if any
- 6.** Meter base inspected and approved
- 7.** MEA field staking
- 8.** Right-of-way clearing, if needed
- 9.** Construction

1C: Inspections

After your service entrance is installed, MEA, or their designated assignee, will perform an inspection. The first inspection is free of charge, but all additional inspections are subject to a \$67.00 fee. MEA does not perform the function of inspecting your internal wiring for compliance with electrical codes or governmental agencies. MEA will not perform an inspection of electrical equipment or wiring that is internal to a building.

Commercial installations also require either a State of Alaska inspection performed by a representative of the Mechanical Inspection Division (telephone 707-1733), or a certified self-inspection through the MEA Commercial Service Inspection Form completed by a State licensed electrician or electrical engineer. State inspections are preferred.

The State reserves the right to inspect any commercial installation whether or not it was contacted and is the ultimate authority for a commercial site inspection, with the following exceptions.

If the service is located within the Palmer City limits, the City Inspector may inspect the service rather than the State of Alaska. Also, for Municipality of Anchorage projects in Eagle River and Chugiak, the Municipal Inspector will inspect the service.

1D: Temporary Construction

Temporary service to construction sites is available until the permanent service is installed. See Section 4F for additional information.

MEA will provide electric service to facilities that are to be used for short periods such as fairs, shows, mobile units, construction camps, etc. Since these uses are of a temporary nature and do not constitute the construction of service to permanent facilities, the member is required to pay for the installation and removal costs. An estimate will be prepared on request, and the member will pay this amount prior to construction.

1E: Subdivisions and Looping

Developer must enter a Subdivision Agreement if they wish to interconnect their electrical infrastructure to MEA's system. The Subdivision Agreement shall apply regardless of whether a Developer is interconnecting a single lot or multiple lots within a subdivision they have or are in the process of developing. MEA's Subdivision Agreement will typically apply to developments covered by Section 7.05 of MEA's Tariff.

MEA may, at its sole discretion, determine that the Developer's electrical infrastructure must be tied to MEA's system at multiple locations. When this is done, it is referred to as "looping". Typically looping will be done on underground primary facilities that serve eight (8) or more lots/properties, services to critical load(s), and/or when the installation serves a connected load of 500 kVA or more. Looping is done to increase reliability to MEA's members by providing an alternate source to feed the load(s). The cost for installing facilities necessary to loop a subdivision shall be paid for by MEA. However, the Developer shall provide the necessary right-of-way for MEA to install said looping facilities.

Pursuant to Section 7 MEA's Tariff, a Developer (including Subdividers) will be required to pay for all costs associated with the electrical facilities necessary to serve the lots in a subdivision. MEA must review and approve all the Developer's electrical designs of which MEA will assume ownership pursuant to the Subdivision Agreement. Developers will also be required to supply, at no cost to MEA, all easements necessary for the subdivision's electrical facilities. As noted above, MEA will be responsible for the cost of any facilities necessary to loop the Developer's electrical facilities. Based on limited or phased development, the construction of the loop may be deferred to a later date at the discretion of MEA.

1F: Utility Easements and Entity Permits

As a part of your project, MEA will request an easement on your property. The easement will allow MEA, or its contractor or agents the rights to install facilities on your property to serve you and to extend service to others in the future. An easement provides MEA with the rights necessary to install its facilities on the property for electric and telecommunications purposes (through joint-utility agreements). Before MEA can proceed with the construction of your project, it must receive a completed, signed and notarized easement from the landowner. Easement forms and notaries are available at the MEA offices listed at the end of this document.

An easement is an interest in land for a specific purpose. An MEA easement includes the right of access to construct, operate and maintain MEA facilities on, over or under the subject property. This includes the right to inspect, repair, alter, improve and even to remove facilities over the easement area. MEA easements must be cleared of trees, brush and other obstructions. MEA easements include the right to cut or remove vegetation, which may include but is not limited to trees, brush and/or other obstructions. In addition, obstructions within the easement area that interfere with construction or maintenance activities cannot be allowed due to safety concerns. Structures that create safety concerns include sheds, greenhouses, buildings and parts of buildings, wells and other permanent structures. Allowable uses of MEA easements include pavement, gardens, short types of shrubbery, some septic uses and wood fences (with removable sections to allow access to MEA equipment). Easement rights allow MEA to conduct the business of providing electric and telecommunications services only. MEA easements cannot be used by others for access or any another purpose.

The Subdivider's work may require the Subdivider to work under an MEA utility permit from the Mat-Su Borough, State of Alaska, City of Palmer, City of Wasilla, City of Houston, the Municipality of Anchorage, or the Alaska Railroad. The permit(s) will be attached to the work order documents. The Subdivider shall perform construction in accordance with any such permits to the agency's satisfaction and shall keep the permit on the job site at all times. Permitting agencies require advance notification of construction schedule, among other requirements; Subdivider is solely responsible for making any such notification in accordance with the permit. Subdivider shall be solely responsible for the payment of any and all fines and/or penalties that may be assessed by the respective agencies for permit violations and shall be solely responsible for defending against any alleged permit violations.

1G: Trenching and Clearing

MEA or its contractor will typically perform all trenching. If a member wishes to perform their own trenching for their service, this may be allowed on a case-by-case basis. You will need to contact the technician that is working on your project for specific requirements and authorization to dig

your own trench. In general, you will have to provide a trench that is 24" in depth in conformance with MEA specifications and the trench shall be inspected and approved by MEA prior to construction. Member is to stop digging the trench path 10 feet from source poles, pedestals, transformers and any other energized equipment. Member-trenching of secondary service to pedestals and for primary cable installations is not allowed. **Member is to complete and agree to the Member-Prepared Service Trench Agreement prior to performing any work on their part.**

For overhead extensions, clearing of the right-of-way includes overhanging limbs and branches and leaning and/or dead trees outside the easement that are a danger to the line. Logs are stacked along the edge of the right-of-way. Brush and debris are generally chipped.

For underground extensions, clearing of the right-of-way also includes removal of stumps. Debris may not be buried along the trench route. MEA employs trained professionals to clear and maintain the rights-of-way. Members who wish to provide clearing on their property, either themselves or through a hired clearing contractor, must conform to the same construction guidelines as MEA crews. General clearing requirements are provided below. Members are to discuss and confirm their specific clearing requirements with the Engineering Technician assigned to their job prior to commencing work. The Engineering Technician will stake the centerline and clearing limits and meet with the member onsite to discuss the clearing requirements and MEA standards applicable to their job.

If member clearing is unsuitable or inadequate, MEA reserves the right to delay construction until the clearing is satisfactory. If MEA is required to complete the clearing, the member will be charged for this additional expense. Members wishing to clear on property owned by others must have the Matanuska-Susitna Borough or Municipality of Anchorage permits and/or permission of the property owner. MEA will not be responsible for any injuries, damages, or other liabilities arising from member-furnished clearing.

Overhead Clearing Requirements

Overhead clearing consists of cutting/removing all vegetation, boulders, and other obstructions from the entire width of the specified easement in preparation for overhead electric lines to be installed.

The full width of the specified easement shall be cleared. Brush shall be cut as close as practicable to ground level with stump and stubble height not to exceed four (4) inches above ground level as measured on the uphill side. Stump and stubble height shall not exceed two (2) inches in height in a member's yard. All trees, re-growth, limbs, brush, and logs less than five (5) inches in diameter shall be chipped, mulched, or disposed of. All logs five (5) inches or larger in diameter shall be de-limbed and cut into approximate six (6) foot lengths and stacked at the edge of the easement unless there are other instructions on the job.

Debris shall not be buried at or near the job site. Any resulting debris such as brush, limbs, and trees (other than the above referenced logs) must be hauled to an approved landfill at the member's expense. As an alternative to hauling, the member may mechanically chip or grind the debris into pieces which are typically one (1) inch or less in diameter by twelve (12) inches or shorter in length. The debris may then be spread uniformly over the cleared easement.

Clearing widths are typically specified as R2-20, which is an easement twenty (20) feet wide, or R2-30, which is an easement thirty (30) feet wide. Poles will be located in the center of the easement. MEA reserves the right to specify other easement widths as required.

Overhead pole line clearing requires clearing to vertical standards in which trees and brush with the main trunk outside of the easement, but with limbs extending into the easement, shall be cut/trimmed at the edge of the easement. No limbs shall extend into the easement when the clearing is complete. If 50% or more of any tree trunk extends into the easement, the tree shall be removed unless there are other instructions on the job.

Underground Clearing Requirements

Underground clearing and grubbing consist of cutting/removing all trees, brush, stumps, boulders, and other obstructions along the full width of the specified easement in preparation for underground electric lines to be installed.

The full width of the specified easement shall be cleared from ground to eight (8) feet above grade. All trees, re-growth, limbs, brush, and logs less than five (5) inches in diameter shall be chipped, mulched, or disposed of. All logs five (5) inches or larger in diameter shall be de-limbed and cut into approximate six (6) foot lengths and stacked at the edge of the easement unless there are other instructions on the job.

All stumps, roots and other obstructions shall be removed to a minimum depth of twenty-four (24) inches along the full width of the cleared easement via grubbing. The area in which excavation will occur for the installation of underground facilities must be free of debris such as stumps and roots which may cause cable damage. Any resulting debris such as brush, limbs, and trees (other than the above referenced logs) must be hauled to an approved landfill at the member's expense. As an alternative to hauling, the member may mechanically chip or grind the debris into pieces which are typically one (1) inch or less in diameter by twelve (12) inches or shorter in length. The debris may then be spread uniformly over the cleared easement.

If MEA deems the chipped/ground debris to be excessive, the member will be required to pile the chipped/ground debris along the edge of the cleared area, and later, upon installation of MEA facilities, spread uniformly over the cleared area.

Clearing and grubbing jobs are of varying widths. Contact your assigned technician for requirements. MEA reserves the right to specify other easement widths as required.

SECTION 2 – SERVICE INSTALLATION STEPS

2A: Application for Service

To obtain electric service, contact Member Service at the MEA Palmer, Wasilla, and Eagle River district offices. If you are not already an MEA member, a membership application will need to be completed prior to applying for electric service. MEA-approved service entrance equipment must be provided by the member. If MEA does not have a power source immediately adjacent to your property, a line extension may be required. Application for service should be made as early as possible to allow adequate time for engineering, right-of-way acquisition, ordering of required special material, and construction.

Application Checklist

- Initiate service request by contacting or visiting a District Office.
- Provide the legal description of the property on the easement form. Member Service can assist in looking up your description. If the property is jointly owned, all owners must sign the easement on the L.S. (legal signature) lines. The easement must be notarized. Notaries are available at MEA district offices.
- Return the completed application and necessary forms to Member Service and pay any applicable fees. Visit www.mea.coop for a list of required forms.

Available Secondary Voltages

The following single-phase secondary voltages are generally available for residential members, depending on the service location and requirements.

120/240 volts, single-phase, 3-wire

In addition to the above, the following three-phase secondary voltages are generally available for commercial members, depending on the service location and requirements.

240/480 volts, single-phase, 3-wire

120/208 volts, three-phase, 4-wire

120, 240 or 480 volts, three-phase, 4-wire

277/480 volts, three-phase, 4-wire

Available Primary Voltages

Large commercial and industrial members may require service at the primary voltage level. Primary service is recommended for members who require voltages in excess of the available secondary voltages above. Service at primary voltage is generally available for both single-phase and three-phase loads. However, the available voltage and number of phases is dependent on what MEA facilities are available in the area.

Primary metering equipment will be installed at the point where MEA facilities end and member facilities begin. Metering is installed by MEA on an MEA-owned pole or padmount transformer at the member's expense. All metering equipment is sealed and is not accessible to the member. Operations and maintenance of member-owned facilities are the member's responsibility. Members must install, at a point just beyond the metering location, a means of disconnect to allow the member's facilities to be de-energized by member personnel. Primary fuses on the member side must be coordinated with the MEA system to avoid system outages should a fault occur on the member's system.

Such primary services are typically unique. Members requiring service at the voltages listed below should work with their assigned Engineering Technician to discuss the requirements and specifications for proper design and construction of their service.

7,200 or 14,400 volts, single-phase, available based on location

7,200/12,470 or 14,400/24,900 volts, three-phase, available based on location

Net Metering, Co-generation and Independent Power Producers

Members requiring interconnection to the MEA system as a net metering, co-generation, or independent power producer facility will need to contact the Engineering Department to discuss proper construction of their service entrance equipment, a review of their service lines and capacities, and the execution of special agreements for such interconnections. Additional information and application details for net metering can be found at www.mea.coop.

2B: Installation Steps

Depending on the specific circumstances at your location, not all of these steps may be required.

1. Application. Member applies for service at any of MEA Member Service at the Palmer, Wasilla, or Eagle River district offices. Drawings, load requirements, or other information should be provided at this time. Required application documents may include, based on need: Residential Membership Application, Commercial Membership Application, Residential Service Application, Commercial Service Application, Temporary Service Agreement, and/or Winter Construction Agreement.
2. Preliminary Engineering. Engineering Technician prepares a preliminary route and design.
3. Easement and/or Permit Acquisition. The design is reviewed to determine if private easements or permits from government agencies are required. If so, they are obtained by MEA Right-of-Way staff.
4. Final Design and Cost Estimate. Engineering Technician prepares a final design and cost estimate based on the selected route selected.
5. Agreement Execution and Payment. Member signs the Letter of Agreement (LOA) and pays the amount due, if any.

6. Meter Base Inspection. Member installs the meter base, and Engineering Technician inspects it for compliance.
7. Field Staking. Engineering Technician stakes the line extension in the field.
8. Right-of-Way Clearing. Clearing of the right-of-way is performed.
9. Construction. The line extension is constructed and the service is energized.

2C: Owner-Designs

In lieu of MEA engineering, members may elect to hire a third-party engineer to perform the design work for their primary line extension or subdivision design. Secondary line extensions and services of any voltage or amperage shall always be designed by MEA Engineering Staff. The hiring of a third-party engineer does not completely remove MEA's costs or the need for MEA to be involved. MEA will need to be reimbursed for costs associated with the new installation, which typically include review and approval of all designs prior to construction, incorporating as-build information into MEA's GIS system, performing inspections throughout the construction process and performing the final connection. Contact the Engineering Technician assigned to your job for additional information.

2D: Owner-Builds

Members may elect to hire a contractor directly to construct a primary line extension. The contractor must be on MEA's qualified bidders list. This type of construction is termed "owner-build". Contact the Engineering Technician assigned to your job for additional information.

SECTION 3 – SERVICE ENTRANCE EQUIPMENT

3A: General

Individual services of 200 amps and under are metered with self-contained meters. Individual services greater than 200 amps are metered with current transformer meters.

MEA is responsible for:

- Installing the service line from pole, transformer, or pedestal to a member-installed meter base.
- Installing the meter.
- Energizing the service.

Member is responsible for:

- Applying for service.
- Selecting overhead or underground service if both are available.
- Installing an approved meter base in an approved location.
- Maintaining the service entrance equipment.
- Keeping the meter base accessible to MEA.

The owner must furnish and install the service entrance equipment in accordance with the installation drawings included in this guide. MEA has developed the document “MEA-Compliant Single-phase Meter Bases” for members to select a qualified meter base. The latest version of this document is available for download from www.mea.coop. The 125-200A single-phase meter bases on this list have been approved for installation into MEA’s system. *If you have a question on whether an unlisted meter base will pass MEA inspection, please contact the Engineering Technician assigned to your work order for pre-approval. In order to prevent a failed inspection on a non-compliant meter base, please make this contact prior to the purchase and installation of your meter base.* To pass inspection, all other MEA Service Guide and policy requirements must be fulfilled, including the proper application and installation of the meter base and any other service entrance equipment as required.

All service equipment and wiring must conform to the latest edition of the National Electric Code, to state or local codes, and MEA requirements as stated in this publication. All service entrance equipment and components must be UL listed, weatherproof, and manufactured for the type of service (overhead or underground) used. The compartment used for MEA conductors must allow sealing to prevent member access. LB conduit fittings are not allowed.

Meter bases must be combination type with meter socket and main breaker to allow service de-energizing. The service will not be energized unless a main breaker is installed.

Meter base enclosure must be rated for NEMA 3R weatherproofing, at a minimum.

All service entrance equipment must be securely anchored to the structure with exterior rated bolts and/or screws and washers. Do not use nails.

An approved corrosion inhibitor must be used on all aluminum conductor terminations.

Multiple meter sockets must be permanently identified with the location served (apartment number, suite, etc.). Acceptable identification labeling includes adhesive decals, embossed metal or engraved plastic plates attached by screws, rivets, or epoxy adhesive.

3B: Meter Base Location

“Meter bases” are defined as meter bases, CT enclosures, disconnects, interconnects and components as required for the specific service entrance. Meter bases must be mounted on the exterior of the building, or on a remote meter pedestal or meter pole such that the center of the meter socket is between 60 and 72 inches above finished grade. Meter bases shall be located on the lot the meter base will be serving unless approved in writing by MEA.

If mounting the meter base on the building, it must be located at or near the corner of the building closest to the MEA facility that will serve it. If there are conflicts or questions concerning the exact location or the route of the service line, contact the Engineering Department before installing the meter base.

Meter bases must be accessible to MEA personnel and shall not be located under decks, stairs, porches, carports, breeze-ways, or under the outfall of rain spouts or drains. Meter bases and all equipment must have a minimum separation of 36 inches to all doors and windows. Meter bases must be located a minimum of 30 inches from the gas meter. For service to mobile homes, the meter base must be mounted on a remote meter pedestal or meter pole. Meter bases may not be mounted on or in the mobile home.

3C: Grounding and Bonding

Each electric service shall comply with all applicable grounding requirements of the latest revision of the NEC and with any local amendments to the NEC.

The member is responsible for furnishing, installing, and maintaining all components at the point of connection between MEA and the premises wiring necessary to comply with the grounding requirements cited above.

Two (2) ground rods are required, spaced not less than six (6) feet apart. Ground rods must be 5/8" x 8' copper clad steel or galvanized steel driven vertically into undisturbed earth. Clamps must be a manufactured type approved for the purpose. Ground rod connections must remain visible until inspections are complete. The top of the ground rods must be a minimum of six (6) inches below final grade after covering.

Ground wire must be bare copper, unspliced in its entire length, stapled to the structure, running continuously from the neutral bus inside the main breaker panel to the ground rods. The ground wire and connections must be visible for MEA inspection. The grounding system shall tie together the service entrance, ground rods, water system, and building wiring. Ground rod grounding conductor size shall be a minimum of #6 AWG solid copper unless required to be larger by the NEC. Only one (1) conductor may be installed in each conductor lug position.

SECTION 4 – INSTALLATION GUIDES

4A: General

Meter bases, main breakers, and components must be UL listed, weatherproof, and manufactured for the application used. Meter base enclosures must be rated for NEMA 3R weatherproofing, at a minimum. No meter bases or breakers may be installed which allow members access to MEA's service conductors without removing the meter, or other MEA seals. No LB fittings will be approved for either permanent or temporary service on riser conduits.

MEA requires installation of the combination meter base and a single main breaker type service entrance equipment to facilitate de-energizing the wiring from outside in an emergency, such as a fire, or to work on the wiring. No meter will be installed unless a main breaker exists along with the meter socket. Upon Engineering Department approval, services or circuits dedicated to powering a fire pump may be installed without a breaker.

Shunt trip breakers are not allowed. Main disconnect switches associated with service entrance equipment must provide a visual open, lock out capability, and be accessible on the outside of the building.

Meter bases must be mounted on the structure such that the center of the meter socket is between 60 and 72 inches above final grade.

All service entrance equipment must be securely anchored to the structure with exterior rated bolts and/or screws and washers. Do not use nails.

Any deviation from the specifications shown in this section are to be approved by the Engineering Technician assigned to their job prior to installation. If there is any doubt on the validity of the equipment or installation, the member should confer with their Engineering Technician.

4B: Underground Service

The meter base location must be accessible by MEA and is subject to Engineering Department approval. Your meter base must be located:

- Outside.
- On or near the same side of the building as the pole, transformer, or pedestal.
- Not under decks, stairs, or porches.
- Not in carports or breezeways or under the outfall of rain spouts or drains.

Service routing is to be in a reasonably straight line from the pole, transformer, or pedestal to the meter base and must be clear of all brush, stumps, and debris to a width of 20 feet. -Service lines must be a minimum of ten feet from wells and septic systems. The ground must be brought to near final grade prior to trenching.

The slope of the route shall be no more than 3:1 for inline installations and no more than 4:1 where the trench traverses the slope. Where there are questions, or these requirements cannot

be met, MEA must either review and approve the route in advance as an exception or an alternative route and location of the meter base must be used and constructed. For all approved exceptions, the member is responsible for trenching and conduit sleeve installation and accepts responsibility for restoration and maintenance of the trench to control erosion. When a conduit sleeve is used the member shall consult with their MEA engineering technician to determine the conduit size and construction method.

MEA recommends that the meter base be rated for 200 amps for standard residences or commercial buildings. The minimum rating for a permanent underground service is 125 amps. Ground wire size must be a minimum of #6 bare copper.

Based on the application, the riser (sweeps) must be liquidtight flexible metal conduit or rigid steel (RSC) that are securely fastened to the structure. Non-metallic liquidtight conduit is not allowed. For liquidtight installations, the length shall be long enough and laid on the ground so that a section of five (5) feet can be buried. For RSC installations, leave the lower end (90-degree rigid steel sweep) exposed below the ground; MEA will bury it as a part of the service line installation. For both liquidtight and RSC installations, standard locknuts may be used to attach the riser to the meter base if there are no knockout rings remaining. If knockout rings do remain, a grounding bushing must be used and must be connected to the neutral bus with a jumper of the same size as the ground wire. Non-metallic fittings or hubs designed for overhead service are not allowed.

4C: Remote Meter Pedestal

Members may install the meter on a pedestal remote from the building. Remote meter pedestals (RMPs) must be located in an accessible location approved by the Engineering Department. Neither the RMP nor member-owned cable may be located within the utility easement. Installation and maintenance of supply conductors in accordance with the NEC from the RMP to the load is the member's responsibility. RMPs are not allowed for overhead service.

4D: Temporary to Permanent Meter Pedestal

Members may install the meter base on a pedestal within one foot of the permanent building where the meter will be permanently installed, as shown in the "Temporary Installation" in figure 2A. Once the building is ready, member shall transfer the meter base and meter from the pedestal to the building as shown in "Permanent Installation" in figure 2A. If the permanent installation is not on a wood framed building, MEA shall be contacted to coordinate and approve installation method. Neither the pedestal nor member-owned cable may be located within the utility easement. Installation and maintenance of supply conductors from the pedestal to the load is the member's responsibility. This type of installation cannot be used with an overhead service or when the ground is frozen.

Figure 1: Underground Service on Building
Residential or Commercial

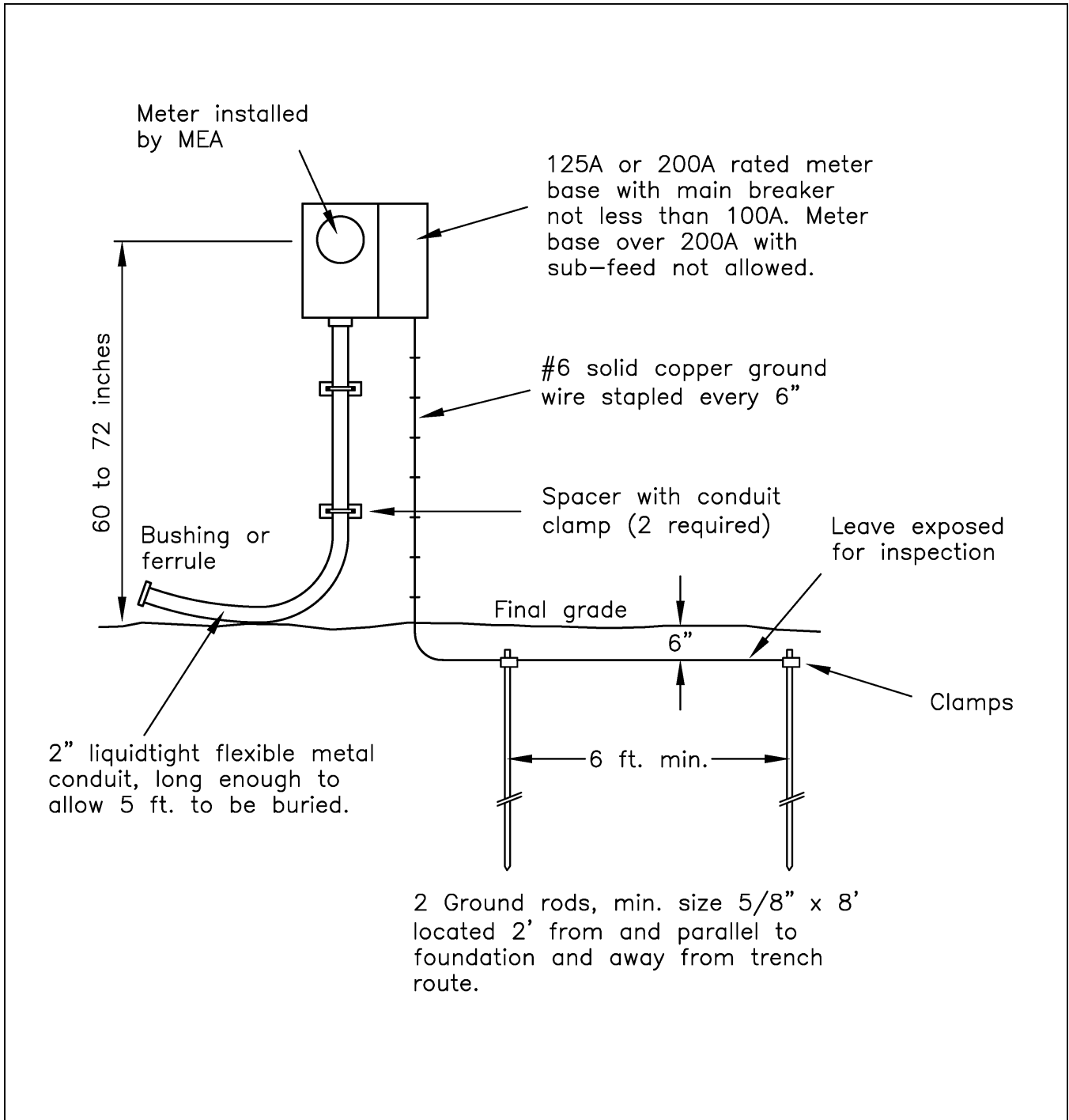


Figure 2: Remote Meter Pedestal – Residential or Commercial

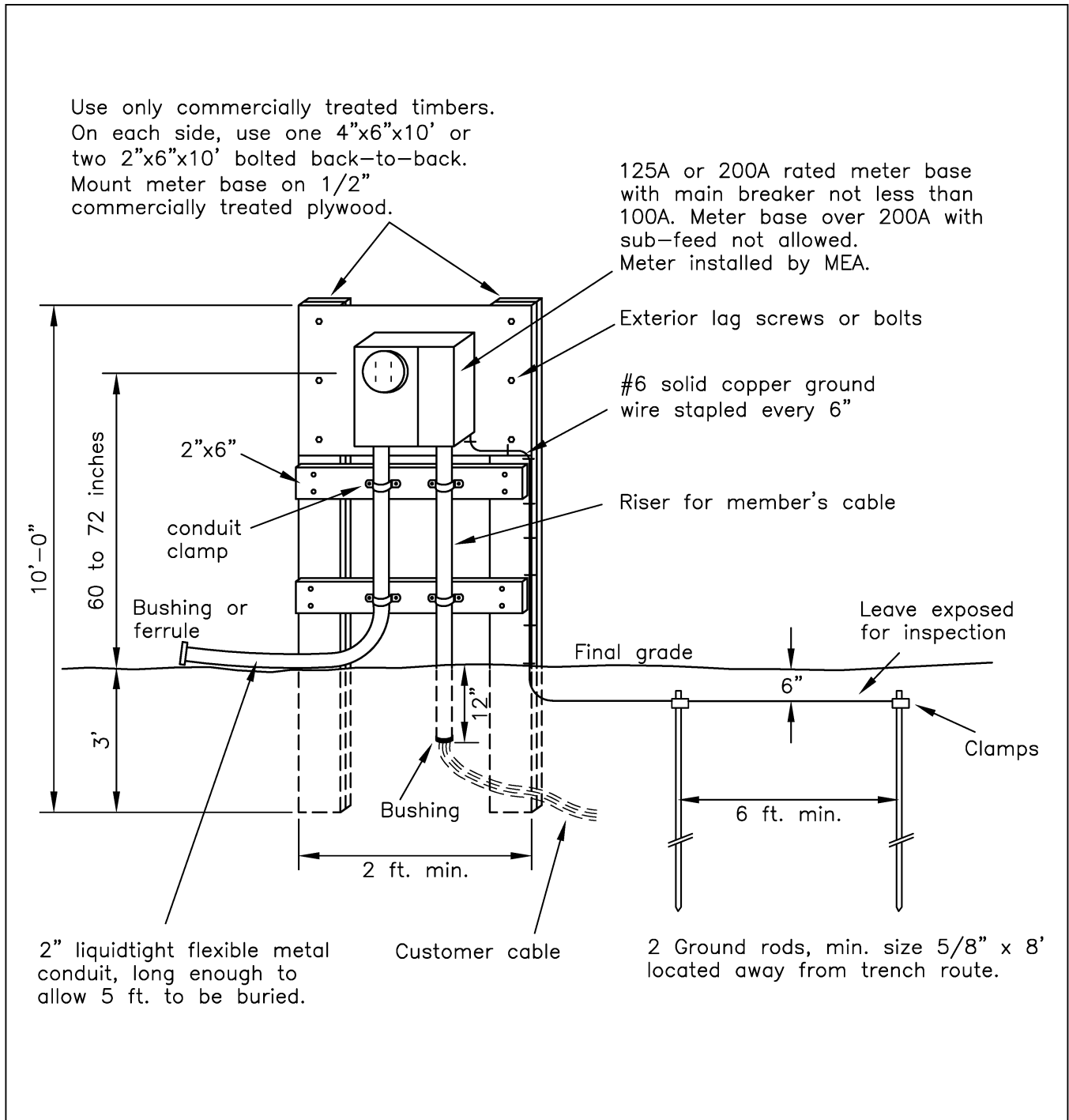


Figure 2A: Temporary to Permanent Meter Pedestal – Residential or Commercial

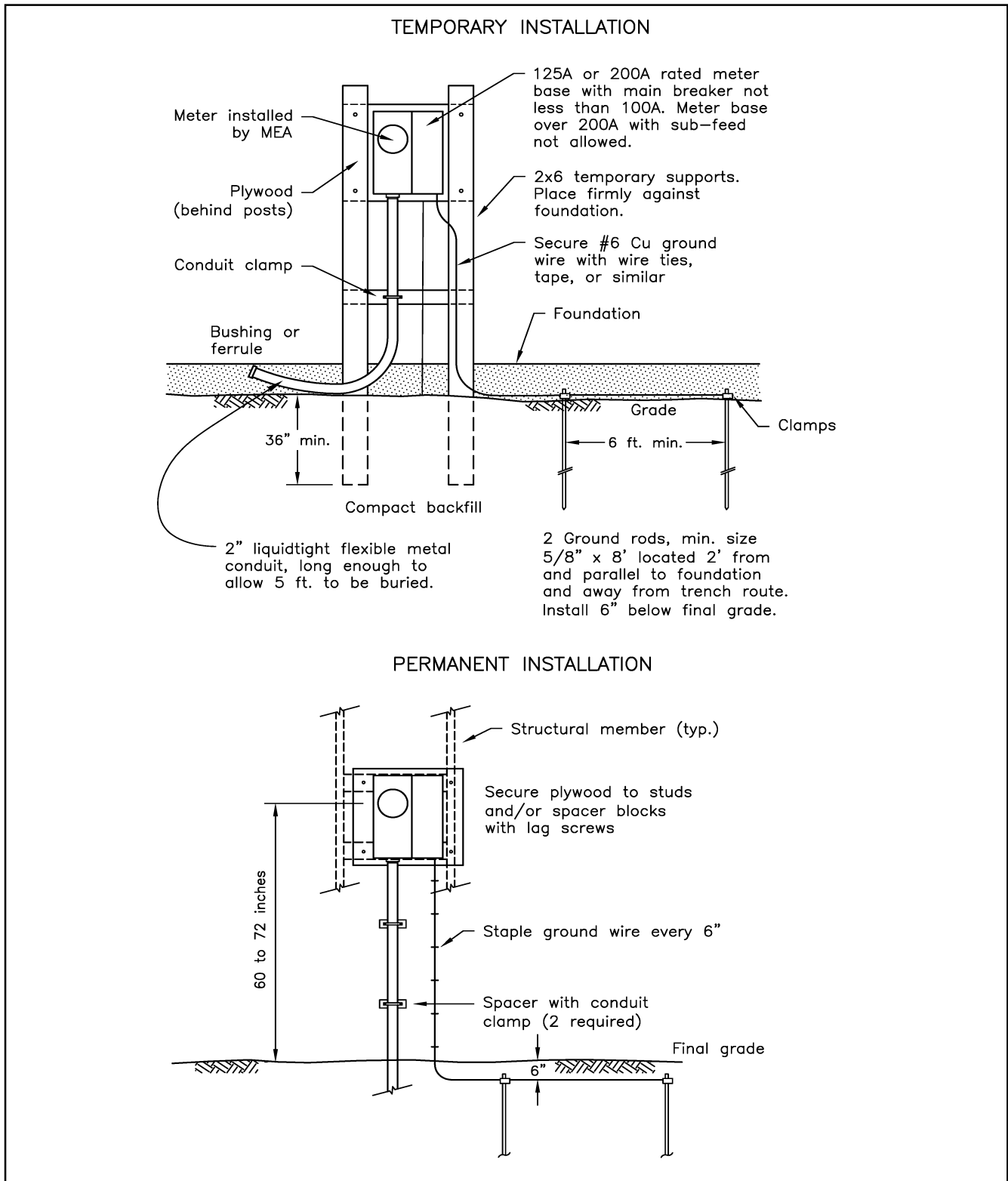


Figure 3: Underground Connection Detail – Residential or Commercial

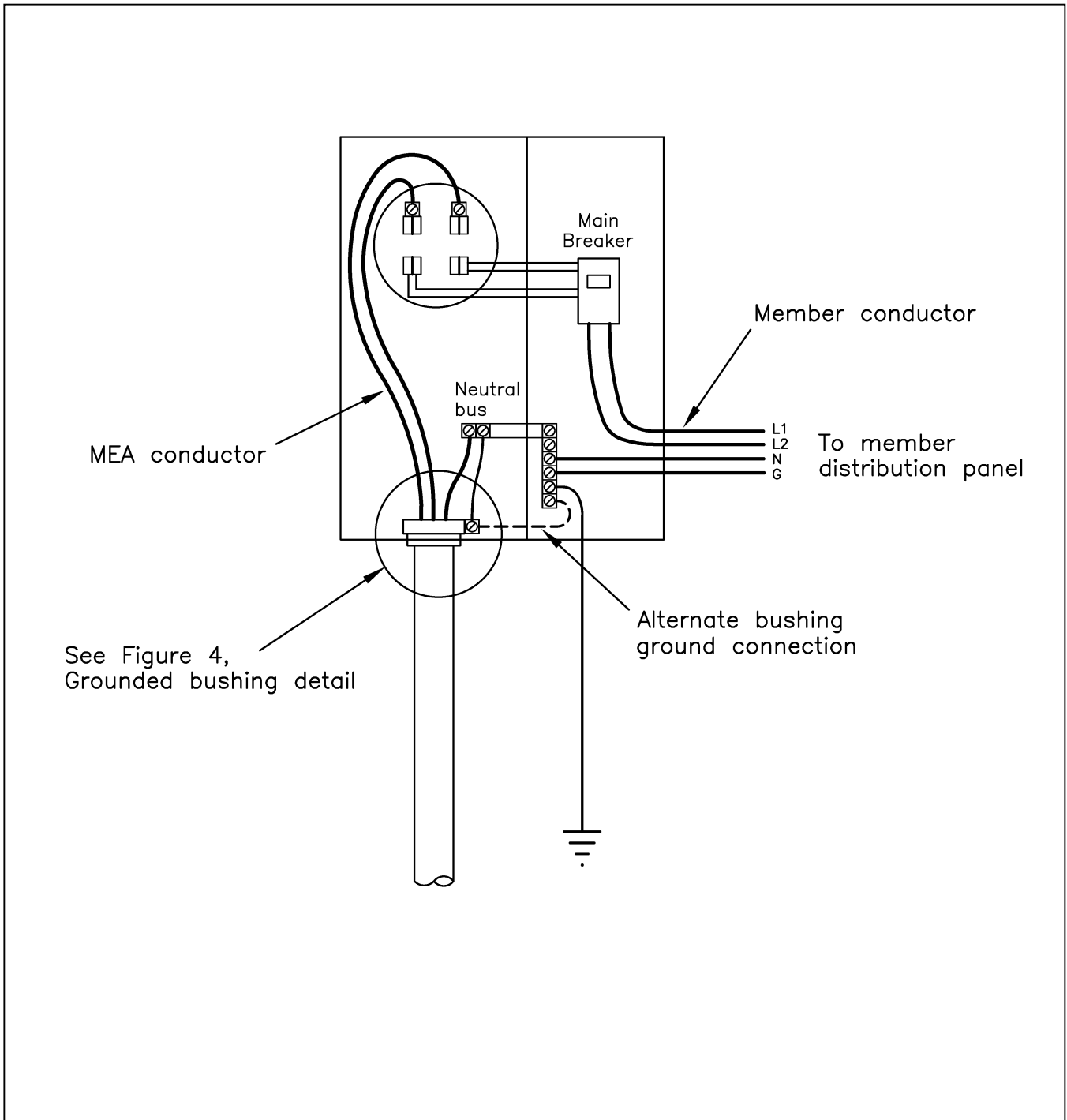


Figure 4: Grounding Bushing Detail – Residential or Commercial

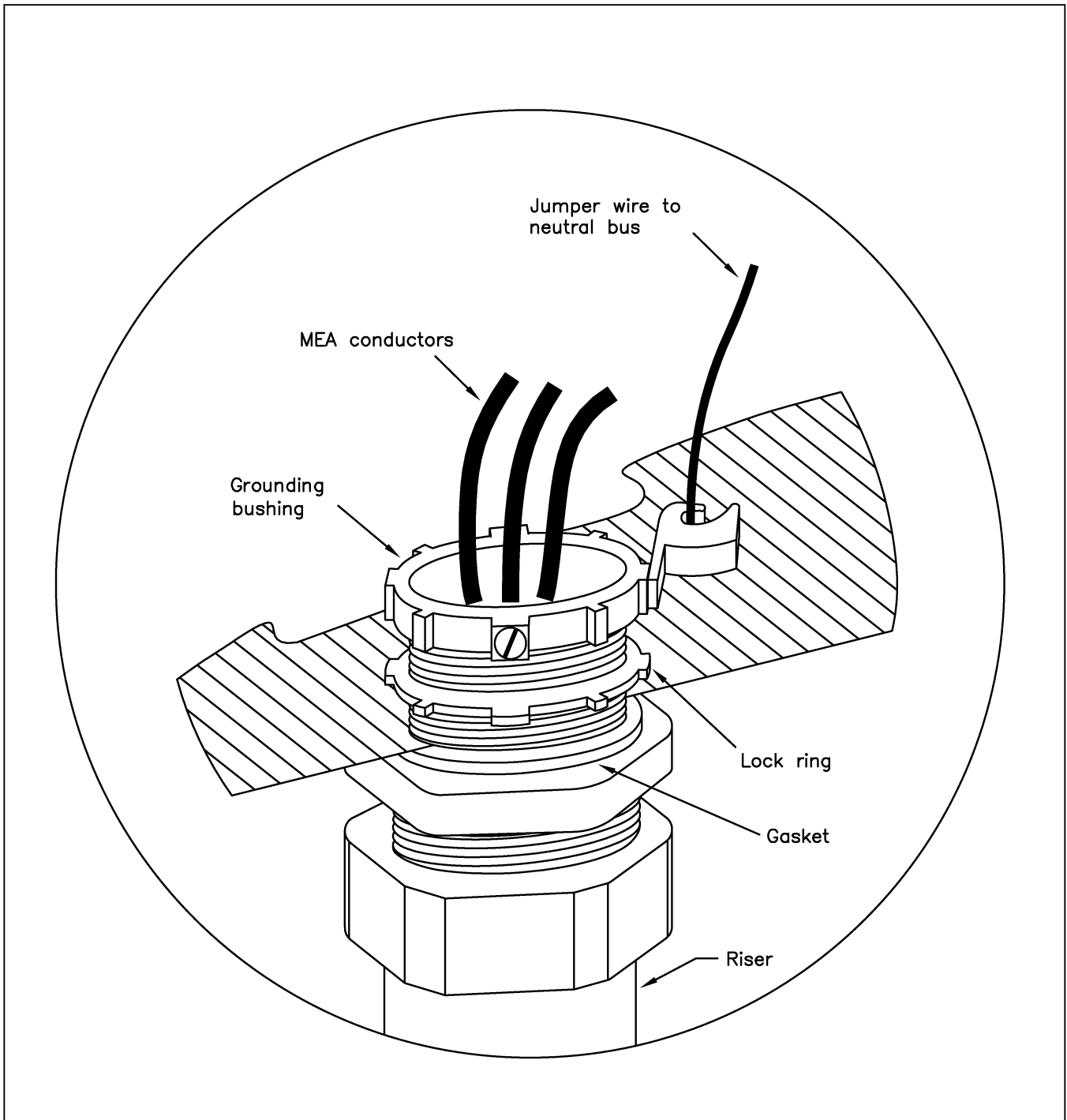


Figure 5: Single-Phase or Three-Phase Underground Service (6 Units or Less) – Commercial Only

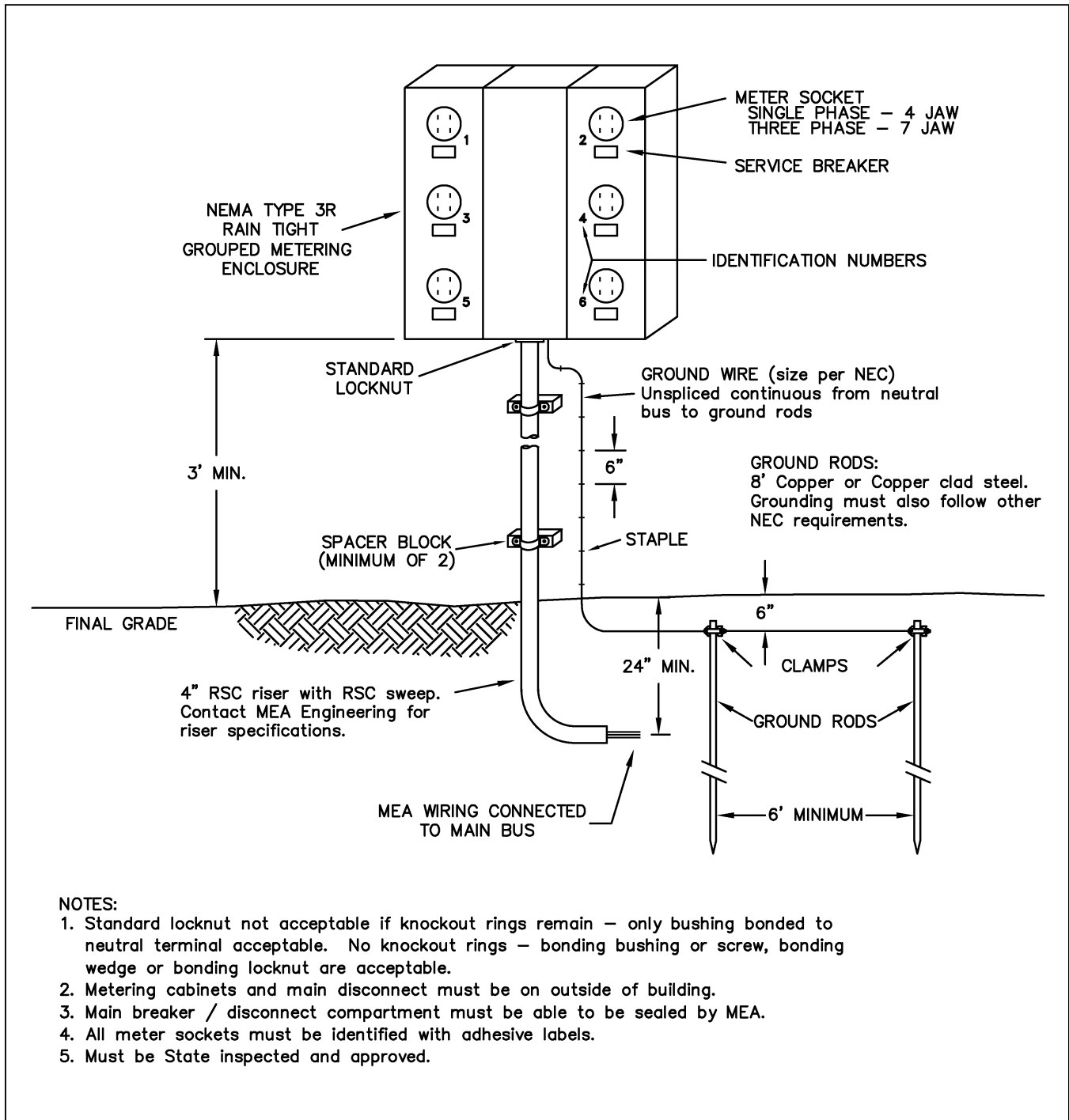


Figure 6: Single-Phase or Three-Phase Underground Service
(More than 6 Units) – Commercial Only

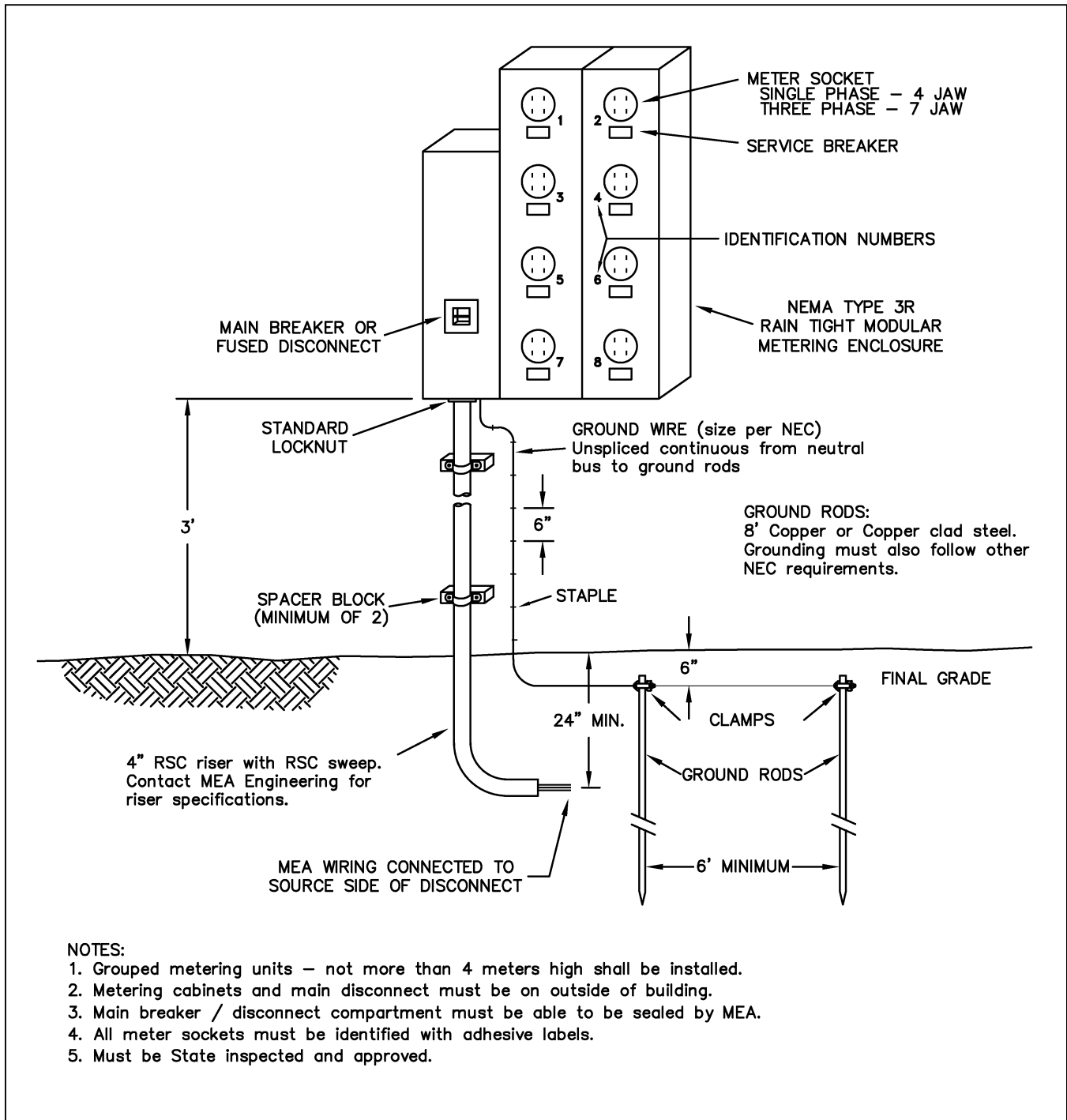
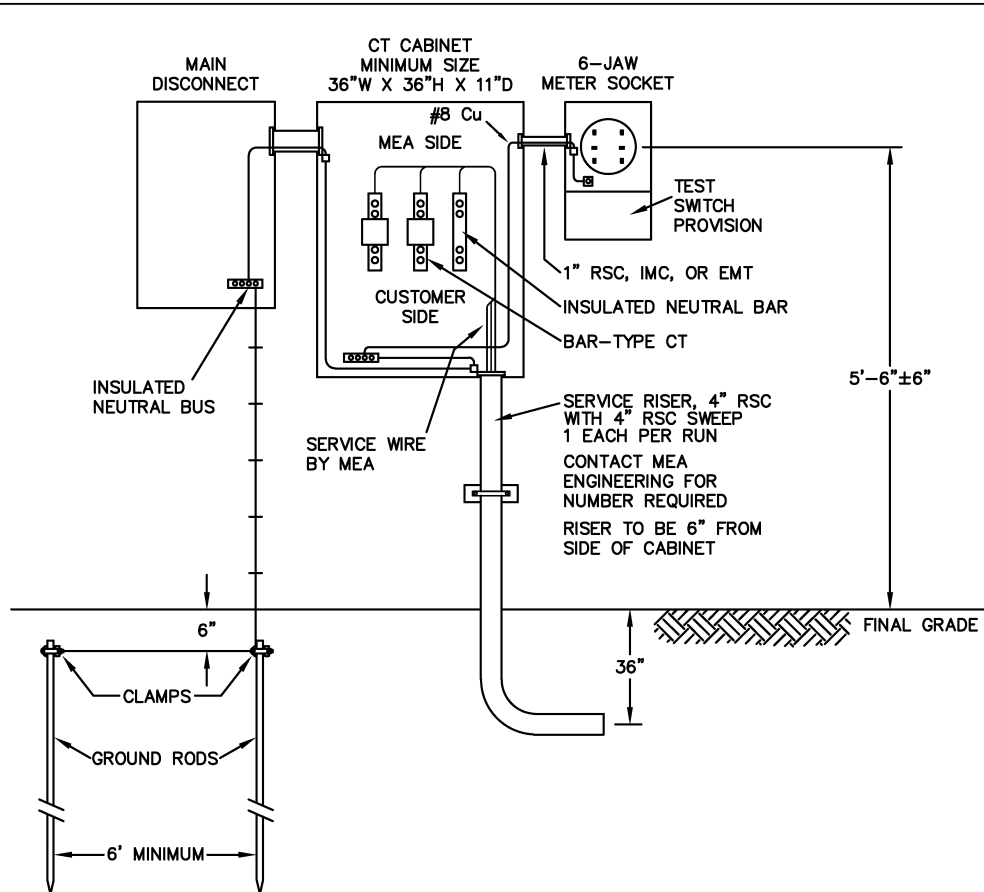


Figure 7: Single-Phase CT Service, 200 Amp and Over, 120/240 Volt or 240/480 Volt – Commercial Only



NOTES:

1. Install grounding electrode system per NEC 250-50. Two ground rods required; install per NEC 250-52.
2. Install grounding electrode conductor per NEC 250-66. Minimum #4 AWG copper.
3. All enclosures and raceways to be bonded per NEC 250-92 and 250-94.
4. Non-local load connection if used, requires a disconnect, the location of which shall be accessible to MEA personnel. The only approved load is a fire pump.
5. Label the outside of closed doors on the appropriate bay as follows:
 "METERING"
 "FIRE PUMP DISCONNECT"
 "MAIN DISCONNECT"
6. Service installation to be inspected by State of Alaska Department of Labor, Mechanical Inspection.

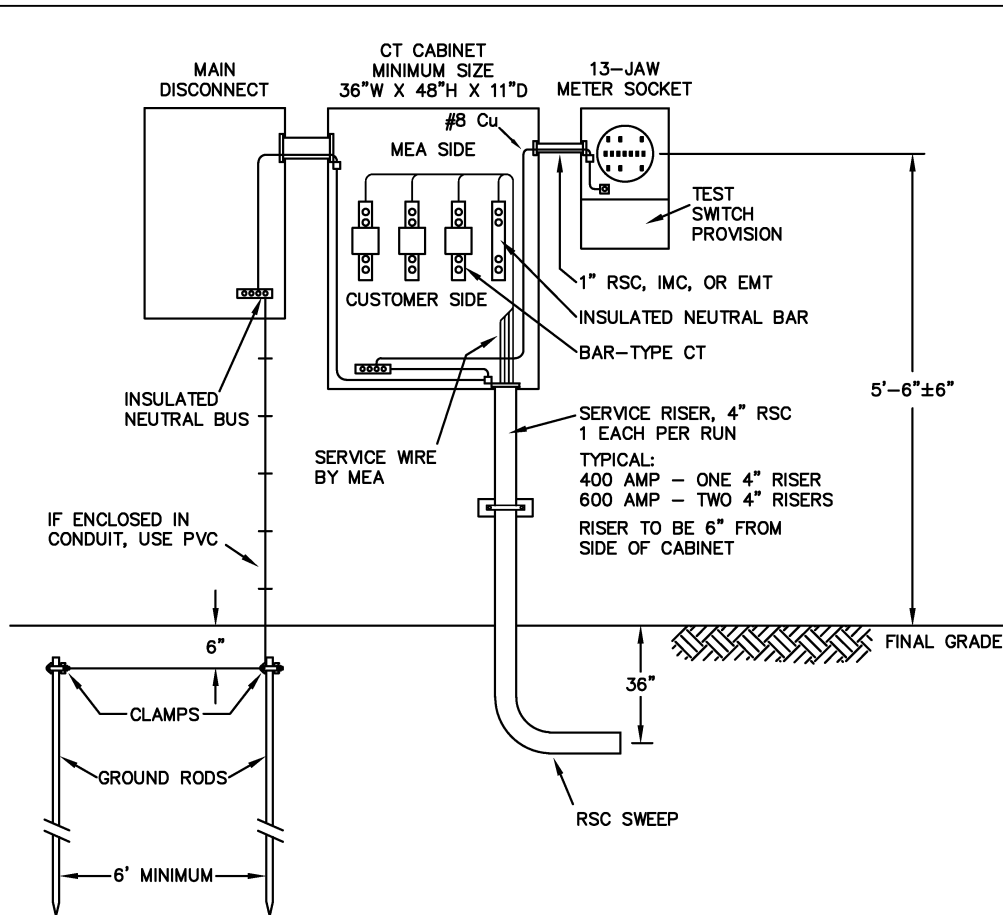
MEA FURNISHES:

- Meter, CT's, and associated wiring
- Lugs on source side of CT's
- Test switch
- Source side service conductor

CUSTOMER PROVIDES:

- CT enclosure, including CT mounting brackets and neutral bar
- Main disconnect
- Meter socket, with provision for manual test switch. No automatic circuit closers.
- Risers: conduit, sweeps and bushings
- Ground rods and ground wire
- Load side conductor and lugs
- Protection equipment
- Panel door labeling

Figure 8: Three-Phase CT Service, 200 Amp to 600 Amp
208Y/120 Volt or 480Y/277 Volt – Commercial Only



NOTES:

1. Install grounding electrode system per NEC 250-50. Two ground rods required; install per NEC 250-52.
2. Install grounding electrode conductor per NEC 250-66. Minimum #4 AWG copper.
3. All enclosures and raceways to be bonded per NEC 250-92 and 250-94.
4. Non-local load connection if used, requires a disconnect, the location of which shall be accessible to MEA personnel. The only approved load is a fire pump.
5. Label the outside of closed doors on the appropriate bay as follows:
 "METERING"
 "FIRE PUMP DISCONNECT"
 "MAIN DISCONNECT"
6. Service installation to be inspected by State of Alaska Department of Labor, Mechanical Inspection.

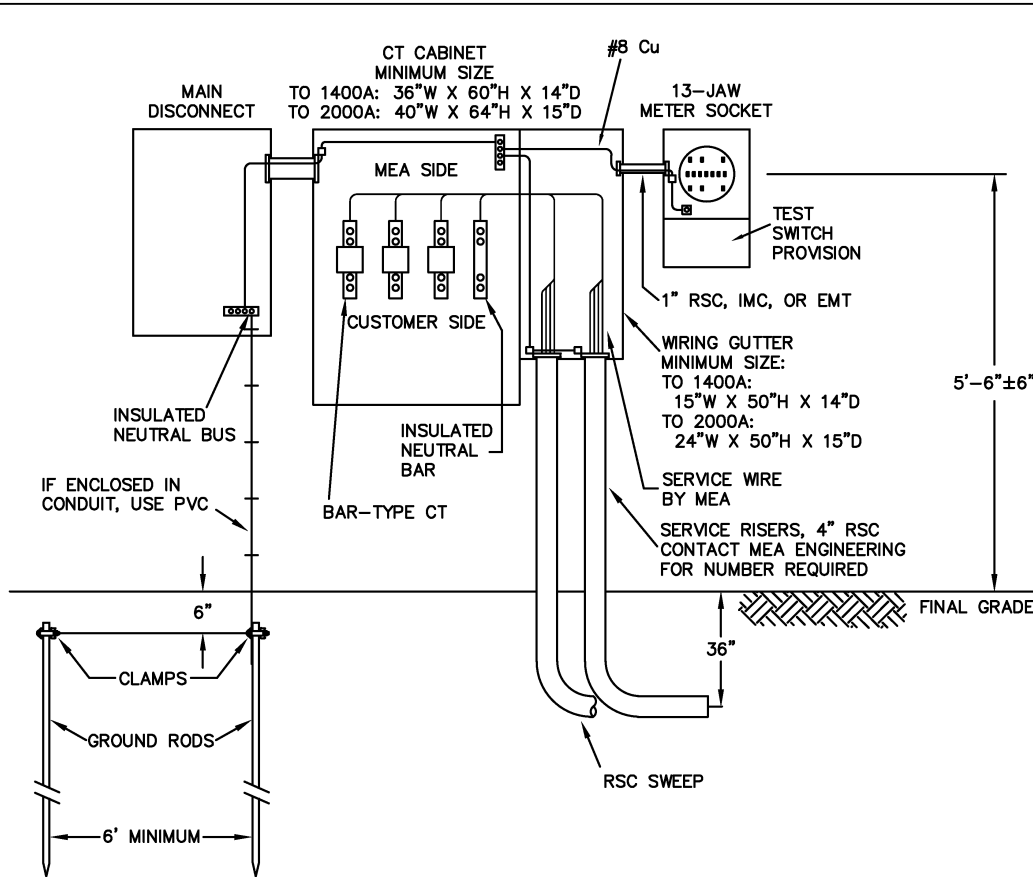
MEA FURNISHES:

- Meter, CT's, and associated wiring
- Lugs on source side of CT's
- Test switch
- Source side service conductor

CUSTOMER PROVIDES:

- CT enclosure, including CT mounting brackets and neutral bar
- Main disconnect
- Meter socket, with provision for manual test switch. No automatic circuit closers.
- Risers: conduit, sweeps and bushings
- Ground rods and ground wire
- Load side conductor and lugs
- Protection equipment
- Panel door labeling

Figure 9: Three-Phase CT Service, 601 Amp to 2000 Amp
208Y/120 Volt or 480Y/277 Volt – Commercial Only



NOTES:

1. Install grounding electrode system per NEC 250-50. Two ground rods required; install per NEC 250-52.
2. Install grounding electrode conductor per NEC 250-66. Minimum #4 AWG copper.
3. All enclosures and raceways to be bonded per NEC 250-92 and 250-94.
4. Non-local load connection if used, requires a disconnect, the location of which shall be accessible to MEA personnel. The only approved load is a fire pump.
5. Label the outside of closed doors on the appropriate bay as follows:
"METERING"
"FIRE PUMP DISCONNECT"
"MAIN DISCONNECT"
6. Service installation to be inspected by State of Alaska Department of Labor, Mechanical Inspection.

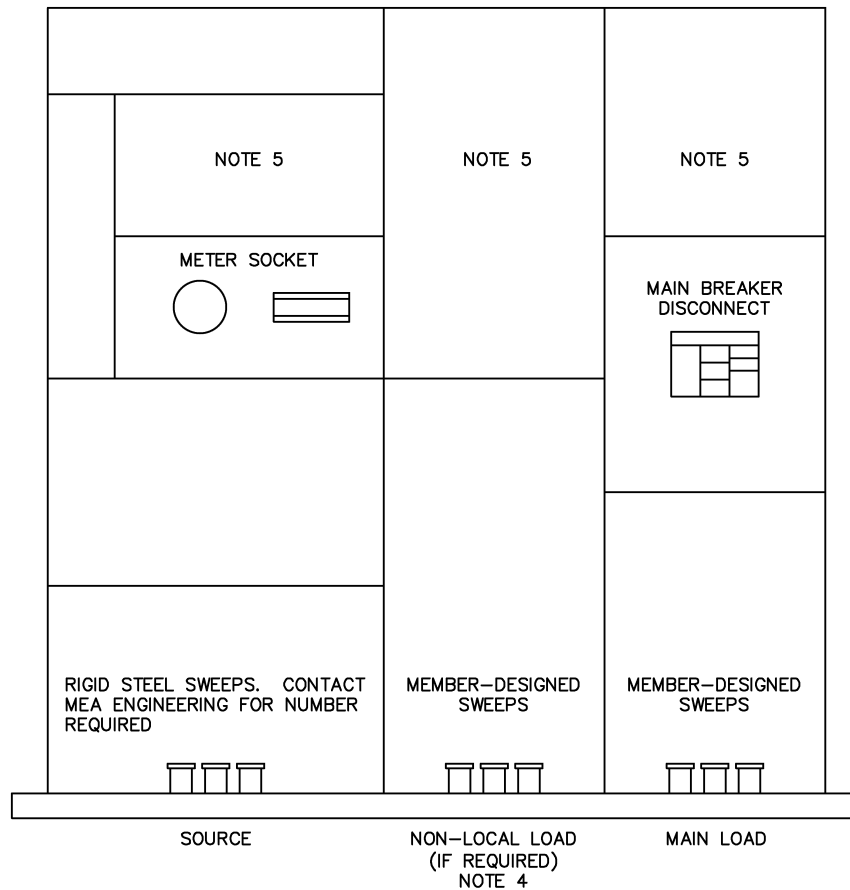
MEA FURNISHES:

- Meter, CT's, and associated wiring
- Lugs on source side of CT's
- Test switch
- Source side service conductor

CUSTOMER PROVIDES:

- CT enclosure, including CT mounting brackets and neutral bar
- Main disconnect
- Meter socket, with provision for manual test switch. No automatic circuit closers.
- Risers: conduit, sweeps and bushings
- Ground rods and ground wire
- Load side conductor and lugs
- Protection equipment
- Panel door labeling

Figure 10: Three-Phase CT Service, Service Enclosure (Example), 800 Amp or Greater
208Y/120 Volt or 480Y/277 Volt – Commercial Only



NOTES:

1. Install grounding electrode system per NEC 250-50. Two ground rods required; install per NEC 250-52.
2. Install grounding electrode conductor per NEC 250-66. Minimum #4 AWG copper.
3. All enclosures and raceways to be bonded per NEC 250-92 and 250-94.
4. Non-local load connection if used, requires a disconnect, the location of which shall be accessible to MEA personnel. The only approved load is a fire pump.
5. Label the outside of closed doors on the appropriate bay as follows:
"METERING"
"FIRE PUMP DISCONNECT"
"MAIN DISCONNECT"
6. Service installation to be inspected by State of Alaska Department of Labor, Mechanical Inspection.

MEA FURNISHES:

- Meter, CT's, and associated wiring
- Lugs on source side of CT's
- Test switch
- Source side service conductor

CUSTOMER PROVIDES:

- Switchboard enclosure and foundation
- Meter socket to have provision for manual test switch. No automatic circuit closers.
- Risers: conduit, sweeps and bushings
- Ground rods and ground wire
- Load side conductor and lugs
- Protection equipment
- Panel door labeling

4C: Overhead Service

Meter bases must be located on the exterior building wall closest to the MEA pole. Additional costs for construction required to route the service to a location other than the most direct route will be paid for by the member. Services may not be routed over roofs. RMPs are not allowed for overhead service.

The riser conduit is to be two (2) inches rigid steel, except for gable-end installations in which MEA will be attaching to the wall, where two (2) inches EMT or IMC are also acceptable. Galvanized water pipe is not acceptable.

MEA recommends that the meter base be rated for 200 amps. The minimum size for a permanent overhead service is 125 amps. 100 amp meter bases are allowed for temporary construction service only. Meter bases rated in excess of 200 amps with provision for a sub-feed circuit are not allowed. Service entrance conductor is supplied by the member and is to be sized according to the following table:

Service Entrance Rating	Wire Size	Ground Wire Size
100 Amp (temps only)	#2 aluminum	#6 bare copper
125 Amp	1/0 aluminum	#6 bare copper
200 Amp	4/0 aluminum	#6 bare copper

The neutral wire must be identified at the weatherhead using one of the following methods:

- White or gray insulation
- Black insulation with white or gray stripes
- Black insulation marked with white tape

If MEA will be attaching to the gable end of the structure, you must install a 5/8" galvanized eyebolt (minimum eye opening of 1½") within two feet of the weatherhead. This will be the point of wire attachment so the eyebolt must be securely fastened to a stud or framing member. Do not attach to the siding only. Eyebolts are available free of charge at the MEA Palmer, Wasilla, and Eagle River district offices.

Figure 11: Overhead Service, Periscope – Residential or Commercial

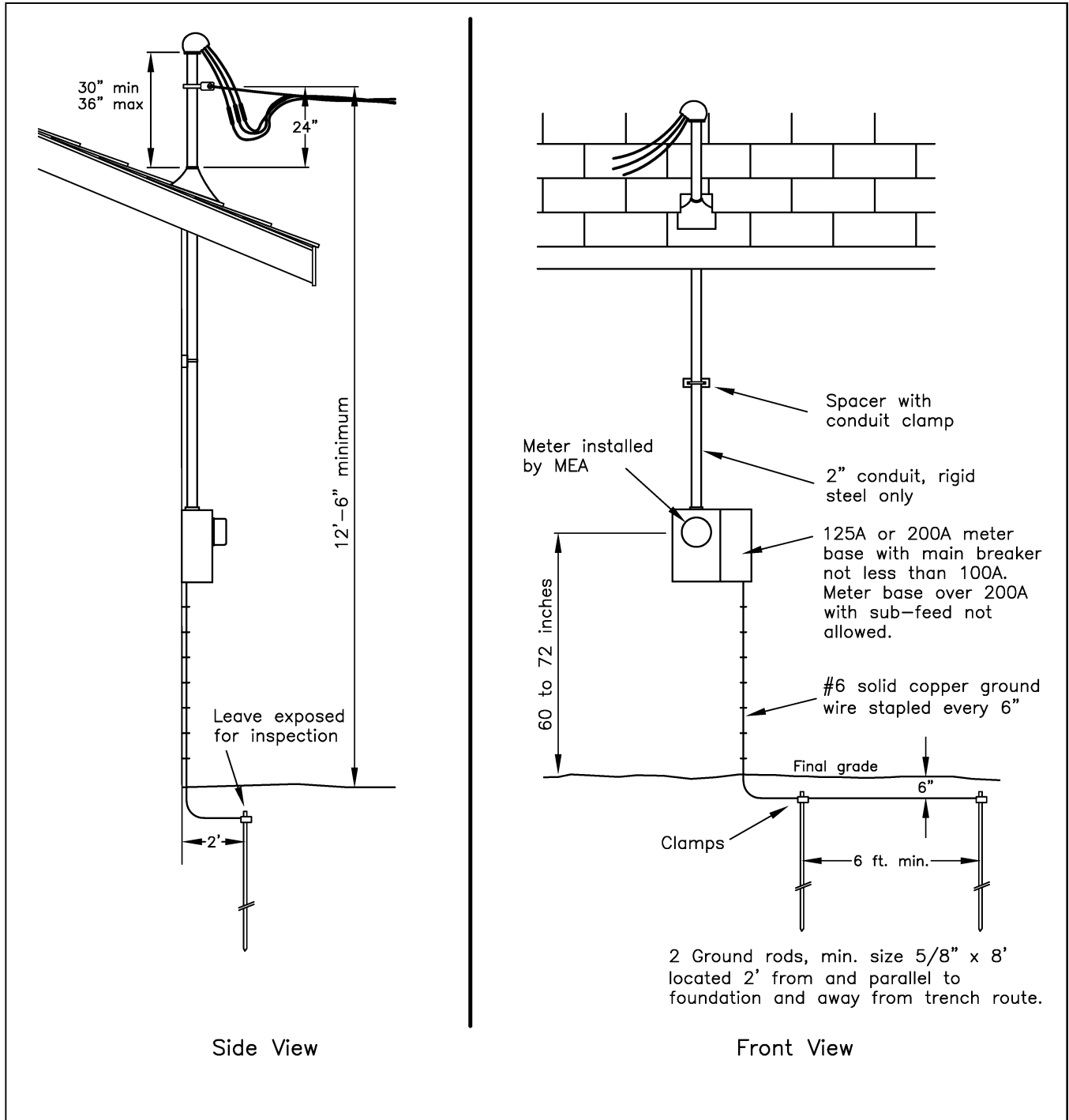


Figure 12: Overhead Service, Gable End – Residential or Commercial

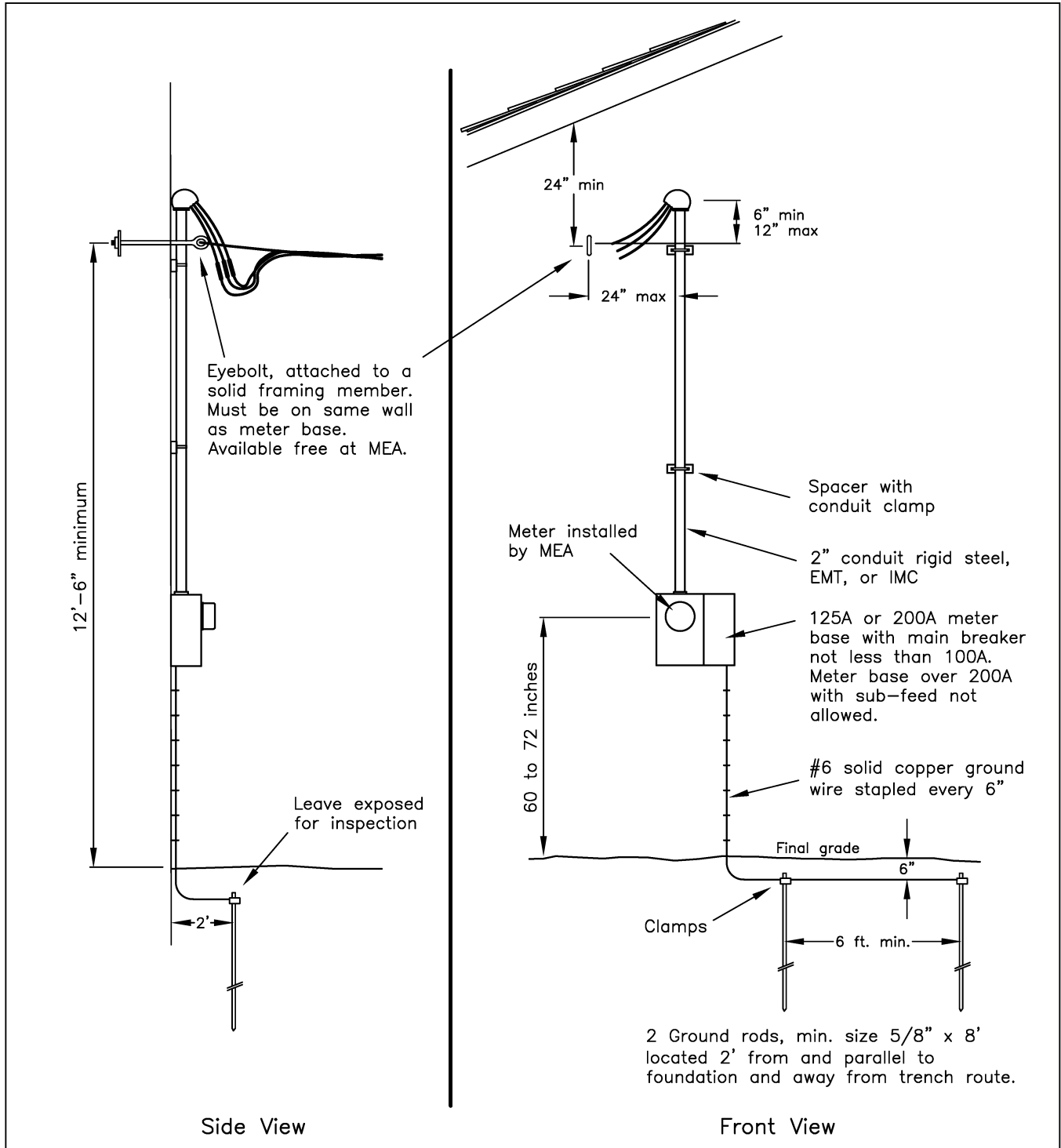


Figure 13: Overhead Connection Detail – Residential or Commercial

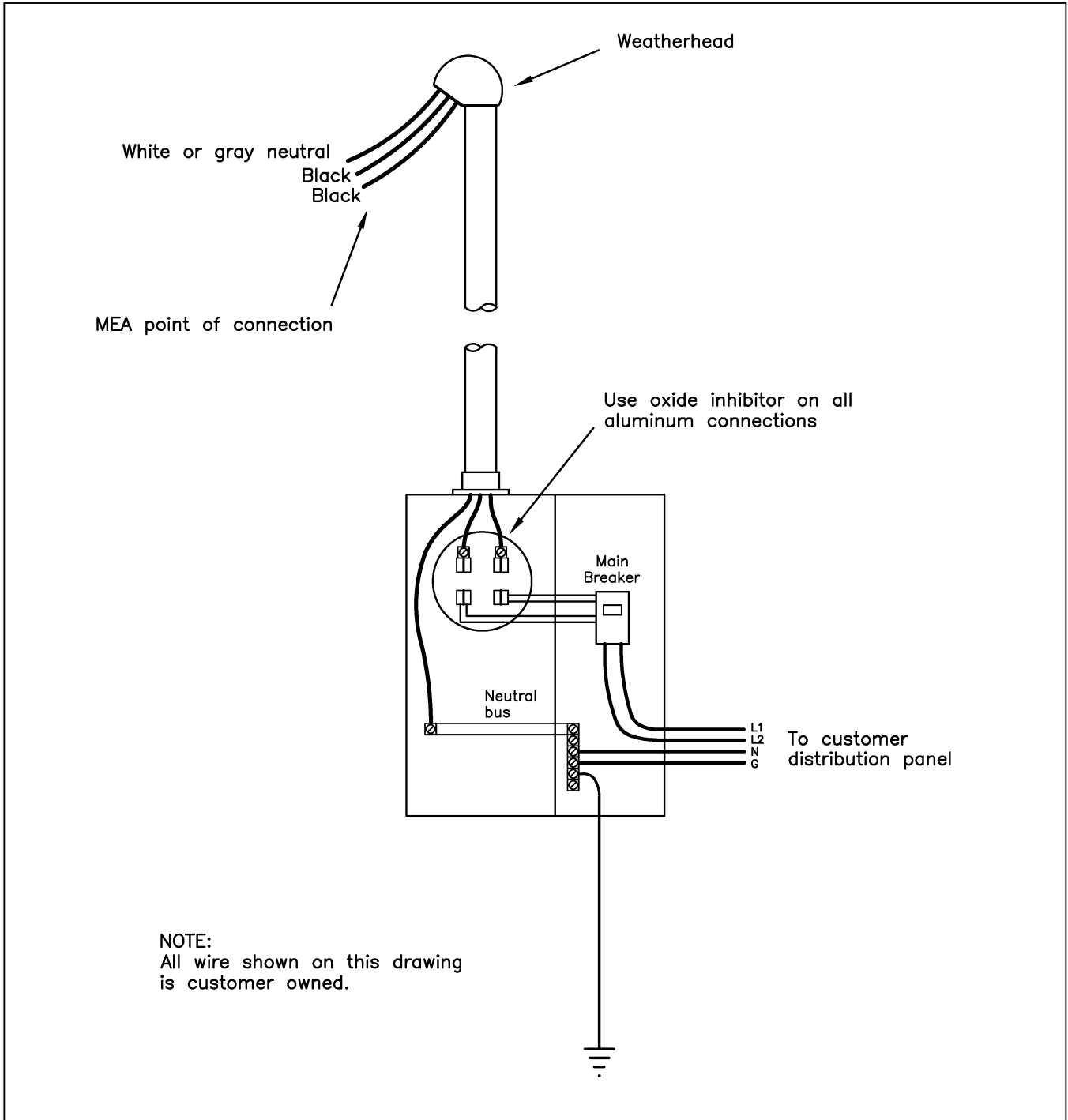


Figure 14: Single-Phase or Three-Phase Overhead Service
(6 Units or Less) – Commercial Only

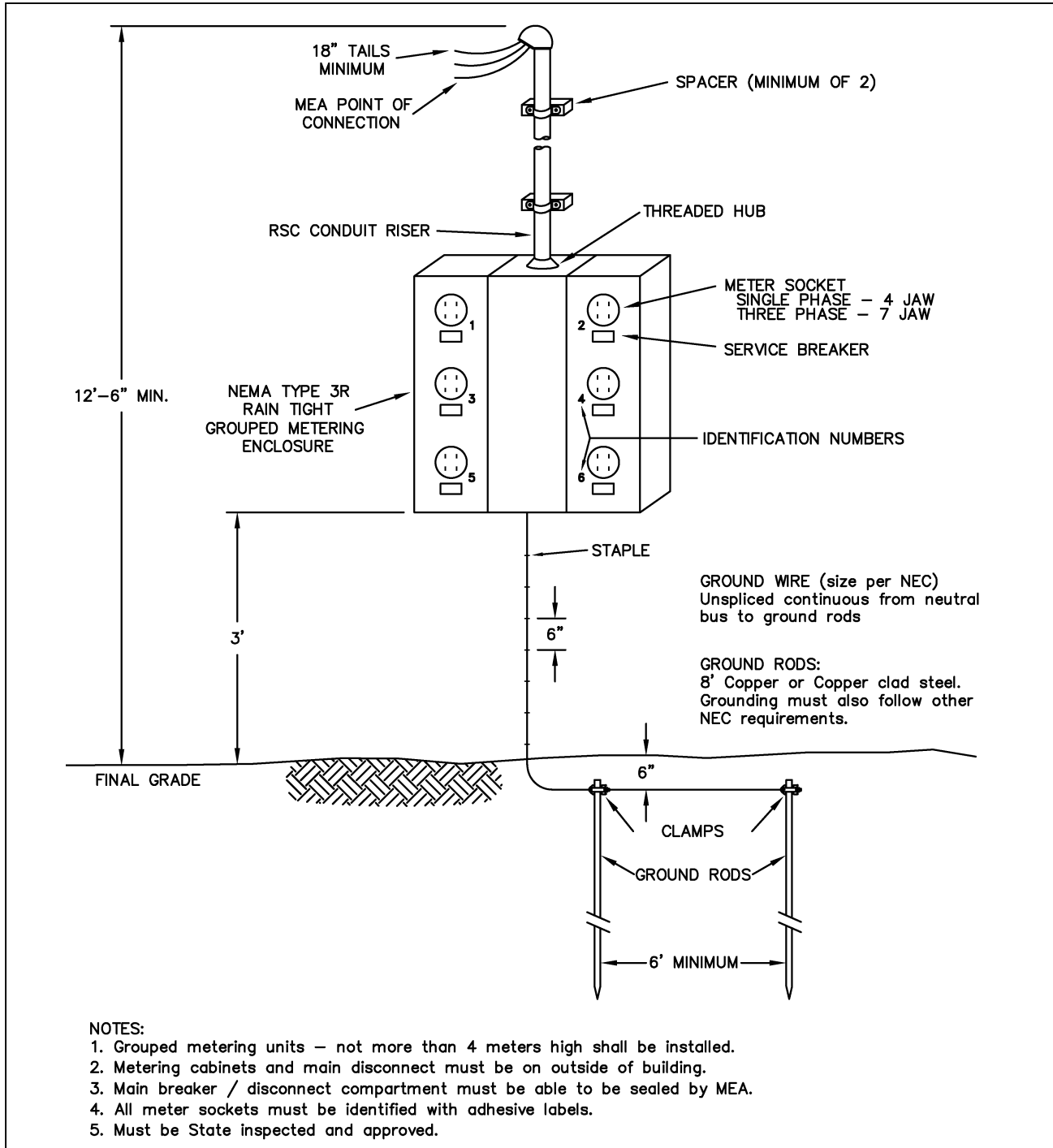
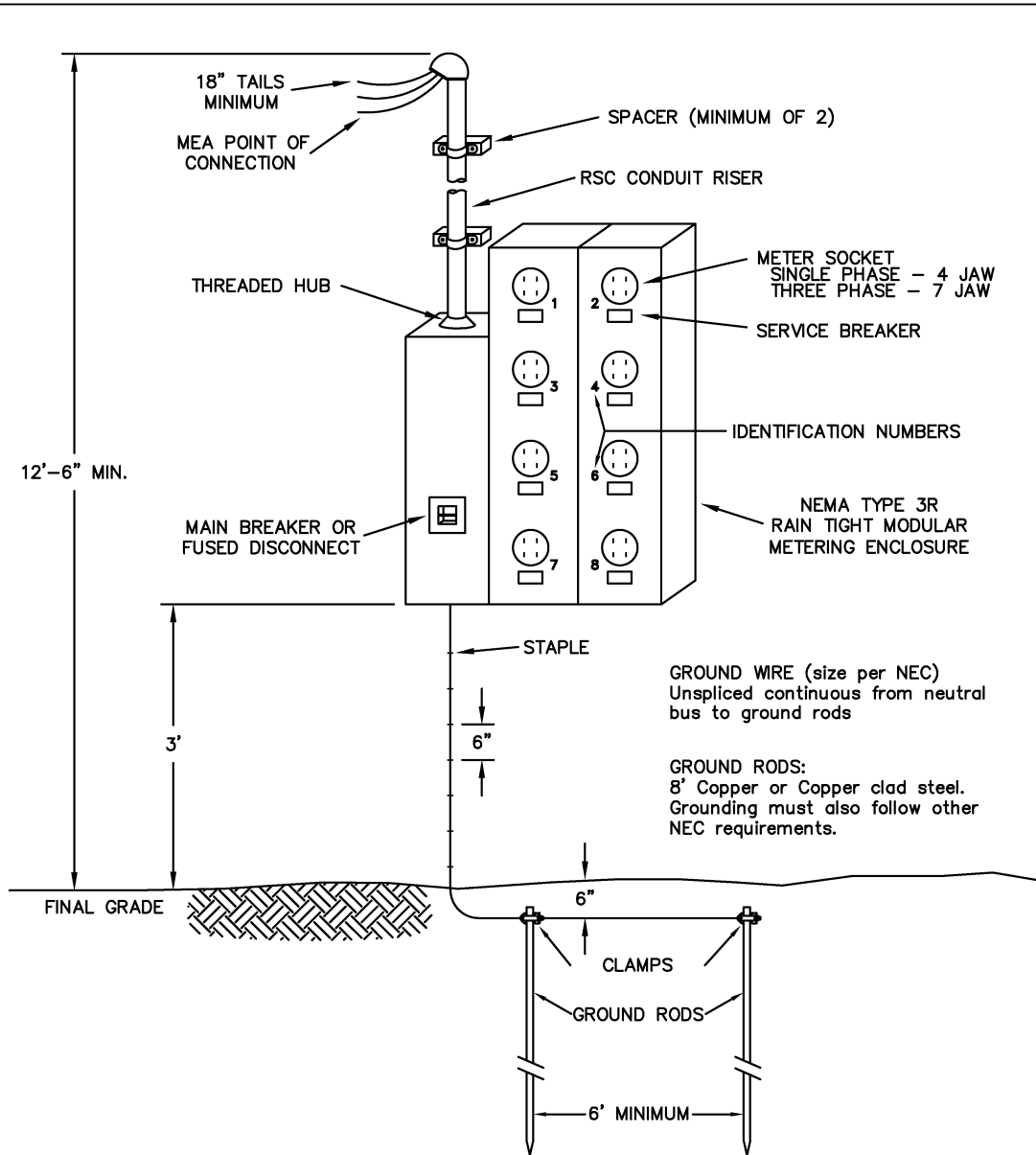


Figure 15: Single-Phase or Three-Phase Overhead Service
(More than 6 Units) – Commercial Only



NOTES:

1. Grouped metering units – not more than 4 meters high shall be installed.
2. Metering cabinets and main disconnect must be on outside of building.
3. Main breaker / disconnect compartment must be able to be sealed by MEA.
4. All meter sockets must be identified with adhesive labels.
5. Must be State inspected and approved.

4D: Overhead Service to Meter Pole

Meter poles are owned by the member and must meet the following requirements:

- Commercially pressure treated pole.
- 25 feet long, minimum.
- Class seven (7) pole minimum (15 inches minimum pole top circumference).
- Pole set at least five (5) feet deep.

A taller pole may be required to cross driveways and roads or to provide additional clearance for trucks or other equipment.

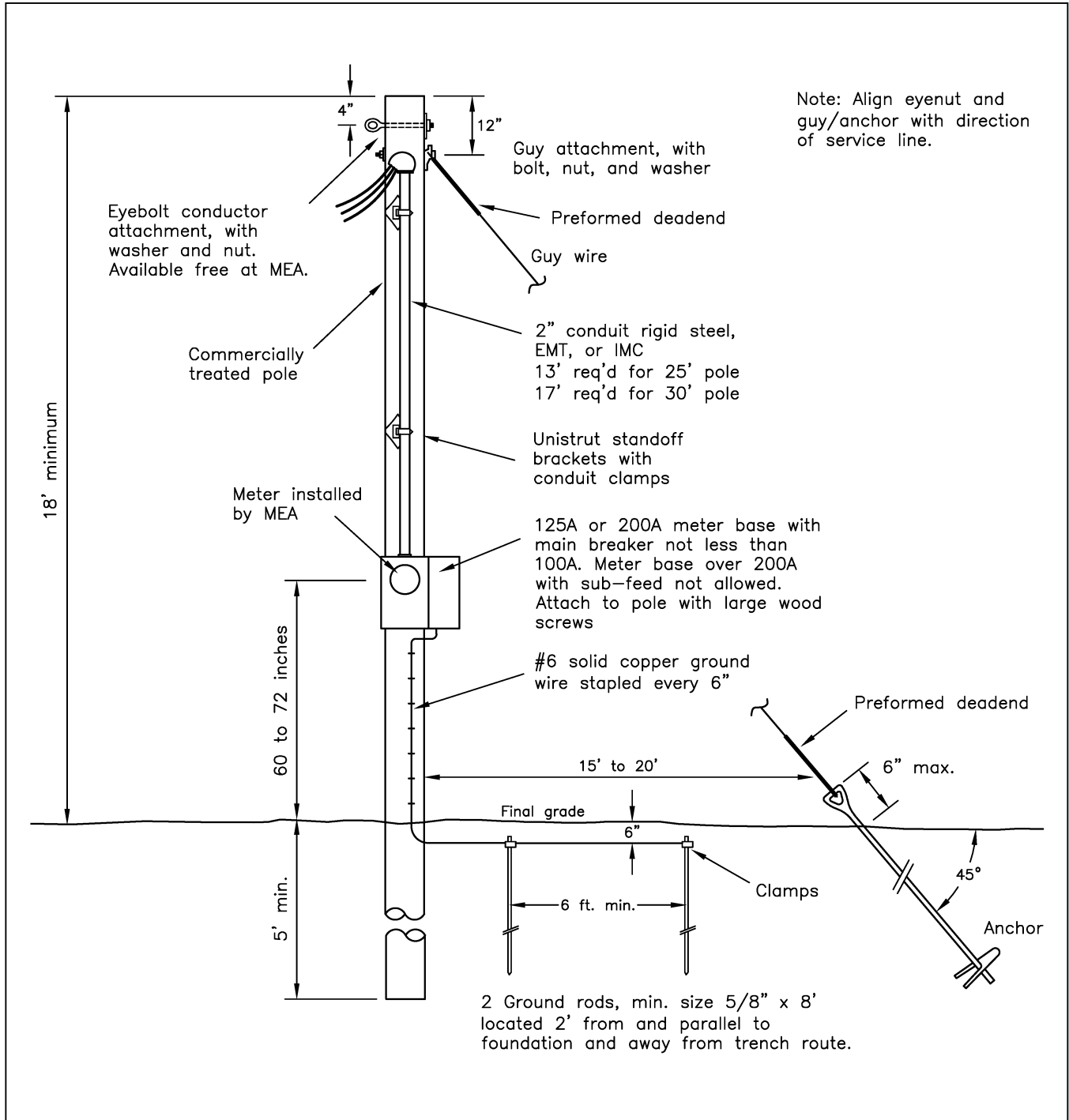
Poles, guy/anchor kits, and unistrut standoff brackets are available for purchase from MEA. If the pole is purchased from MEA, the member must have a vehicle or trailer on which the pole can be legally transported (less than 4 feet of overhang). If no means of transporting it is available to you, MEA can deliver it for a fee.

Meter poles must be set a minimum of 20 feet from primary power lines and must not be in the utility easement.

If the meter pole is located more than 50 feet from MEA's last pole, the meter pole must be guyed. The guy wire must be a minimum of 1/4" stranded galvanized steel wire with approved clamps or deadends.

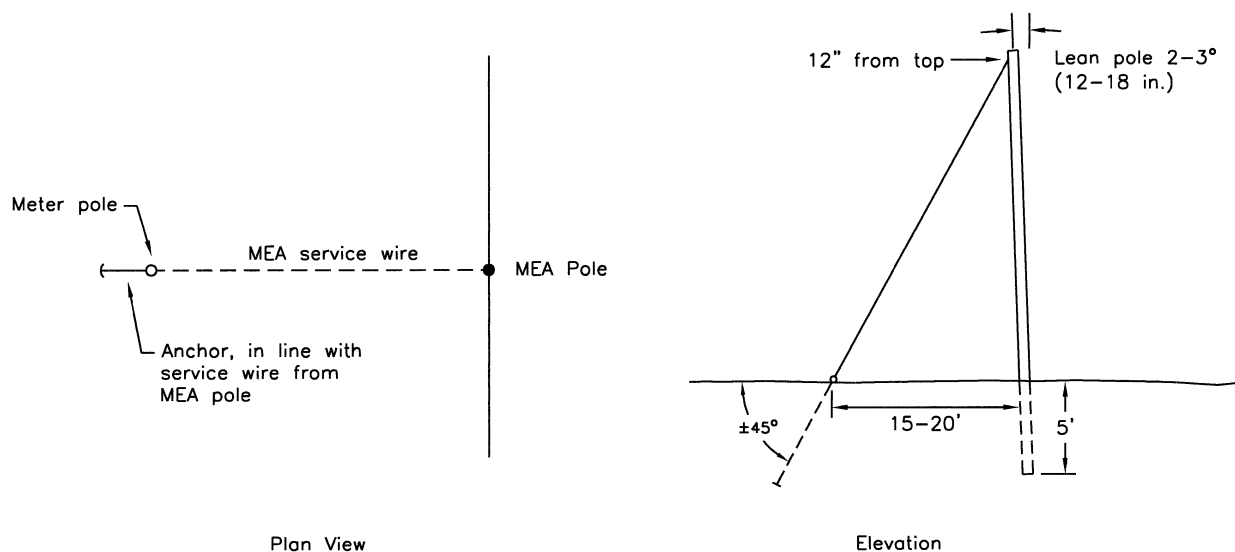
The meter pole must be accessible in a location approved by the Engineering Department.

Figure 16: Meter Pole Service – Residential or Commercial



4E: Meter Pole Installation Instructions

1. Install the guy attachment to the pole using the 5/8" bolt, washer, and nut. Use the hole located 12 inches from the top of the pole. Tighten nut securely.
2. Attach a preformed guy grip to one (1) end of the guy wire. Wrap both ends of the preform completely around the guy wire. Place the preform loop over the ears of the guy attachment so that it is resting on the shoulder of the attachment.
3. Install the screw anchor into the ground at a 45° angle and in line with the direction of the service line. The anchor should be positioned approximately 15-20 feet from the pole. Two methods may be used to install the anchor. The anchor may be screwed into the ground by placing a bar through the anchor eye and twisting the anchor until the eye is about 6 inches above ground level. Or, a hole can be excavated and the anchor end buried. If you choose the second method, be sure the anchor is at a 45° angle, the backfill is well tamped, and the anchor eye is about 6 inches above the ground.
4. Install the meter pole to a depth of five (5) feet. Lean the pole toward the anchor approximately 2-3°, or about 12 to 18 inches out of plumb.
5. Attach the guy wire to the anchor using the second preformed grip. First insert the grip through the anchor eye, then wrap the grip ends around the guy wire while tensioning the guy wire by hand. Cut off the excess guy wire, and install the guy guard/marker. The pole will move to a vertical position and the guy wire will be fully tensioned when MEA installs the service wire.



4F: Temporary Construction Service

Construction sites may be served up to nine (9) months using the appropriate overhead or underground temporary meter base assembly per Section 4.02 of the MEA Tariff. The assembly must be located outside the utility easement. Existing MEA facilities in the area will determine whether an overhead or underground meter base will need to be used. All 15 amp and 20 amp circuits must have GFI protection and all cover plates and panels must be present. The assembly remains the property of the member.

For temporary services that are further than 20 feet away from an existing usable overhead or underground facility, you will need to work the Engineering Technician assigned to your job to determine where to place the temporary meter base. Additional costs may be incurred for temporary services that are greater than 20 feet away from an existing MEA facilities.

Overhead Service

Where MEA's existing facilities are overhead, an overhead temporary meter base must be used. A usable overhead transformer must be available, or one will need to be installed. The meter base must be located within 20 feet of the MEA pole, on your property, and outside of the utility easement. See Figure 17 of this guide for details regarding an overhead temporary meter base.

Underground Service

Where MEA's existing facilities are underground, an underground temporary meter base must be used. The meter base must be located within 20 feet of an existing MEA transformer or service pedestal which are on the same side as your property, installed on your property, and outside of the utility easement. See Figure 18 of this guide for details regarding an underground temporary meter base.

Minimum Temporary Meter Base Requirements

Meter base must be no less than 100 amp rated, ring sealed, a single main breaker and GFI protected outlets. The meter base shall have a name plate showing the rating and the diagrams of the meter base. Any other requirements not mentioned here should follow the NEC minimum requirements for meter bases.

Figure 17: Overhead Temporary Construction Service
Residential or Commercial

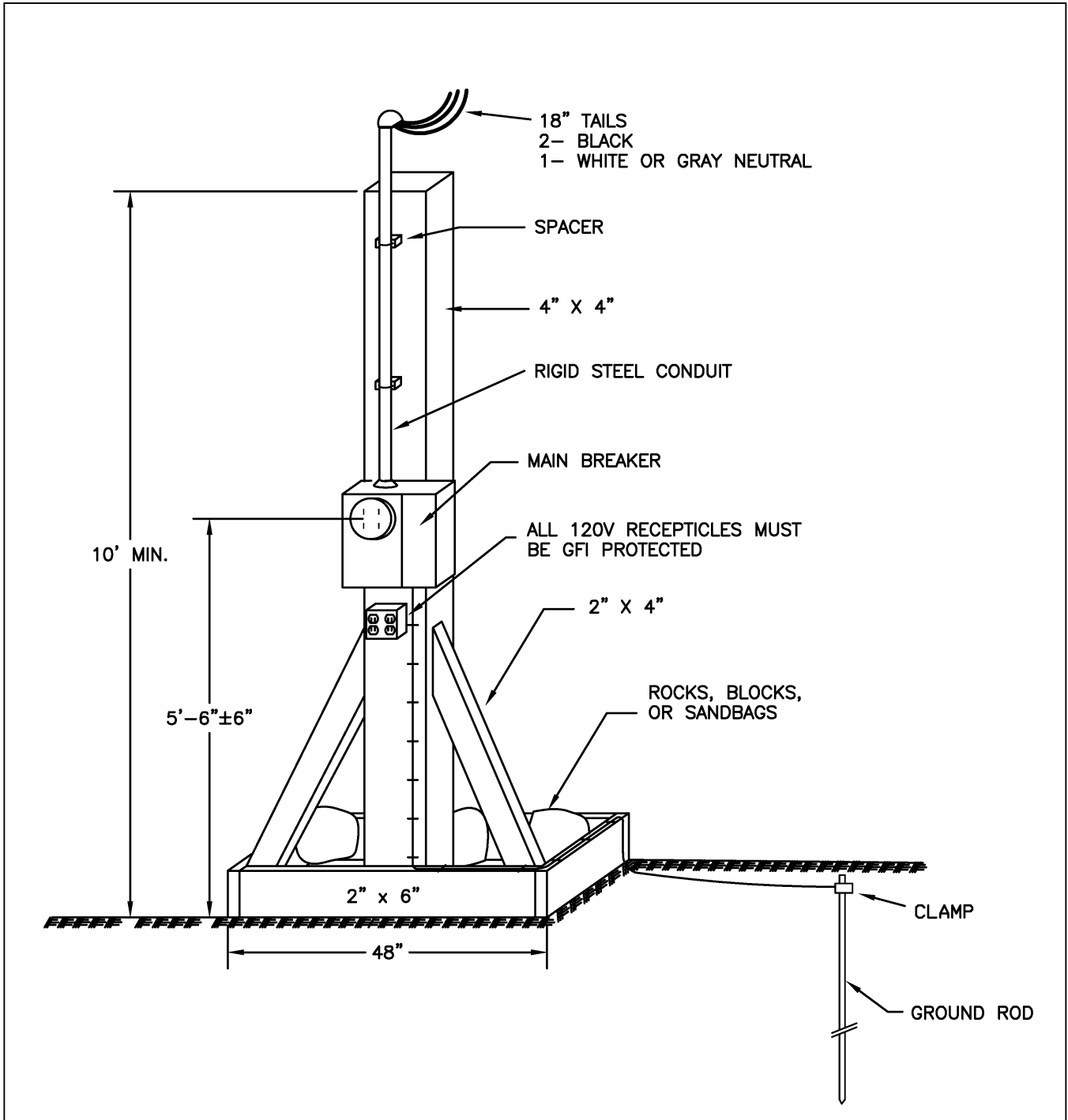
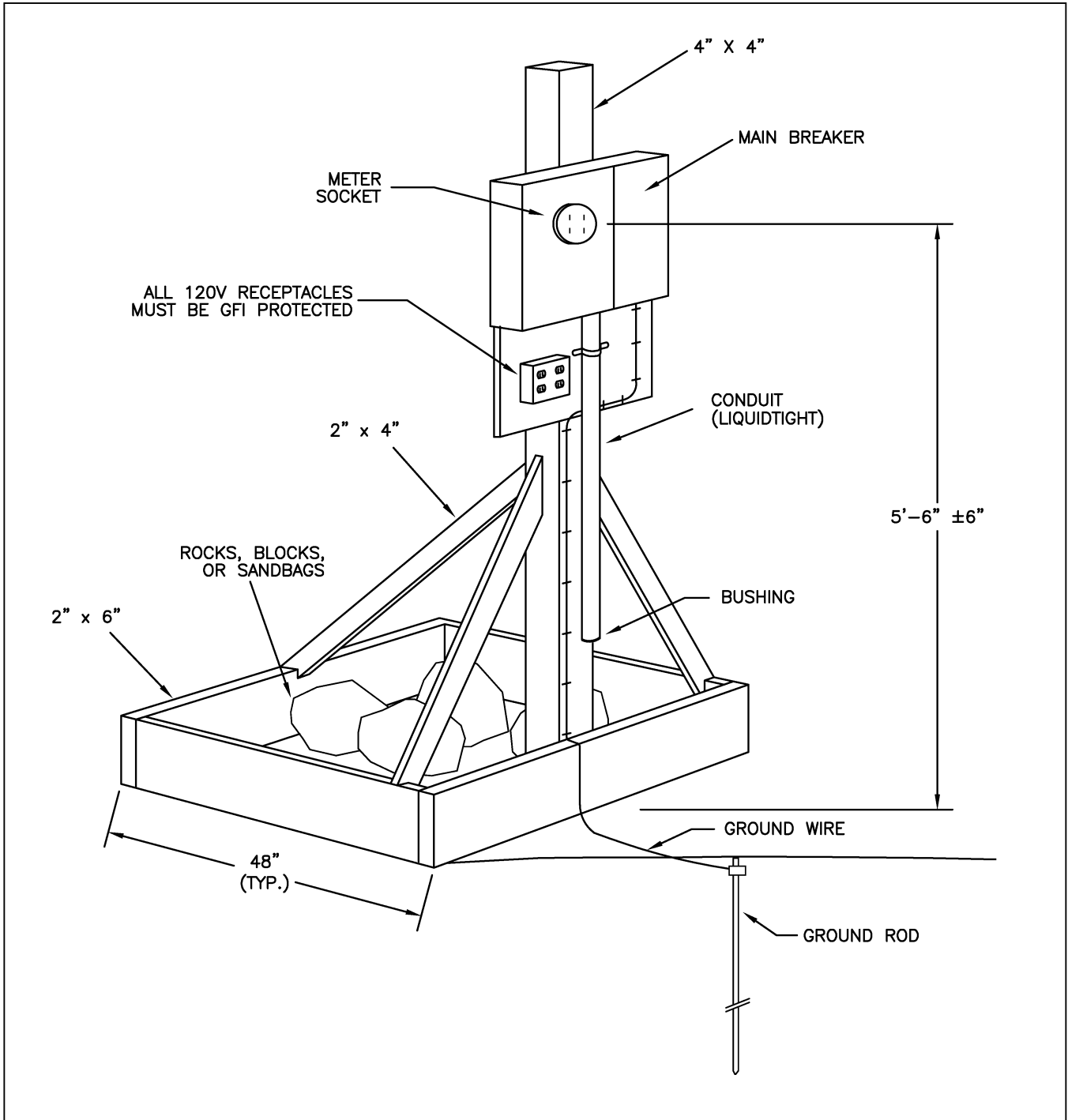


Figure 18: Underground Temporary Construction Service
Residential or Commercial



4G: Services to Motors

To prevent unacceptable voltage flicker to other members, single-phase motors are generally limited to 10 HP and smaller. Motors larger than 10 HP require Engineering Department installation pre-approval. Members are encouraged to contact the Engineering Department to discuss the connection of motors or any other type of atypical load. This discussion will aid in the proper selection and installation of this equipment, as well as limit the likelihood of negatively impacting the quality of power for themselves, their neighbors, and the system as a whole.

Standard three-phase voltages are 208 wye and 480 wye, and motors should normally be connected at these voltages. In certain cases, 240 delta or 480 delta connections are possible, but these unusual connections must receive Engineering Department pre-approval.

In general, across-the-line starting may be used for three-phase motors up to 25 HP. Reduced voltage starting is required for all motors larger than 25 HP.

Members are responsible for providing overload, short-circuit, and under voltage protection for motors installed on the member's system. Where three-phase motors are used, protection against "single-phasing" is the member's responsibility.

Members may install a "phase converter" in order to operate a three-phase motor from a single-phase service in locations where three-phase service is not available. Motor size for such installations is limited to 10 HP. Installation and maintenance of this equipment is the member's responsibility.

4H: Standby Generator Connections

When incorporating a standby generator into your electrical system, proper installation is essential for safe operation. If not properly isolated, a standby generator can backfeed into MEA's system, which can be very dangerous to crews working to restore power. For this reason, a double-pole double-throw (DPDT) transfer switch must be installed. This switch must provide a visual open, lock out capability, and be accessible on the outside of the structure. No devices will be allowed between meter and meter socket. To assure proper application and compliance with NEC requirements, we recommend the switch be installed by a licensed electrician.

There are two (2) types of installations. Which alternative you choose depends on the size of your home and generator.

Alternative 1 requires that the transfer switch be the same size as the main disconnect. This transfer switch arrangement is capable of carrying all loads under normal conditions, which means that the only limiting factor on the amount of electrical equipment to run at the same time under emergency conditions is the size of the generator. Under emergency conditions, you may need to turn off circuits except those that feed emergency loads unless the generator is large enough to carry the entire load.

Alternative 2 allows selected critical loads to be separated from the main distribution panel and wired into a sub panel. The generator will supply power to these loads only. The limitation of this alternative is that the entire house load cannot be incorporated into the standby generator circuit.

The following Figures 19 and 20 show wiring diagrams for these alternatives.

Figure 19: Standby Generator, Alternative 1
Generator Supplies All Loads – Residential or Commercial

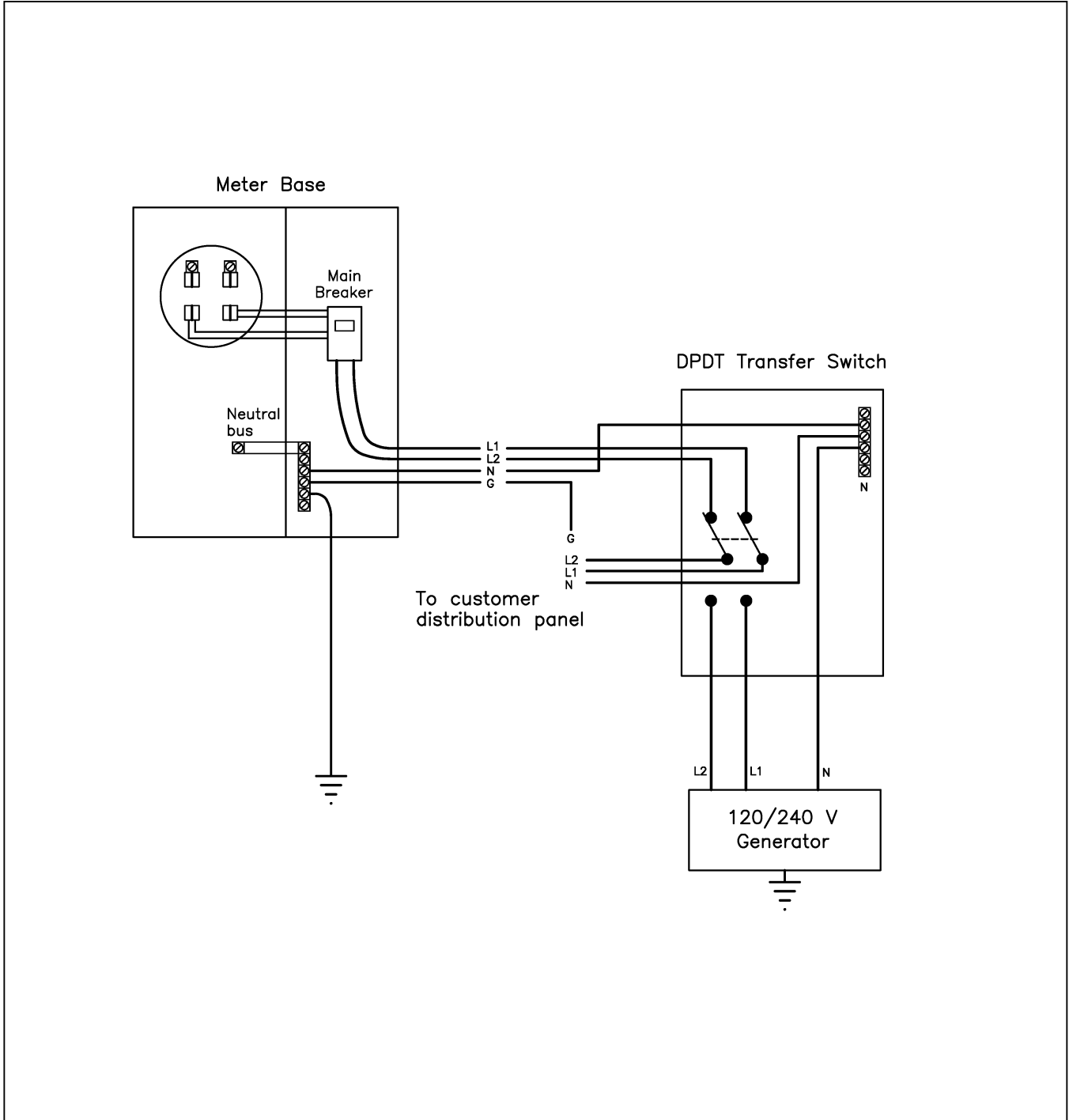
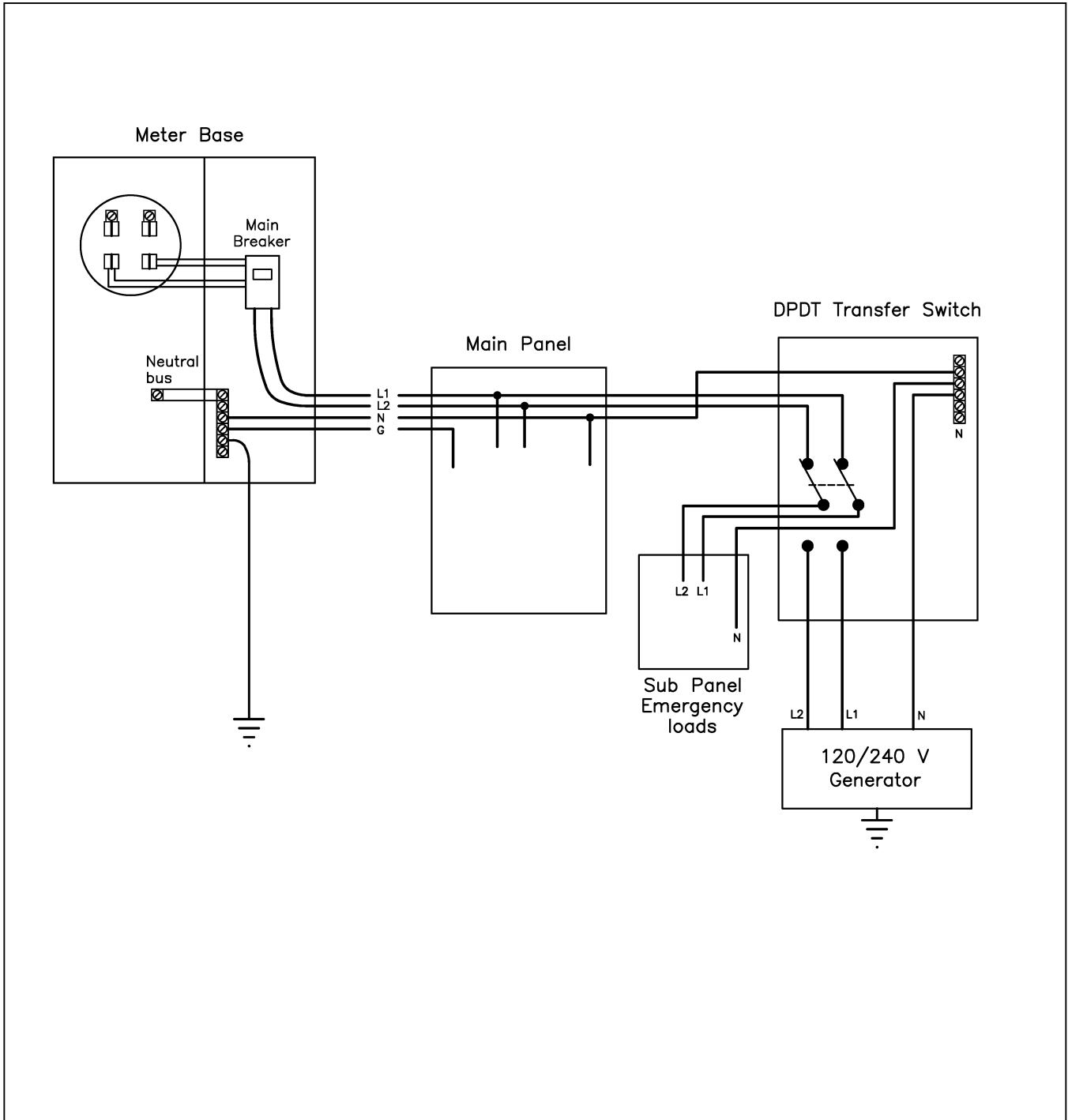


Figure 20: Standby Generator, Alternative 2

Generator Supplies Selected Critical Loads Only – Residential or Commercial





Matanuska Electric Association, Inc.
163 E. Industrial Way
Palmer, AK 99645
761-9300
www.mea.coop

District Offices:

Palmer Headquarters

163 E. Industrial Way
761-9300 or 745-3231

Wasilla

1401 S. Seward Meridian Pkwy.
376-7237 or 761-9500

Eagle River

11623 Aurora St.
694-2161

Engineering Office:

Big Lake (visits by appointment only)

9550 W. Herkimer Dr.
761-9450

Power Outages:

Mat-Su: 746-7697 (746-POWR)
Eagle River or Anchorage: 696-7697 (696-POWR)
SmartHub: Download the app at www.mea.coop

Underground Locate Requests:

Call Alaska Digline, Inc.
1-800-478-3121 (Mat-Su)
278-3121 (Eagle River or Anchorage)
Or dial 811

