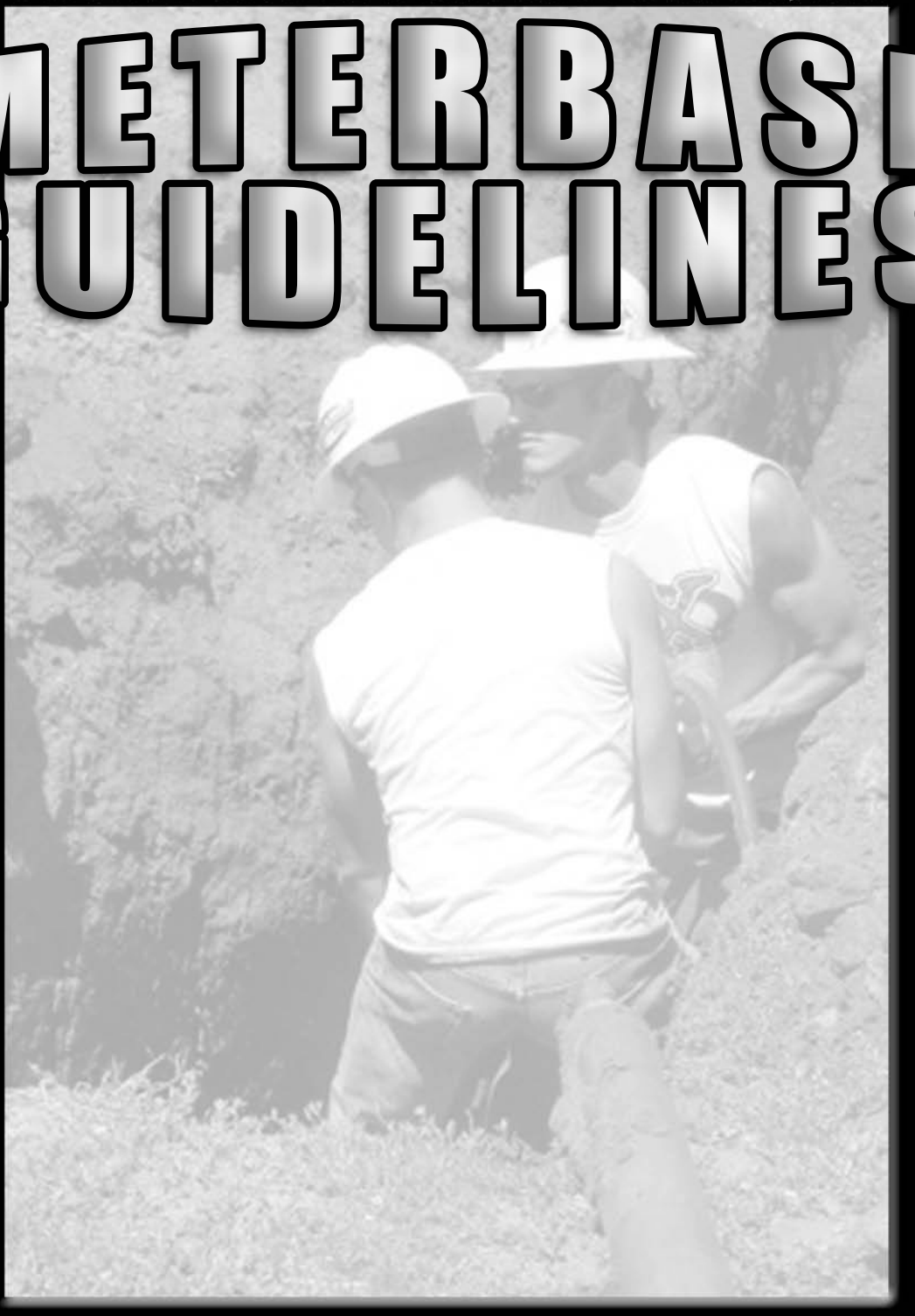
COPPER VALLEY ELECTRIC ASSOCIATION, INC.

METERBASE GUIDELINES



UNDERGROUND TO UNDERGROUND

New Service Installation Steps:

This is a step-by-step guide to the process CVEA will take to fulfill your service installation request. Please review the steps, familiarize yourself with the key milestones of the process, and identify common issues that can arise. We look forward to providing you with a new service. If you have any questions, concerns, or comments about the process, please call the CVEA Glennallen office at (907) 822-3211 or the Valdez office at (907) 835-4301.

Step #1: Apply for Service

Please stop by one of CVEA's office buildings to complete an application for service. The applications can also be found at www.cvea.org. Please be sure to fill this document out as completely and specifically as possible to prevent any future delays. The Customer Service Representative (CSR) will put you in contact with the Field Services Representative (FSR) in order to meet you for a site visit.

Step #2: Complete a Site Visit

Once an application is complete, your request is forwarded directly to the Engineering Department. The FSR will set up a time to perform a site visit, usually within one week. The purpose of the visit will be to determine the best location for your meterbase, the most efficient direction to route the service, whether a standard offering is applicable, and where to set electrical equipment (i.e. poles, transformers, pedestals). It will also be determined whether locates from other utilities will be required. After the visit, the Engineering Department will provide you with an estimate within one to three days. If accepted, the estimate must be signed and returned to CVEA accompanied by payment or a loan application.

Step #3: Gathering Necessities

After the site visit, the FSR may need additional information from you. Additional fees, city inspections, and right-of-way easements may be requested. Also, permits may be needed from adjoining property owners, highway departments, or other entities. We will contact you by phone if more information is needed. Your service request cannot move beyond this step until you have installed your meterbase correctly and the requested information and payment have been received.

If a delay seems apparent in getting your service, please call the FSR for an update. When this step is completed, your work order gets forwarded to the Operations Manager.

Step #4: Installation of Service

The Operations Manager will issue your work order to a line crew that will install the service. Then the Operations Manager will contact you to schedule a time for construction. The time it takes to complete this step can vary. The construction will include all the equipment and structures presented to you by the FSR in step 2, with the possibility of some minor changes. The line crew will complete everything up to CVEA's side of the meterbase, but are not permitted to do any work to your side of the meterbase.

Common Slow Downs:

1. **Alaskan Weather** can hamper, or even cancel, the construction process. It is important to contact CVEA about a new service long before the winter months. We will do our best to give you an estimated date of completion. The date of completion is always subject to change.
2. Be sure to have your **meterbase correctly installed** prior to the construction date.
3. If in Valdez, be sure that the city **inspects** your meterbase prior to the construction date.
4. **Right-of-way easements** are often required in order to begin construction. This will require you to provide a recorded deed to the Engineering Department. After the information is received, CVEA will require you to sign the easement in the presence of a notary. Notaries are available, free of charge, at both CVEA offices (call in advance to make sure a notary is available).
5. Make sure that your application for service is completed with current and accurate **contact information**. Communication is essential in assuring the process moves forward.

Other Possible Steps:

1. If you are requesting **temporary service for new construction,** your lot needs to be cleared and the structures need to be clearly staked. Also, the temporary meterbase will need to be properly installed and possibly inspected. A CVEA representative will perform a site visit before the temporary service is activated.
2. If you are requesting to change from an existing **temporary service to a permanent service** you should immediately have all inspections completed. A site visit will be required by CVEA to approve meterbase location. Be sure to do this step before pouring any concrete between the temporary service and the permanent service areas. A new application is not required, but you should notify CVEA when the work is ready to be completed.
3. **Mobile home lots** should be graded and the mobile home set up before installation of service. If this is not possible then the location should be staked off, indicating the four corners of the structure. You should also indicate where you want the meter post to be located. The meter post must meet CVEA specifications. In some instances, double wide mobile homes may have the meterbase installed directly to the home. To inquire about service to a mobile home, please contact the Engineering Department.

Notes:

1. Meter locations need to be approved by CVEA's Engineering Department.
2. In addition to CVEA's requirements, the installation must meet all current National Electric Code requirements and any other state or local codes.

<u>UNDERGROUND GUIDELINES</u>

100-200 Amp Single-Phase

A. The individual homeowner may provide their own trench and backfill on the property in order to reduce the cost of the line extension. If the owner provides a trench in frozen ground, dry sand will be required to protect the cable from frozen earth backfill. (Note: telephone, power and cable television lines man **<u>NOT</u>** be installed in the same conduit, but may be installed in the same ditch provided the utilities agree to the joint trench.)

   It is the responsibility of the consumer to obtain underground facility locates from the utility companies prior to trenching.

   Note: *Meters will not be energized until consumer dug trenches are backfilled properly.*

B. Unusual conditions may require additional materials such as rigid conduit under roads and driveways.

C. CVEA will furnish the service cable from the transformer to the meter socket. *The CVEA connection is always to the top jaws of the meter socket.*

D. Any riser shall be 2" rigid conduit or approved equivalent from 12" below the ground line to 10' above the ground; beyond 10', the riser may be galvanized rigid steel or intermediate metal conduit securely fastened to the pole or building. The riser shall have a plastic hub installed at the base of the conduit, a minimum on 12" below final grade.

E. At the point where the conduit enters the meter base, a standard locknut may be used. A grounding bushing must be used and must be connected to the neutral bus by means of a #6 AWG (minimum) bare solid copper ground wire jumper.

F. A consumer may install the meterbase on a post remote from the building. For the protection of the meter base, it must be located near existing facilities. There are two choices for determining the location of the remote meter base:

   1. Approximately 10' from the CVEA transformer or secondary pedestal, with the exact location to be specified by CVEA personnel. It may not be located within the utility easement.

   2. Not more than 10' from the building. The remote meter base is considered a permanent installation and any future changes in service location will be paid for the consumer.

   NOTE: *The consumer owns and maintains the wiring from the remote meter base to the consumer's facilities.*

G. CVEA recommends not extending underground secondary service more than 150 feet as there may be excessive voltage drop beyond this length.

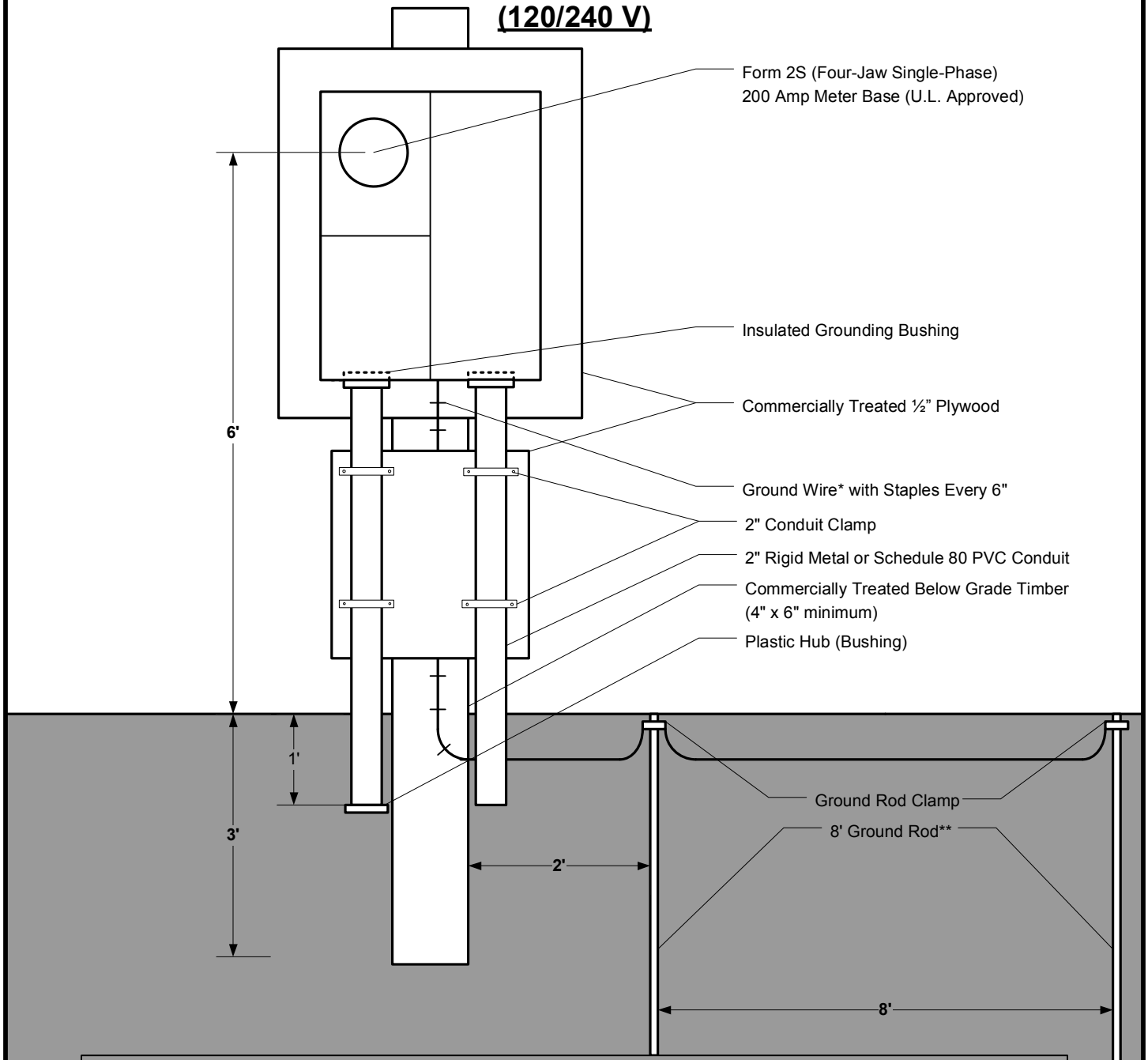
H. **CAUTION:** The consumer may not trench within the dedicated public utility easement since it may conflict with existing or future CVEA installations or other utilities. Any damage done to CVEA cables by the consumer or consumer's contractors, or any damage done to the consumer's cable by CVEA as a result of being buried within the easement, shall be at the consumer's expense.

Service routing will be determined by CVEA. Whenever practical, the most direct route between CVEA's riser pole, padmount transformer, or secondary pedestal to the consumer's meter base will be selected. If CVEA is to dig the trench, the service route must be cleared of all brush, stumps, and debris to a width of 15 feet by the consumer, and the ground surface must be brought to near final grade prior to the trenching.

Copper Valley Electric Association, Inc.
P.O. Box 927 Valdez, AK 99686
907-835-4301 (Phone) 907-835-4328 (Fax)

Engineering Department

SINGLE-PHASE SERVICE 200 AMPS or Less (120/240 V)



*Size of **Ground Wire** shall be #6 A.W.G. solid copper (minimum).
Size of **Ground Rod shall be 5/8" x 8' (minimum).

DIAGRAM NOT TO SCALE

UNDERGROUND SERVICE TO REMOTE METER BASE DIMENSIONAL DIAGRAM

REVISION 11-15-2007

Copper Valley Electric Association, Inc. ~ P.O. Box 927 Valdez, AK 99686 ~ 907-835-4301 (Phone) 907-835-4328 (Fax) ~ Engineering Department

UNDERGROUND METERBASE ASSEMBLY INSTRUCTIONS

Note: It may be preferable to assemble the meterbase on the ground, then attach it to the meter pole.

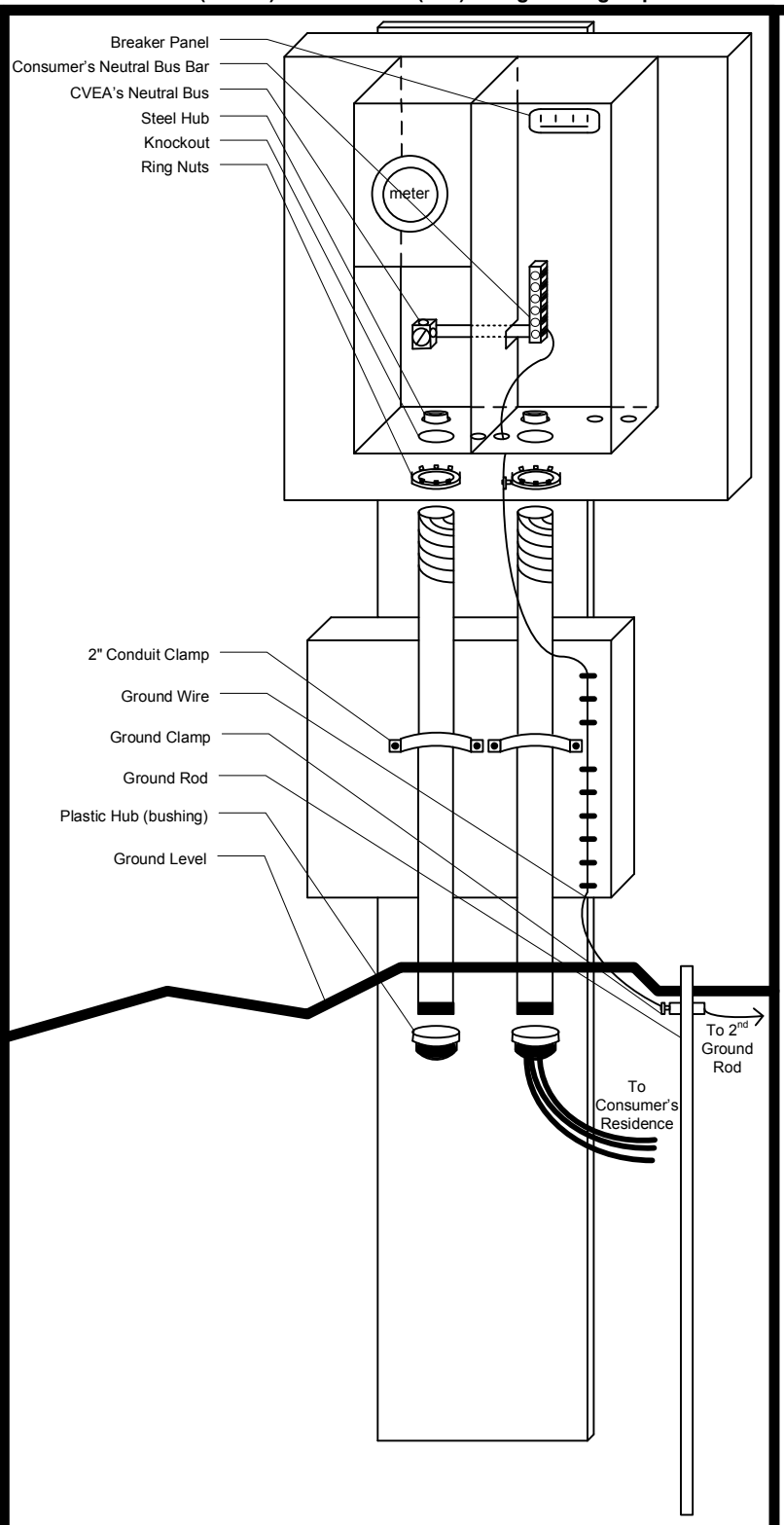
1. Remove the two 2" riser knockouts on the bottom of the meterbase. Remove the one small knockout on the bottom right side (consumer's side) of the meterbase. (This is for the ground wire installation.)
2. Thread the steel hub on the 6' steel riser before inserting it into the meterbase, then insert the riser into the knockout hole, and tighten it down with the 2" ring nut. Thread the 2" plastic hub on the bottom of the 6' riser. Repeat the same procedure for the second riser conduit.
3. Go to the wiring diagram to complete the meterbase wiring.
4. Secure the commercially treated plywood to the commercially treated 4" x 6" x 10' post with lag screws.
5. Install the assembled meterbase on the commercially treated plywood with lag screws.
6. Fasten the risers to the meter pole by using the 2" conduit clamps and lag screws.

Note: You may need to install a commercially treated wood spacer between the back of the riser and the 4" x 6" x 10'. Add them as necessary.

7. Install the ground rods 8' away from each other, and 2' away from any structures, and attach the ground rod clamps and ground wire to them (see wiring diagram).

8. CVEA's crew will set the assembled meter pole and meterbase when your service is installed.

Note: The consumer's conductors may be run in after the CVEA service is installed. Services in Valdez shall be inspected by the City prior to CVEA service installation.



UNDERGROUND TO UNDERGROUND METER WIRING GUIDE

REVISED 2008

UNDERGROUND METER BASE WIRING DIAGRAM

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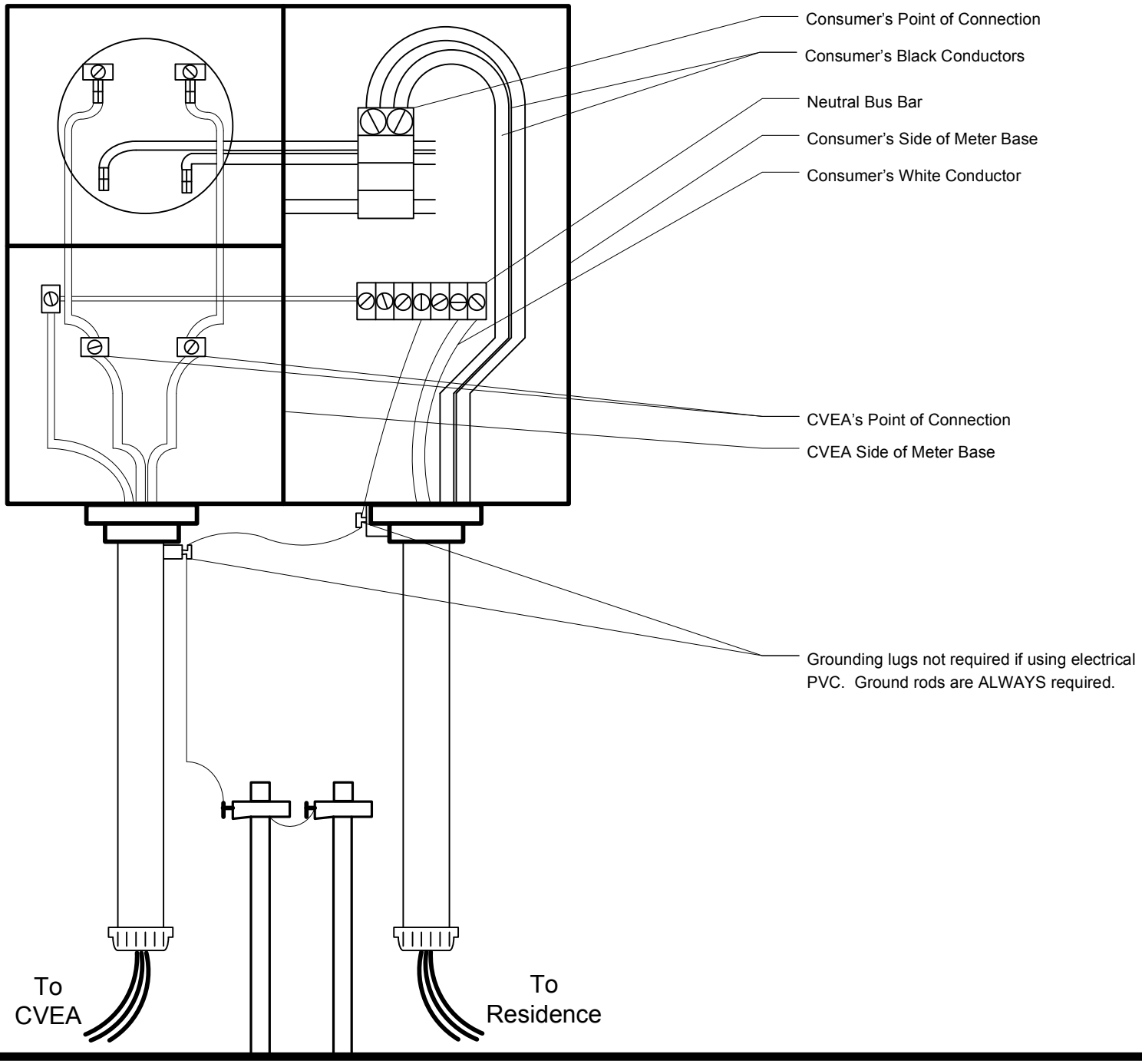
To install the conductors to the breaker switch in the meter base:
Note: If using aluminum conductors, apply corrosion inhibitor to ends of wire prior to installation.
1. Take the 2 black conductors and place them in the breaker lugs, and tighten them down.
2. Take the white (or black and white striped) conductor and place it in the neutral bus bar, and tighten down the lug.
3. Insert the bare copper ground wire through the grounding hub connection on the CVEA side. Next, pull the bare copper wire through and insert it through the grounding hub connection on the consumer's side of the meter base. Then run the ground wire through the knockout hole and into the neural bus bar. (This must be done in one continuous run with no splices). Insert the other end of the ground wire into the ground rod clamp and connect it to the first ground rod. Run the ground wire to the second ground rod and tighten down on the ground rod clamp. Remember to leave enough slack in the ground wire to staple it to the meter base pole. Tighten all grounding lugs and ground rod clamps.

Note: If located in Valdez, the meter base shall be inspected by the City prior to CVEA's service installation.



Parts List For Underground To Underground Service

NOTE: Parts list is provided as a consumer aid to identify required parts.

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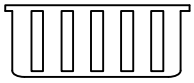
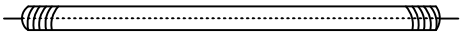
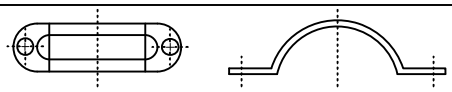
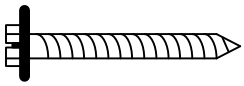
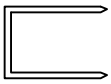
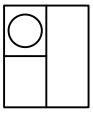
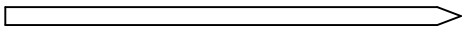
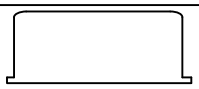
Check if needed	Cost	Item	Description
1._____(2)	$_____		Plastic Hub for bottom of 2" riser conduit
2._____(2)	$_____		6' of 2" rigid steel galvanized or schedule 80 PVC
3._____(4)	$_____		2" Conduit Clamps
4._____(11)	$_____		Lag Screw for conduit clamps / meter base
5._____(10)	$_____		Ground Wire Staples
6._____(1)	$_____		U.L. Approved Meter Base
7._____(1)	$_____		Main Breaker sized for service conductor (See conductor sizes listed below)
8._____(2)	$_____		5/8" x 8' Copper Clad Steel Ground Rod
9._____(2)	$_____		Ground Rod Clamp
11._____(1)	$_____		20' #4 Bare Solid Copper Ground Wire
12._____(1)	$_____		Steel Hub for service entrance riser (Not required if using electrical PVC)
13._____(1)	$_____		Ring Nut for 2" Conduit with Grounding Lug
14._____(1)	$_____		Tube of Corrosion Inhibitor (Not required if using copper service conductors)

FEEDER AND SERVICE ENTRANCE CONDUCTOR SIZES

SERVICE AMPACITY (Breaker Size)	ALUMINUM (AWG)	COPPER (AWG)
100 Amp	2	4
125 Amp	1/0	2
175 Amp	3/0	1/0
200 Amp	4/0	2/0
400 Amp or Greater	(See Engineering Dept.)	(See Engineering Dept.)

Updated
11-15-2007