



**ROCK ENERGY
COOPERATIVE**
Empowering Members Since 1936

**Residential
Electric Service Installation**



NEW RESIDENTIAL SERVICE INSTALLATIONS

Before we can complete any installation of service, we will need you to become a member of our cooperative. A New Member Packet is available at our website, rock.coop. Go to the "New Service" tab and drop down to "New Construction". From there you can click to download a New Service Packet. Packets are also available, for pick-up, at both Rock Energy locations in Janesville and South Beloit. Please complete the information in this packet and return to our Janesville office for services in Wisconsin or our South Beloit office for services in Illinois. Once we receive the completed forms, we will gather the necessary information regarding lengths of service and invoicing.

Here is a timeline of criteria to be met:

- Application completed and returned
- Property within 6 inches of final grade
- Member supplies a 10 ft wide (minimum) route clear of construction material, trees, and/or brush
- Electric meter socket installed meeting the following conditions:
 - Meter socket approved by Rock Energy and meets mechanical, voltage, and current requirements for your installation
 - Residential meter socket to include meter horns (minimum) or lever bypass (preferred)
 - Meter socket to be equipped with terminal block connectors for REC conductor.
 - REC does not use compression fittings**
 - Underground service meter pedestals shall be mounted where the center of the meter will be 3' (minimum) to 4' above final grade while the bottom of the pedestal is 18" below final grade
 - Overhead service meter sockets shall be mounted so the meter is 5' (+/- 6") above final grade
 - Grounding shall conform to NEC. Rock Energy **requires** all bonding conductors to be installed **external** of service equipment or metering equipment enclosures. **THE GROUNDING CONDUCTOR BETWEEN THE MEMBER'S SERVICE DISCONNECT AND THE GROUND RODS SHALL NOT PASS THROUGH THE METER SOCKET, INSTRUMENT TRANSFORMER CABINETS, OR THE UTILITY PORTION OF A METER MAIN PEDESTAL.**
- Meter socket inspected and approved by Authority Having Jurisdiction.

After the above criteria is met, we will conduct a field visit to measure the service routes, then create and send you an invoice for installation. Once we receive a paid invoice, we will move the project to our construction calendar. After the project moves to the construction calendar, services are generally installed within 2 – 3 weeks.

- For multiple metering installations (two or more), each meter position shall be marked on the outside of the socket or by the breaker (if available) with the address of the unit served. This marking shall also be placed on the corresponding distribution panel(s). The external marking shall be a **permanent self-sticking brass or engraved rigid plastic label** with minimum ½ inch block letters or numbers, suitable for the location so as to be considered permanent. A permanent marking shall also be inside the meter socket base in a visible location. Meters will not be installed until this requirement is met.
- All commercial accounts and all residential accounts with more than 7 kw of commercial load, will be placed on a rate schedule requiring demand billing. For more information on demand billing, go to our website at rock.coop under the *member services* tab then *demand charge*.



RESIDENTIAL ELECTRIC SERVICE INSTALLATION

GENERAL

The use of the name Rock Energy Cooperative (REC) refers to the electric utility operating in Wisconsin and Illinois.

PURPOSE

- A. The purpose of these Electric Service Standards is to supply information to members, employees, architects, engineers, contractors, inspectors, and others concerned with the planning and construction of electric service installations in Rock Energy's service area. Rock Energy's objective is to cooperate and assist members to obtain safe and efficient electric service.
- B. Information in these Electric Service Standards is intended to cover typical installations. Rock Energy shall be consulted when special consideration is required.
- C. Before and during the planning stages for electric service, especially larger projects, members, their contractors, architects, and engineers should contact Rock Energy to avoid misunderstanding and unnecessary expenses. Rock Energy will assist in the planning, scheduling, and explain all applicable rates and rules. Early notification will prevent unnecessary delays and expense.

SCOPE

The scope of these installation standards is to provide information to assist in the design and construction of electric service installations. Information is provided to address the responsibilities for ownership, installation and maintenance of service equipment to accommodate installation of utility owned service drops, underground service laterals and the installation of member termination and metering facilities.

Information and requirements relating to sketches or other information contained in these standards are intended to aid contractors with the design, planning and installation of service facilities for their customers.

WORD APPLICATION

- A. "Shall" denotes a rule or mandatory requirement which shall be followed.
- B. "Should" recommends a desirable practice for a specific condition.
- C. "May" indicates a possible option.
- D. "Access" or "Accessible" requires member to provide keys or lock combinations to enter buildings, fenced areas, and/ or locked gates.



POINT OF SERVICE

The energy supplied by Rock Energy changes ownership at the point of service. This is the location where the members wiring starts and Rock Energy's ends.

- A. The overhead point of service is where Rock Energy attaches its service drop to the Member owned attachment point on the building or structure, and where the Rock Energy conductor connects to the member owned conductor from the weatherhead.
- B. The point of service for an underground service is located at the line side terminals of the meter socket (self-contained services) or the line side terminals of the CT Cabinet (CT rated services).

CODES AND RULES

Rock Energy requires that all member wiring installations meet the minimum requirements of the *National Electric Safety Code*, *National Electric Code*, *National Fuel and Gas Code (NFPA 54)*, *Liquefied Petroleum Gas Code (NEPA 58)*, *DOT Regulations*, and/or state and local codes when their requirements are more restrictive, including Wisconsin Administrative Code PSC 114 which Rock Energy follows in Wisconsin and Illinois service territories.

- A. Rock Energy reserves the right to refuse to extend service where a member's installation does not comply with these provisions and requirements as stated.
- B. Rock Energy shall de-energize any service when that service is found to be in an unsafe condition.
- C. All meter sockets, meter pedestals, group meter assemblies, modular meter assemblies, CT and VT cabinets, and other electrical cabinets shall be listed by an independent testing agency (such as U.L.) for the specified voltage and amperage rating indicated and carry the testing agency's listing mark.

WIRING INSPECTIONS:

- A. Members wiring installations shall meet the minimum requirements set forth by the State Regulatory Commissions and any local authority having jurisdiction. Rock Energy shall receive a written approval form from the Authority Having Jurisdiction.
- B. Where no inspection authority exists, Rock Energy shall receive a signed copy of the Wiring Statement – Certificate of Electrical Inspection before energizing any new or rewired electric service. This statement must include the Master Electrician License Number.
- C. Rock Energy reserves the right to inspect for compliance with these standards but assumes no responsibility for inspection of the member's installation.



APPLICATION FOR SERVICE

Applications for a **new service** and/or **changes to an existing service** shall be in writing and made well in advance of the date service is required. This will permit Rock Energy to plan and schedule its work to provide service by the date required.

A. Application forms: The proper application for service must be submitted when applying for service.

B. Service Location:

1. The member shall, at this time, provide Rock Energy with the **projected demand load** information and the proposed **service entrance size** and **voltage requirements**. *These are required fields.*
2. The member shall contact Rock Energy for assistance and approval when determining the service location on the building or where the structure supporting the service will be located.

C. Easements:

1. The member shall provide Rock Energy with a lot site plan which includes existing or future septic systems, wells, pools, decks, sheds, additions or other possible obstructions to the service conductor. Should the member require the service conductor be relocated after installation, the member will be responsible for all associated costs.
2. The member shall provide Rock Energy with a recorded copy of the Certified Survey or Plat plan of the property where the service is requested.
3. The member shall provide easements for services and/or distribution facilities where required.

D. Line Clearance:

The member shall be responsible for clearing any trees or brush which might inhibit the service installation or maintenance of Rock Energy facilities.

E. Wiring Inspections:

1. Members wiring installations shall meet the minimum requirements set forth by the State Regulatory Commissions and any local authority having jurisdiction. Rock Energy shall receive a written approval form from the Authority Having Jurisdiction.
2. Where no inspection authority exists, Rock Energy shall receive a signed copy of the Wiring Statement – Certificate of Electrical Inspection before energizing any new or rewired electric service. This statement must include the Master Electrician License Number.
3. Rock Energy reserves the right to inspect for compliance with these standards but assumes no responsibility for inspection of the member's installation.

F. Charges

Once we receive the application, Rock Energy will conduct a site visit, plan a route, and measure the route, then generate a construction invoice. After Rock Energy receives an approved wiring inspection, by the Authority Having Jurisdiction, and the construction invoice is paid in full with all codes and standards met, Rock Energy will move the project to the construction phase. Once a project moves to the construction phase, services are generally installed within 2 – 3 weeks.



METERING FACILITIES

- A. All residential meter sockets shall be ringless, equipped with a manual operated bypass (either horned (minimum) or lever locking jaw (preferred), have individual covers and Rock Energy approved. An individual self-contained 200-amp meter socket is the minimum allowed for an underground service.
- B. Commercial meter sockets shall be ringless, equipped with a lever locking jaw bypass capable of carrying full rated continuous duty current, have individual covers, and Rock Energy approved.
- C. Traffic Signals shall be considered a commercial service, requiring a lever locking jaw bypass capable of carrying full rated continuous duty current, have individual covers, and Rock Energy approved.
- D. Permanent or added 5th terminals shall be member installed, horizontally, in the nine o' clock position. Permanent or added 6th terminals shall be member installed, horizontally, in the three o' clock position. All added terminals to the meter socket must be of the screw-in type and not plugged into the socket.
- E. The billing rate to which a member is assigned determines whether a residential meter socket or commercial meter socket will be used.
- F. All outdoor service raceway or cable connections to meter socket bases, meter enclosures, or switches shall be rain tight. Service conductor termination fittings in metering equipment shall be set screw type terminal lug connectors. These lugs shall be rated to accept conductor sizes from #6 to 350KCM. Rock Energy **does not** use compression fittings.
- G. All instrument transformer cabinets shall be approved by Rock Energy. An approved list is available from Rock Energy for your specific service size.
- H. Instrument transformer cabinets shall be sized based on the service size.
- I. Instrument transformer cabinets will also have factory bus bars installed to accommodate bar style CT's installed by Rock Energy. **Rock Energy bar style CT's outside mounting hole distance is 10 7/8 inches.**
- J. Short Circuit Current Rating (SCCR), Fault Current Ratings and Amperage Interrupting Current (AIC) do not apply to meter sockets unless the meter assembly contains breakers as a part of the assembly. Then the assembly must meet the SCCR requirements.
- K. Meter sockets are required on all new services, including municipal street lighting and area lighting.
- L. Grounding shall conform to NEC. Rock Energy **requires** all bonding conductors to be installed **external** of service equipment or metering equipment enclosures. **THE GROUNDING CONDUCTOR BETWEEN THE MEMBER'S SERVICE DISCONNECT AND THE GROUND RODS SHALL NOT PASS THROUGH THE METER SOCKET, INSTRUMENT TRANSFORMER CABINETS, OR THE UTILITY PORTION OF A METER MAIN PEDESTAL.**
- M. Intersystem bonding – CATV, Satellite systems, and Telephone Companies shall bond to the grounding electrode system, if available. If the grounding electrode system is not readily available, bonding shall be done at the ground terminal bar in the main service entrance equipment (NEC 250.94 (2) or (3) only). This intersystem bonding shall not be done in or on the metering equipment. Rock Energy adheres to this policy in Illinois as well. Wisconsin is the jurisdiction of the PSC. (PSC 114.099)



 SERVICE INSTALLATIONS

- A. The member furnishes and installs all meter sockets, ganged meter sets, instrument transformer cabinets, troughs, and other related metering equipment. Rock Energy will provide all meters, instrument transformers, and CT meter wiring. The member will install the 1 ½" – 2" galvanized rigid steel conduit, for the metering wires, between the CT cabinet and the meter socket.
- B. The member is required to furnish the service panel, secondary conductor and all equipment on the load side of the meter. All installations must meet National and State Codes and REC specifications.
- C. The member is required to furnish and install, between Rock Energy's transformer and the member's CT cabinet, properly sized secondary conductor(s) to accommodate the members service.
- D. Rock Energy will terminate secondary conductors in the transformer.
- E. Meter mounting devices shall be securely fastened to the supporting building or structure with rust-resistant fasteners. Certain structures may require the addition of a rust resistant reinforced mounting surface. Conduits and cables shall not be used to support wall mounted devices. In no case shall sockets be installed where they will be exposed to mechanical injury, excessive dust, excessive moisture, corrosive vapors, or vibrations.
- F. Meters and metering devices shall be mounted plumb and at such a height that the center of the meter is at a nominal height of 5 feet (+/- 6") above the final grade, except as follows:
Exception #1 – Group mounted meter sockets shall be mounted so that meters centers are between 2'-6" and 6' above final grade.
Exception #2 – Outdoor wall mounted, or free-standing meter pedestals shall be mounted so that meter centers are a minimum of 36" above final grade, while the bottom of the socket is 18" below final grade.
Exception #3 – Flood zones. Rock Energy may grant a variance for height requirements in 100-year flood plain areas. A variance request shall be submitted to Rock Energy before any electrical work has begun. The requestor must supply 100-year flood plain documentation for the location and a design that conforms to OSHA Standards 1926.1052 and 1910.23 with the variance request. Rock Energy will not approve any meter heights beyond 3 feet above the 1000-year flood plain levels. Required unobstructed work areas shall be maintained on this and all meter installations.
- G. Member owned equipment shall not be installed in meter sockets, instrument transformer cabinets, or termination cabinets that are sealed by Rock Energy.
- H. Rock Energy **requires** all bonding conductors to be installed **external** of service equipment or metering equipment enclosures. **THE GROUNDING CONDUCTOR BETWEEN THE MEMBER'S SERVICE DISCONNECT AND THE GROUND RODS SHALL NOT PASS THROUGH THE METER SOCKET, INSTRUMENT TRANSFORMER CABINETS, OR THE UTILITY PORTION OF A METER MAIN PEDESTAL.**
- I. All conduits entering the building shall be filled with duct seal to prevent moisture and condensation from entering the meter socket.



LOCATION OF METERS

- A. Rock Energy shall approve the location of all meters and metering equipment. The metering equipment shall be accessible, at all times, to Rock Energy representatives. If the electric metering equipment is ever enclosed behind a locked gate, locked fenced area or made inaccessible due to a building addition, the member shall furnish Rock Energy with a key or code to access the metering equipment.
- B. The meter sockets, enclosures or cabinets shall be installed outdoors on a substantial building or structure.
- C. Rock Energy **does not** allow meter sockets to be installed on enclosures or cabinets.
- D. Rock Energy **does not** allow Current Transformers to be placed inside pad mount transformers or member's switchgear. Current transformer cabinets are required. **Contact Rock Energy for an approved list of CT Cabinets for your service size.**
- E. Member shall provide a Test Switch Block for **ALL** CT rated services.
- F. Meter sockets shall be positioned on the **latch side** of the CT cabinet (unless CT cabinet has two doors). **Contact Rock Energy for an approved list of Meter Sockets.**
- G. Meter sockets shall be mounted at least 36" from the **hinge side** of any hinged door.
- H. When used for metering purposes, Rock Energy requires all yard pole meters, field built metering structures, or free-standing metering pedestals, to be installed so the meter faces an area (usually a driveway) that will accommodate motor vehicle access to the meter. This will allow the meter to be read from the vehicle if necessary.
- I. If a self-contained meter is installed at a location other than a building, or farm distribution center, over current protection and grounding shall be required at the metering point.

RESIDENTIAL SERVICE LIMITATIONS

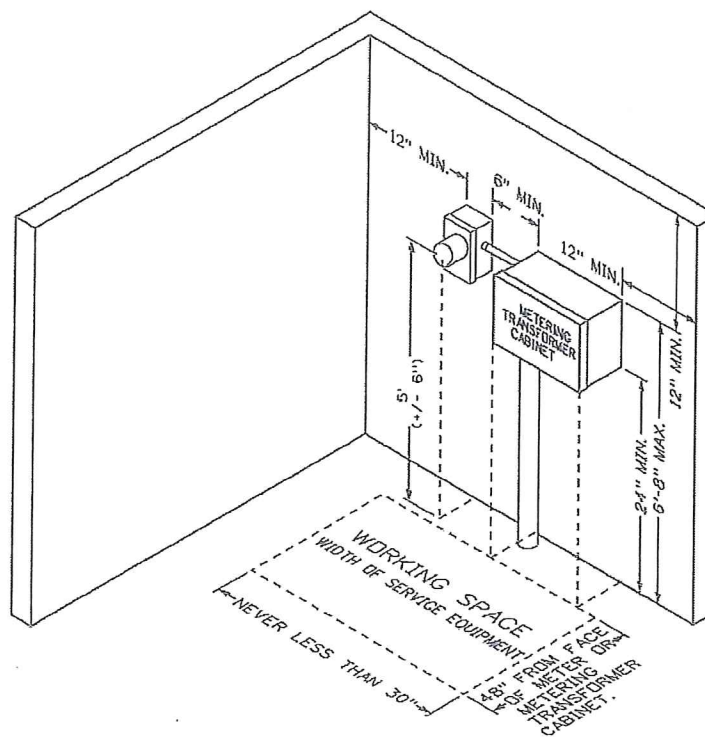
Overhead and Underground – Up to 300 amps (CL320 meter)

IDENTIFICATION OF METERS

For multiple metering installations (two or more), each meter position shall be marked on the outside of the socket or by the breaker (if available) with the address of the unit served. This marking shall also be placed on the corresponding distribution panel(s). The external marking shall be a **permanent self-sticking brass or engraved rigid plastic label** with minimum ½ inch block letters or numbers, suitable for the location so as to be considered permanent. A permanent marking shall also be inside the meter socket base in a visible location. Meters will not be installed until this requirement is met.

CLEARANCE REQUIREMENTS FOR METERING EQUIPMENT

Rock Energy requires a minimum of 48 inches working space in front of each meter, meter cabinet, or instrument transformer cabinet.

UNOBSTRUCTED WORK AREA**NOTES:**

1. Workspace is measured out 48" from the face of the meter or door(s) of the cabinet and a minimum 30" wide.
2. A minimum 6" vertical and horizontal separation shall be maintained between metering equipment and other obstructions or non-metering equipment.
3. The space shall be large enough to allow the cabinet doors to open 90 degrees.
4. The space shall be clear from final grade to at least 6'-6" (8'-0" preferred) above the ground.
5. An area of at least 30" in width shall be provided to access the work area.
6. This work area shall not be used for storage.



NON-COMBUSTIBLE BUILDING WALLS

NON-COMBUSTIBLE WALLS – Are walls where the framing and sheeting materials will not burn and they will in no way contribute to the burning process.

Metal skinned wood framed buildings are considered to be combustible.

Pad-Mount oil insulated transformers may be located no closer than 3-feet to noncombustible walls if all of the following clearances are maintained from doors, windows, and other building openings:

a. Doors:

Pad-Mount oil insulated transformers shall not be located within a zone extending 20-feet outward and 10-feet to either side of the building door.

b. Air-Intake Openings:

Pad-Mount oil insulated transformers shall not be located within a zone extending 10 feet outward and 10 feet to either side of an air intake opening. Transformers may be located within the zone beneath an air intake opening provided there is a minimum 25 feet diagonal separation between the transformer and the opening.

c. Windows or Openings Other than Air Intake

1. Pad-Mount oil insulated transformers shall not be located within a zone extending 10-feet outward and 3-feet to either side of a building window or opening other than an air intake.

2. Pad-Mount oil insulated transformers shall not be located less than 5-feet from any part of a second story window or opening other than an air intake.

COMBUSTIBLE BUILDING WALLS

a. Pad-Mount oil insulated transformers in sizes up to and including 100 KVA shall be located according to the provisions set forth in the NON-COMBUSTIBLE BUILDING WALLS.

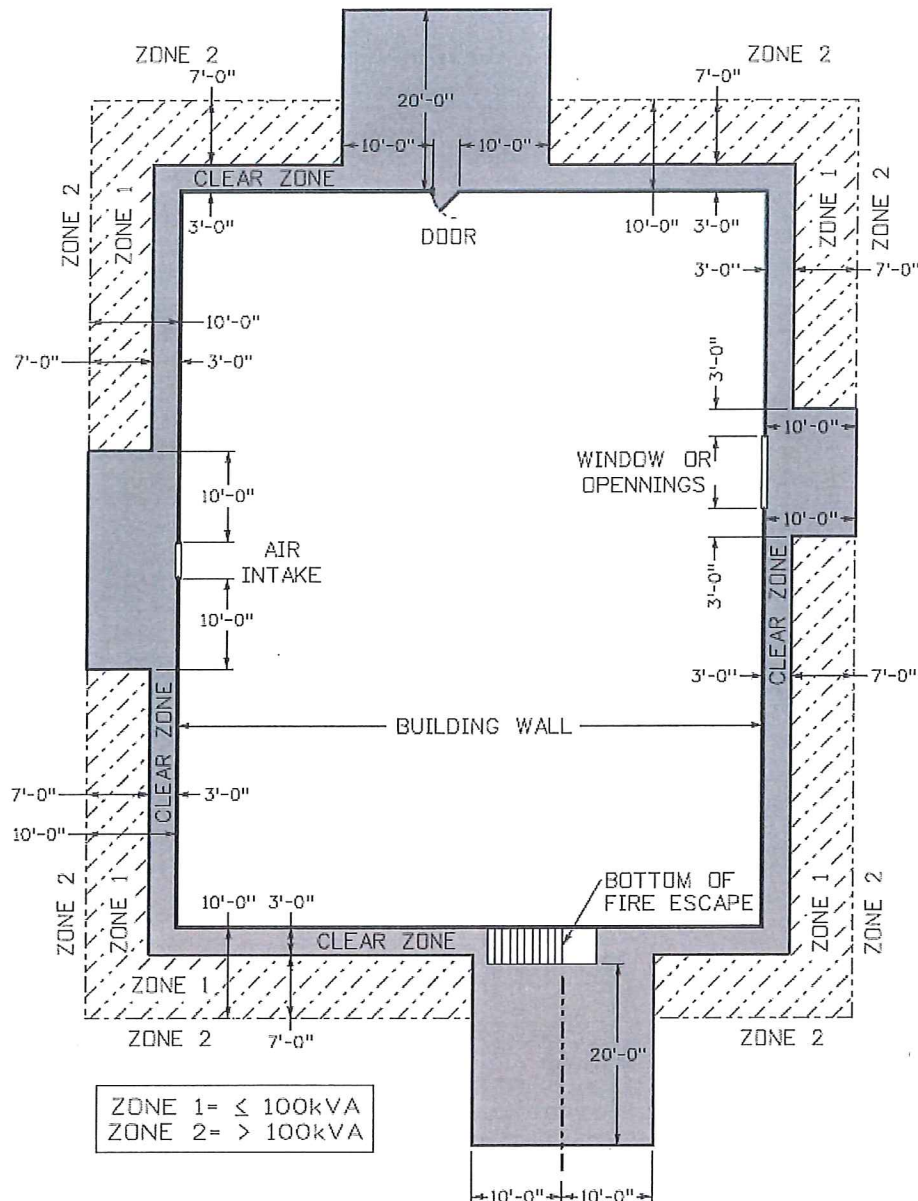
b. Transformers greater than 100 KVA shall be located a minimum of 10-feet from a combustible wall. Also, the clearances from building doors, windows and other openings set forth for non-combustible walls must be maintained.

c. An oil-collecting sump shall be installed for transformers in sizes exceeding 500 KVA if the immediate terrain is pitched toward the building.

CLEARANCE REQUIREMENTS AROUND TRANSFORMERS

Keep off and keep out of electrical transformers. If you find an electrical transformer unlocked or open, do not enter the transformer and please call Rock Energy immediately to have the situation remedied.

Rock Energy requires a **minimum of 10 feet** working space in front (lock side) of each transformer and a minimum 1 foot around the other three sides. Obstructions may be damaged or removed during service restoration or maintenance.

PAD-MOUNT TRANSFORMER LOCATION MAP

Notes:

Clear Zone: (Grey Area) = No transformers shall be located in this zone

Zone 1: (Shaded Area) = Minimum distance for pad-mounted transformer up to 100 kVA

Zone 2: Minimum distance for pad-mounted transformers greater than 100 kVA from a combustible building

An oil-collecting sump shall be installed for transformers over 500kVA if the immediate terrain is pitched toward the building.

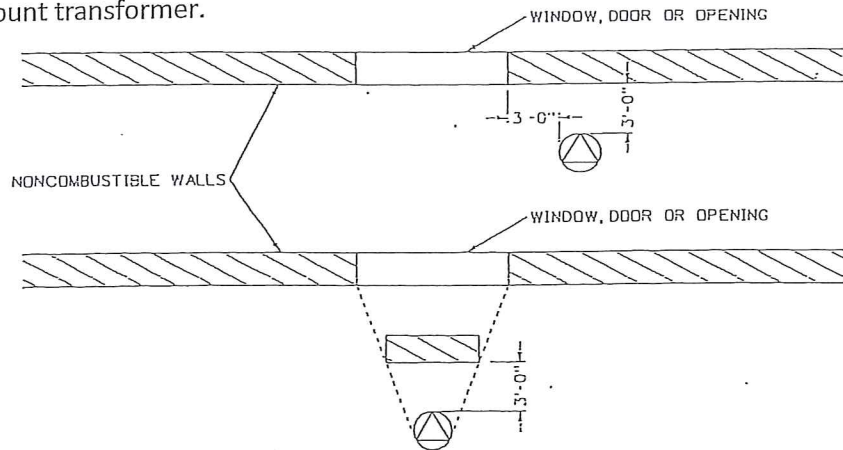


ELECTRIC METERING

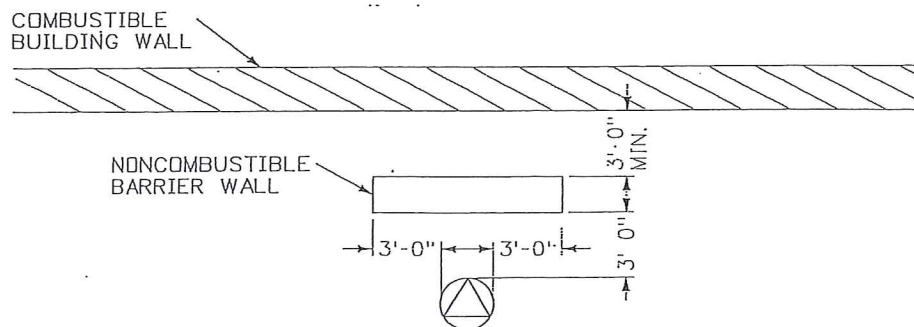
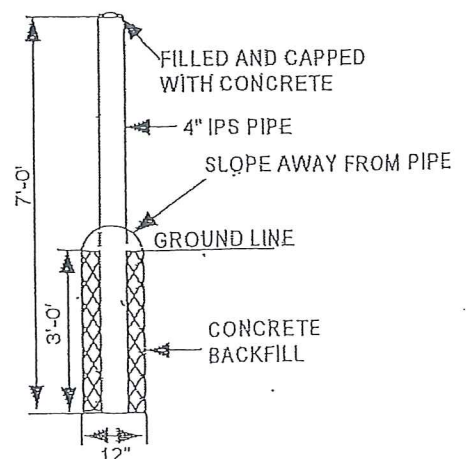
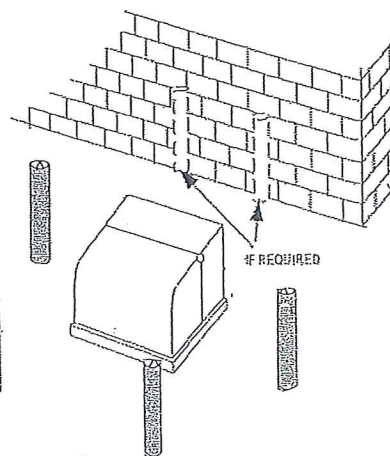
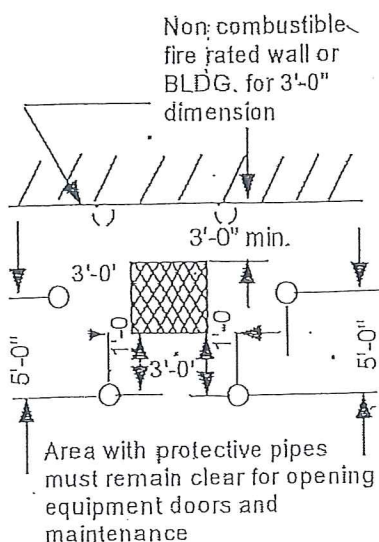
BARRIERS

If the clearances specified above cannot be obtained, a fire resistant barrier may be constructed in lieu of the separation. The following methods of construction are acceptable.

a. Non-combustible Walls – The barrier shall extend to a projection line from the corner of the pad-mount to the farthest corner of the window, door or opening in question. The height of the barrier shall be 1 feet above the top of the pad-mount transformer.



b. Combustible Walls – The barrier shall extend 3-feet beyond each side of the pad-mount transformer. The height of the barrier shall be 1-foot above the top of the pad-mount transformer.

**SINGLE-PHASE, PAD-MOUNT TRANSFORMER PROTECTION**



PAD-MOUNT TRANSFORMER LOCATIONS

Rock Energy shall approve the location of all transformer pads. Pad locations shall be in accordance with the requirements of **NEC, NESC, National Fire Protection Association, Environmental Protection Agency and any state or local requirements**. In addition, they are to be located far enough from the building overhang so they will not be subject to damage by falling snow and ice. Pad-mounted transformer locations shall be graded for proper drainage and be readily accessible by truck or other means for exchange. Where danger of snow plowing or traffic damage exists, barriers consisting of concrete filled pipe shall be provided for protection. Transformers shall have a minimum separation of 5-feet from natural gas service equipment. A minimum separation of 5-feet shall be maintained between transformers and liquid petroleum facilities on site but not filled on site. If the liquid petroleum facilities are filled on site, the minimum separation is 10-feet.

ATTACHMENT OF SERVICE DROPS

- A. The member's structure shall be strong enough to support the service drop and high enough to provide code clearance for the service drop and drip loops above the ground, buildings, driveways, roads, and other facilities.
- B. The member shall install a standard service attachment device.
- C. For connection to Rock Energy's service drop wires, the member's service entrance conductors shall project at least 36" beyond the weatherhead for a single service riser, and at least 60" for multiple risers.
- D. Neutral conductors are to be identified as per the NEC.
- E. A maximum of three (3) conduit risers will be allowed at the building or structure.
- F. The maximum height Rock Energy will attach a service drop to a building is 20 ft above the ground. If a greater attachment height is required, prior approval shall be obtained from Rock Energy.

SERVICE MAST CONSTRUCTION

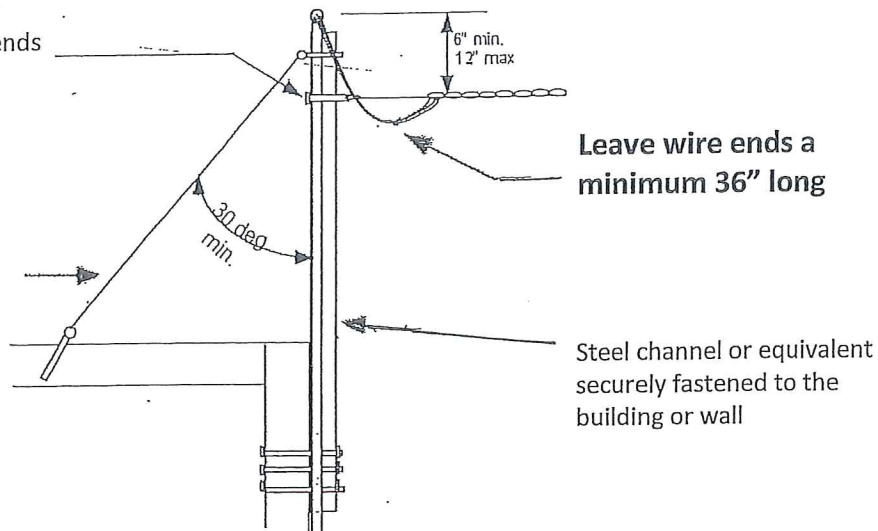
- A. Service masts for support (through the roof) shall be constructed of rigid galvanized steel (RGS) conduit with an inside diameter of no less than two (2) inches. IMC is not allowed as a service mast through the roof.
- B. That portion of the mast above the uppermost conduit support (roof line) **shall be continuous** in length without couplings.
- C. Service masts over 48 inches require guying. Contact Rock Energy before constructing masts more than 48 inches above the roof line.
- D. Service masts shall not extend more than 6 feet above any sloped roof. This height is measured from the point where the conduit exits the enclosed portion roof to the top of the weather head.
- E. NEC230.28 – "Only power service-drop conductors shall be permitted to be attached to a service mast."



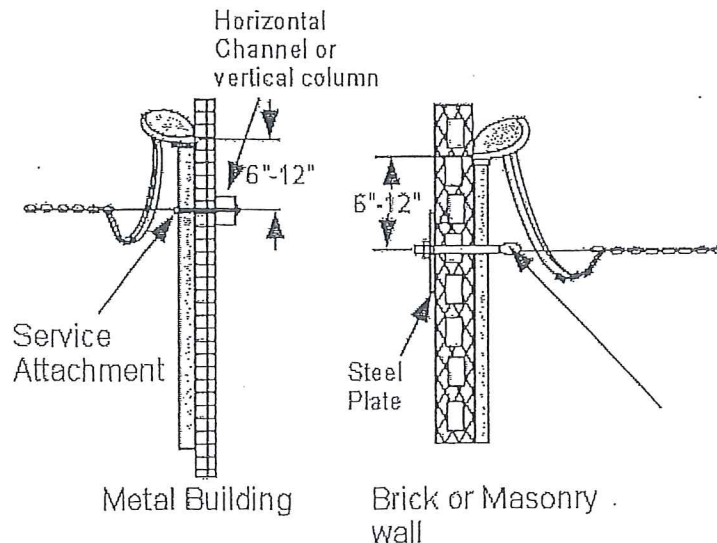
SERVICE MAST INSTALLATION FOR FLAT OR LOW-ROOFED BUILDINGS

Provide 11/16" hole(s) for Rock Energy's cable deadends

guy wire and attachments when required



SERVICE ATTACHMENT TO BRICK OR MASONRY WALLS AND METAL BUILDINGS



NOTES:

1. The member shall consult Rock Energy before such an installation is planned or started.
2. The member shall install, own, and maintain the installation except for Rock Energy's service drop, connectors, and cable dead-end.
3. The member shall consult with Rock Energy for the service cable tensions to provide and provide a structure of adequate strength. The installation shall provide adequate clearances for the Rock Energy's overhead service drop.



ELECTRIC METERING

OVERHEAD SECONDARY CLEARANCES

Where Service Drop Attaches or Crosses to a Supplied Building	Minimum Required Clearances	Notes
Weatherhead	Attachments shall be 12 inches min. and 24 inches max. horizontally; 6 inches & 12 inches max vertical from weatherhead	
Building attachment	12 feet above ground	1
Residential areas accessible to pedestrian only	10 feet (0 – 150 volts Phase to Ground)	
Driveway	16 feet above ground (non-residential); 12 feet above ground if residential only (no trucks)	2
Commercial areas not subject to truck traffic	16 feet above ground	
Roads, streets, commercial driveways and other areas subject to truck traffic	18 feet; 20 feet (Iowa State and Federal Hwys); 22 feet (Minn. State and Federal Hwys)	
Decks and balconies readily accessible to pedestrians	10 feet	
Decks and balconies not readily accessible to pedestrians	8 feet where possible; 3.5 feet minimum	3
Drip loop on triplex	10 feet above ground	
Windows, doors, porches, fire escapes, and awnings attached to a building	3 feet	
Where wires pass opposite a window	5 feet	
Communication wires	2 feet	7
Gas Regulator	3 feet from electric meter or terminating equipment; 5 feet from electric transformers	
LP Gas (liquid petroleum)	10 feet from electric metering or termination equipment	4
Where service drop crosses but does not attach to building, or sign, etc.	4.5 feet (Horizontally)	
Where service passes over a roof but does not attach	11 feet (Vertically) if accessible; 3.5 feet (Vertically) if non-accessible	6
Pool or Pond	22.5 feet (any direction 0 – 750 volts); 25 feet from diving board (any direction 0 – 750 volts); 5 feet from Underground Secondary Conductors	5
Where doors open outward	Service equipment shall be minimum of doors width, plus 6 inches away	8

Secondary Clearance Notes:

1. If height of building does not permit 12 ft., it may be reduced to 10.5 ft.
2. May be reduced to 12.5 Feet for residential only driveways
3. Maintain 8 feet if possible, may be reduced to 3.5 feet if necessary
4. If drop is subject to wind movement, the horizontal clearance is 3.5 feet min. at blow out position.
5. Only under the most extreme conditions should lines be run over water
6. In Wisconsin clearance may be reduced to 8 feet if accessible and 3.0 feet if it is non-accessible with a 4/12 slope roof
7. Clearances for services over state and federal highways are 17 Feet in Wisconsin
8. Where door opens outward clearance shall be the width of the door plus 6 inches



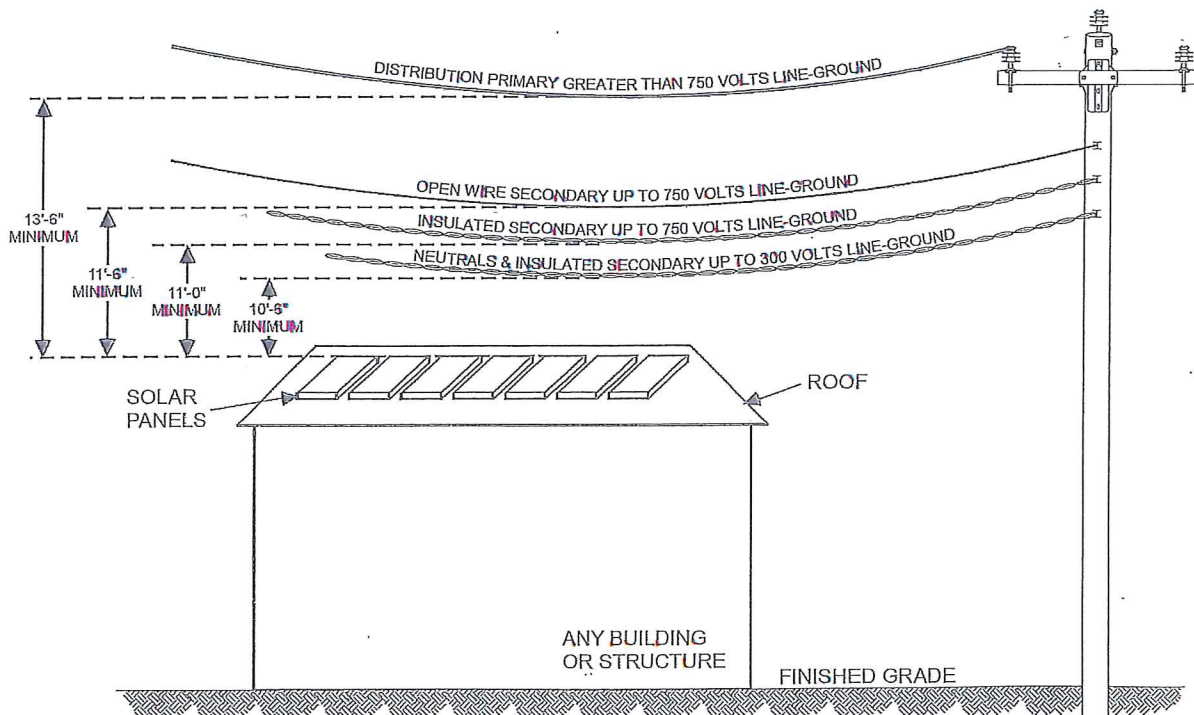
ELECTRIC METERING

RIGID CONDUIT

- A. "Rigid Conduit" includes rigid galvanized steel, rigid aluminum, galvanized IMC, or rigid nonmetallic conduit schedule # 80 PVC electrically rated and schedule # 80 equivalent polyethylene. The rigid nonmetallic conduit shall conform to specifications in Article 342, 344 & 352, of the National Electrical Code. Refer to individual sections for specific installations. "Galvanized steel conduit" may be either rigid steel or galvanized intermediate metal conduit (IMC). It shall not be electric metallic tubing (EMT).
- B. Schedule # 40 electrically rated PVC is allowed for horizontal runs 18" below final grade and into pad mounted transformers and pad mounted cabinets.
- C. All PVC service conduit sweeps shall be preformed.
- D. For longer conduit runs containing three or more bends, the Member shall consult with Rock Energy for the conduit size, and for the radius bend to use.

SOLAR PANEL CLEARANCE REQUIREMENT

A minimum clearance of 10.5 feet is required from any Rock Energy secondary or service conductors that cross over any building or structure containing solar panels. Additional clearances are required based on the type of conductor spanning over the location of the proposed solar panel installation.

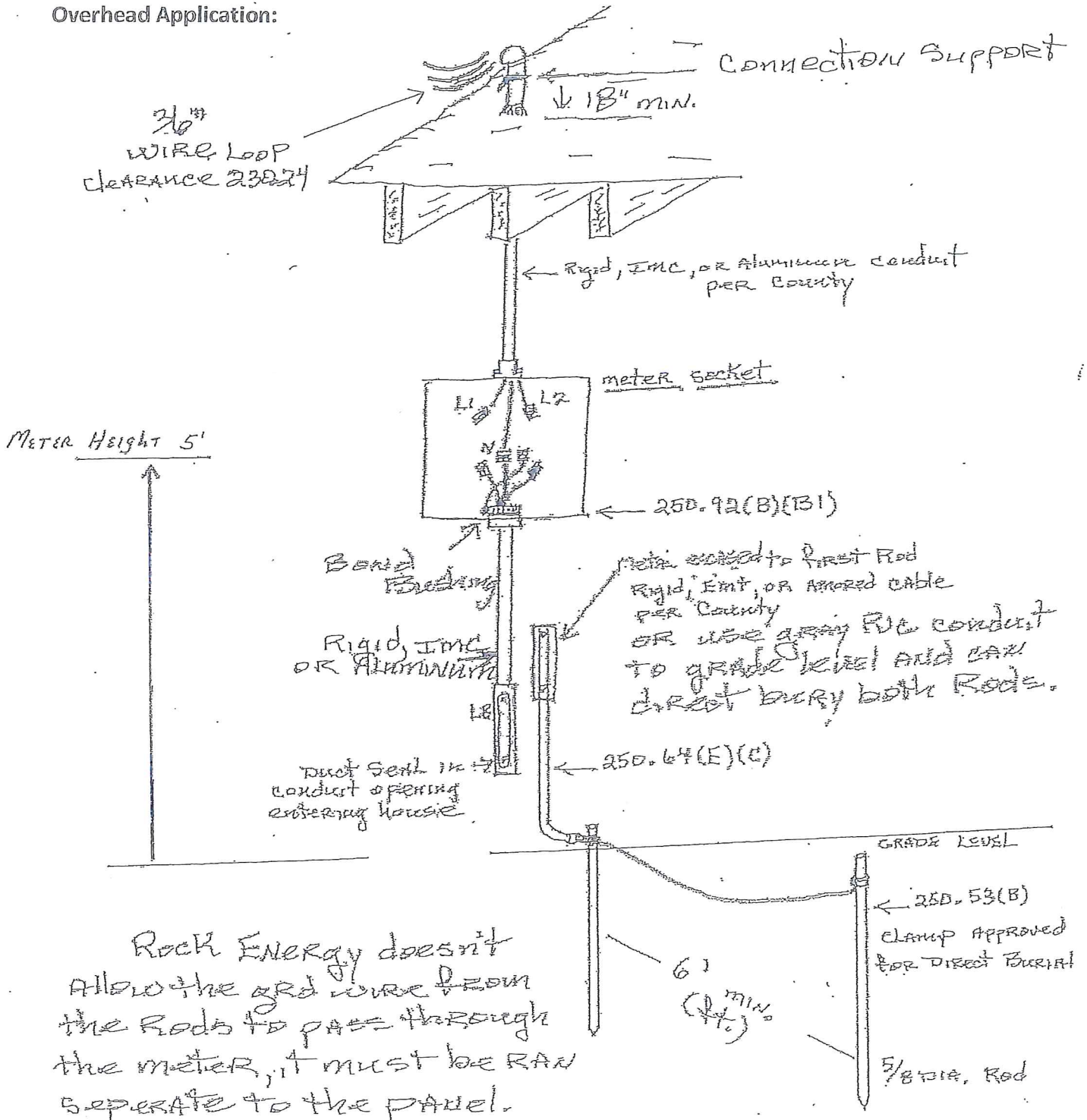




ELECTRIC METERING

Grounding shall conform to NEC. Rock Energy *requires* all bonding conductors to be installed *external* of service equipment or metering equipment enclosures. **THE GROUNDING CONDUCTOR BETWEEN THE MEMBER'S SERVICE DISCONNECT AND THE GROUND RODS SHALL NOT PASS THROUGH THE METER SOCKET, INSTRUMENT TRANSFORMER CABINETS, OR THE UTILITY PORTION OF A METER MAIN PEDESTAL.**

Overhead Application:

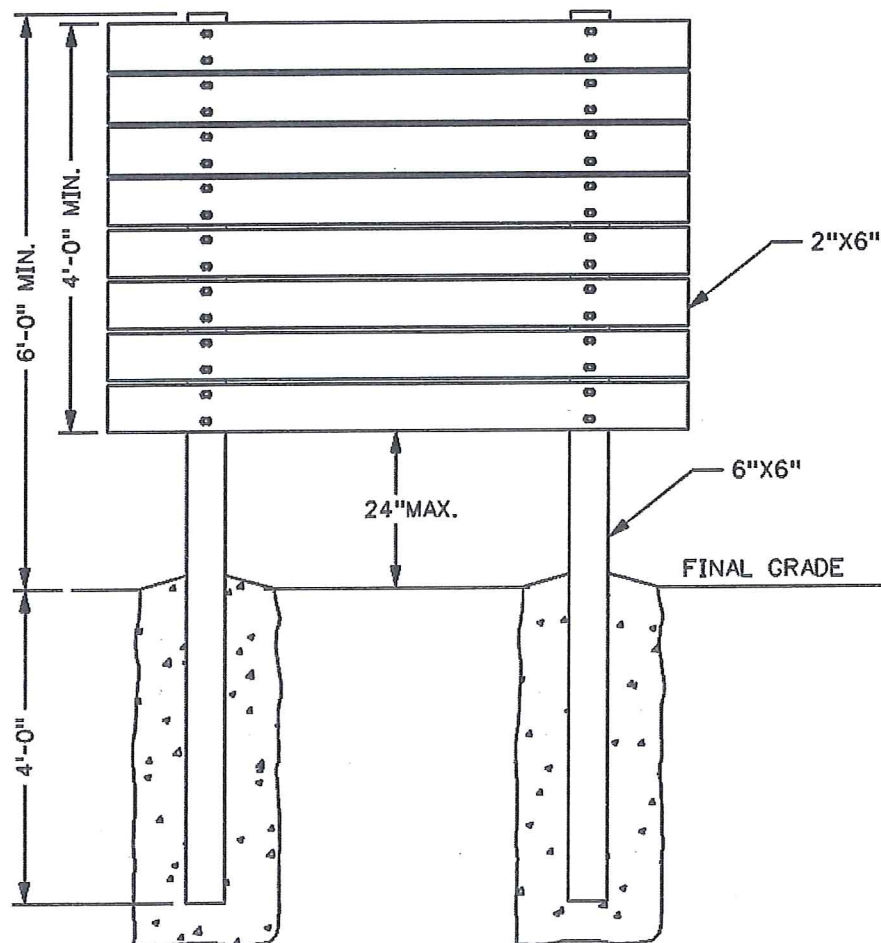




ELECTRIC METERING

FREE STANDING METER STRUCTURES – FIELD BUILT

- A. Field built structures are limited to 1200 amp – maximum
- B. Wood field-built structures shall have a minimum of two 6" x 6" wood posts and 2" x 6" planks that are commercially treated against decay. The posts shall be buried a minimum of 4 feet deep, plumb and set in concrete the full depth. The planks shall be level and fastened with galvanized hardware (bolts, washers, nuts, etc.), **nails and screws are not acceptable**. The member is responsible for the maintenance of the structure. The standard width is 24 to 60 inches.
- C. All service equipment shall be waterproof, lockable and listed by an approved testing agency for all service entrance use.

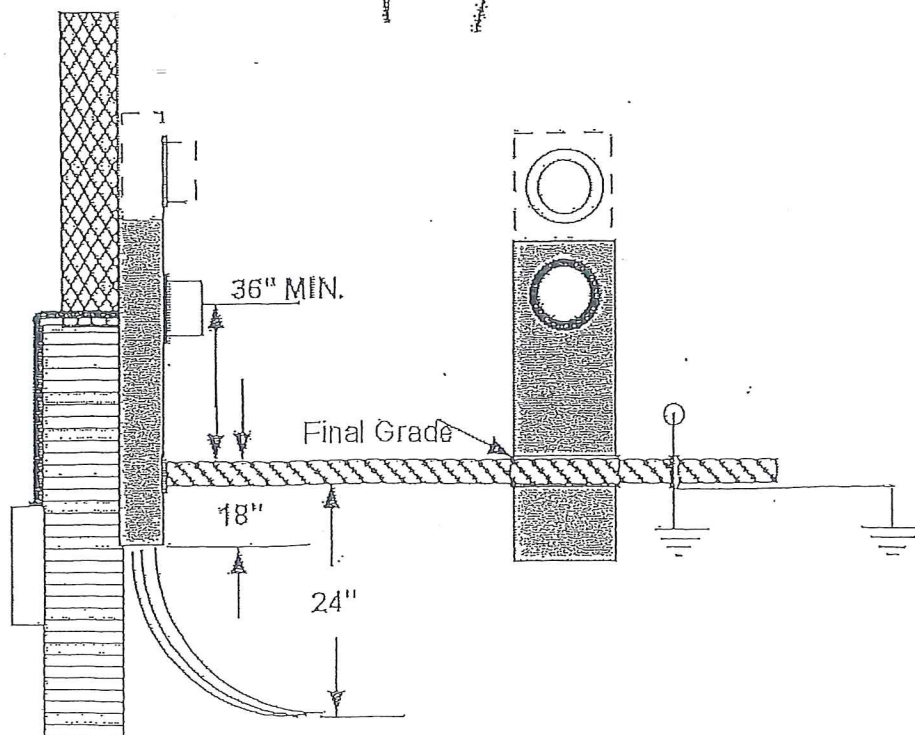
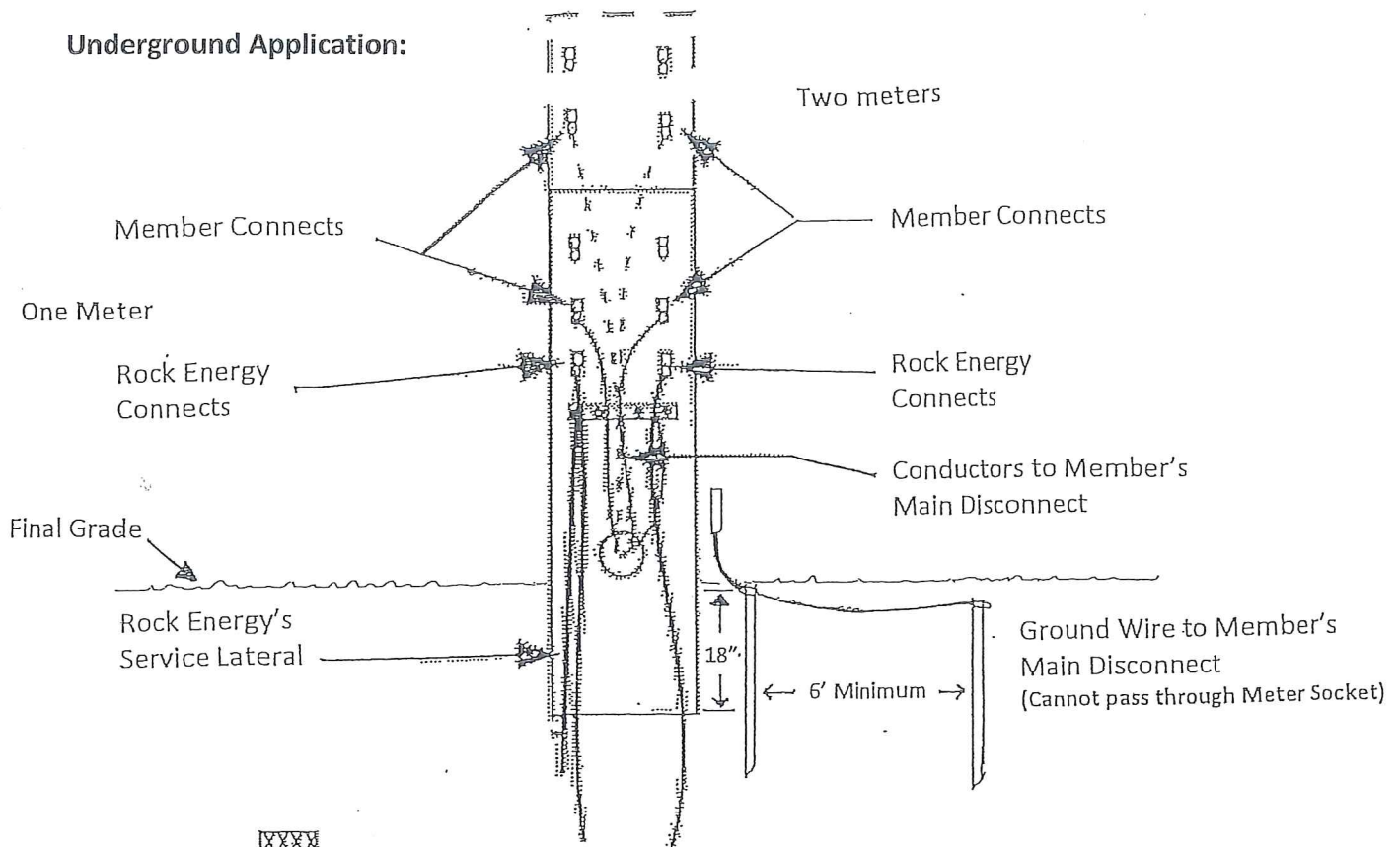
WOOD CONSTRUCTION



ELECTRIC METERING

Grounding shall conform to NEC. Rock Energy *requires* all bonding conductors to be installed *external* of service equipment or metering equipment enclosures. **THE GROUNDING CONDUCTOR BETWEEN THE MEMBER'S SERVICE DISCONNECT AND THE GROUND RODS SHALL NOT PASS THROUGH THE METER SOCKET, INSTRUMENT TRANSFORMER CABINETS, OR THE UTILITY PORTION OF A METER MAIN PEDESTAL.**

Underground Application:

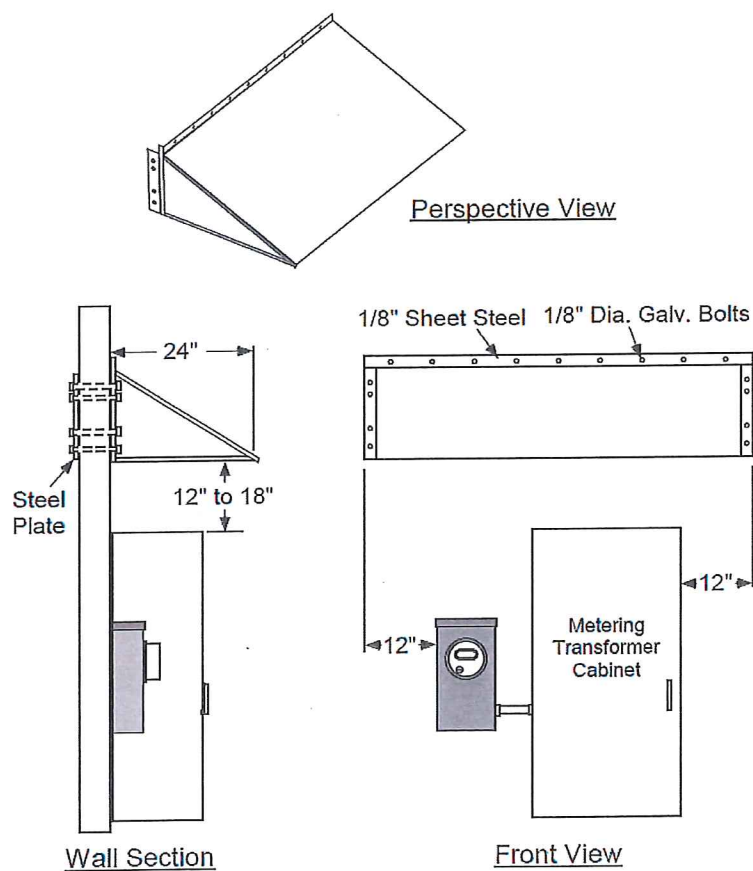




ELECTRIC METERING

METERING EQUIPMENT SHIELD

The Member is responsible for protecting Rock Energy's meter(s) and Member's own metering equipment from damage caused by falling ice, snow, or other objects. If protection is not provided for meter equipment, by adequate roof overhang, the Member shall construct a protective shield, or the meter location shall be moved to a safe area. The Member will be charged for meter replacement if damage occurs and typically an outage will be required to replace any damaged equipment. An adequate roof overhang shall extend a minimum of 18 - 24" out from the face of the wall to which the meter is mounted.

**NOTES:**

1. Steel to be primed and painted with rust resistant paint.
2. Shield shall be capable of supporting 50 pounds.
3. Shield may be constructed of steel, treated wood or masonry. Thin sheet metal (tin) is not acceptable.
4. Shield to be so located as to not be a "head bumping" hazard.
5. Width of shield may vary depending on the number of meters being protected.



SHORT CIRCUIT DUTY REQUIREMENTS

The member's service equipment and other devices shall be adequate to withstand and interrupt the maximum available short circuit current (Fault Current).

Definitions:

1. Short Circuit Current Requirements (SCCR) – The prospective symmetrical fault current at a nominal voltage to which an apparatus or system is able to be connected without sustaining damage exceeding defined acceptance criteria. (NEC 100)
2. Fault Current – is an abnormal current in an electrical circuit due to a fault, usually a short circuit or abnormally low impedance path. Fault Current comes in three varieties; phase to neutral fault, phase to phase fault, and phase to earth fault.
3. Ampere Interrupting Capacity (AIC) – This applies to circuit breakers and their ability to open and protect a circuit with a specific amount of current flowing in the circuit. Short Circuit Ratings from 10,000 to 65,000 amps.

A. SELF-CONTAINED METERING: MINIMUM SHORT CIRCUIT CURRENT RATINGS

120/240 VOLT, SINGLE-PHASE & 120/208 VOLT SINGLE/ THREE-PHASE	
Service Ampacity	Minimum Short Circuit Current Ratings
100 amp	10,000
150 amp	10,000
200 amp (service length > 50')	10,000
200 amp (service length < 50')	22,000
300 amp	22,000

NOTES:

1. Self-contained meter service applications are limited to a single service and have a maximum transformer size of 50kva for single phase or a 150kva three phase overhead bank. If larger transformer is installed, these numbers will change.
2. Total service ampacity ratings of all present and future service entrance equipment connected to the same overhead service drop or underground service lateral.

B. INSTRUMENT TRANSFORMER METERING: MINIMUM SHORT CIRCUIT RATINGS

120/ 240 VOLT, SINGLE PHASE & 120/ 208 VOLT, SINGLE/ THREE PHASE & 277/ 480 THREE PHASE	
Service Ampacity	Minimum Short Circuit Current Ratings
400	42,000
600	42,000
800	42,000
1200	65,000
1600	65,000
2000	65,000
2500	65,000
3000	65,000

NOTES:

1. Total service ampacity ratings of all present and future service entrance equipment connected to the same distribution transformer.
2. Minimum fault current equipment requirements do not apply to member yard pole, pole top switches.
3. All 277/ 480 volt services require instrument transformer metering.