

ORCAS POWER & LIGHT COOPERATIVE
METER AND METERBASE SPECIFICATIONS

***CAUTION: Improper handling of a meter is not safe.
Removal of an installed meter does not always
de-energize a service entrance.***

Meter location is subject to OPALCO's approval.

Meterbases shall not be used as splice or pull boxes and shall not be slugged.

The member or the contractor will be held liable for any personal injury or property damage if inadequate installation notice or information was given to the OPALCO, or if meter location approval by OPALCO was not granted.

Members or contractors are not authorized to relocate or remove any meter belonging to OPALCO or interfere in any way with the meter or its connection. The member must contact OPALCO for any work that involves relocation, rewiring, removal or installation of a meter.

All secondary installations extending from OPALCO transformer location shall be feed underground, and shall meet all state and local codes, and OPALCO specifications prior to connection.

If installation is along the county road rights-of-way, the member must secure the proper county permits. Notification and compliance is required by the San Juan County Public Works Department.

If a service has been removed due to abandonment, or has been removed at the members request for a period considered to be abandonment, it must be upgraded to current OPALCO requirement before service is re-established. However, if a facility becomes unsafe, the member may be disconnected for safety reasons and the service may then be subject to re-establishment requirements.

OPALCO does not allow temporary meterbase installations.

Meters will not be installed unless the service conductor connections are tight and conform with the wiring diagram for the class of service involved. Where large conductors are connected to terminals in box or trough-type sockets, meters will not be installed if conductors are placing undue strain on the terminal facilities. Terminals are rated for the size of conductor to be used. Do not remove strands to make conductors fit undersized terminals.

Arrange entrance wiring so that metered circuits do not enter raceways or enclosures containing un-metered circuits.

All meterbases must be self supporting on supports made of uni-strut metal, and shall be set in a minimum of 80 pounds of concrete. Meterbases shall not be mounted on or attached to wooden post or timber.

All equipment is to be installed per electrical codes with proper permits and inspections.

An electrical inspector must approve and tag the installation prior to OPALCO installing a meter and connection wires.

Single-phase meterbases 400 amps and under and three-phase 200 amps and under shall be approved by OPALCO's Engineering Department and shall have a single service-disconnect that includes over-current protection. Current Transformer (CT) meterbase installation will require a separate member supplied single service-disconnect that includes over-current protection, which is located within 2 ft of CT enclosure.

All meterbase, enclosures, and conduit must be bonded and grounded in accordance with Articles 230 and 250 of the latest edition of the NEC. NEC 250-84 requires two ground rods where a single ground electrode has a resistance over 25 ohms.

Sequence of service must be (1) meter, and (2) disconnect switch.

Meterbases which have been installed without approval shall not be connected.

For Rural Residential and Large-Lot Subdivisions, All Meterbases Will Be:

- installed at the transformer, as permanent and freestanding (see Figures 5 and 6) and shall maintain 36" of clearance from center of installed meter to finished grade.
- set in concrete and mounted plumb.
- mounted perpendicular to the transformer and behind the plane of access or service lid to the transformer.

For Small-Lot Subdivisions, Mobile Home Courts, Multi-Occupant and Commercial Building All Meterbases Will Be:

- installed at the transformer according to the criteria as stated for Rural Residential and Large Lot Subdivisions (above), or
- With pre-approval from the OPALCO's Engineering Department, it may be permissible to mount meterbase (s) on the building, however, the distance from the transformer to the location of the meterbase (s) may be no more than 100' and the appropriate sized conduit and conductor shall be installed. A single service-disconnect that includes over-current protection shall be required within two (2) feet of the meterbase.

All equipment beyond the point of delivery shall be owned and maintained by the member.

MULTIPLE METERING SERVICES (GANGED METERBASES)

Each metered service must have a permanently engraved metal or hard plastic label to identify the customer's address. The label must be permanently attached to the top half of the meter enclosure. The Service will not be energized until the label is permanently attached.

Vacant meter positions shall be factory sealed, or the meter shall be in position before the panel is energized.

All removable panels and covers to compartments used for metering shall be sealable.

Metering conductors shall not pass through adjacent metering compartments except in enclosed wireways.

NEC requires a main disconnect when more than six services are connected. If an existing installation expands beyond six services, a main disconnect shall be installed.

CONNECTING FROM AN OPALCO POLE-MOUNTED TRANSFORMER

The meterbase shall be mounted on a freestanding support no closer than 6 feet, but not more than 8 feet, from the face of the pole. Under no circumstance shall the meterbase be mounted on the pole.

All secondary risers extending from the meterbase to the pole mounted transformer shall be mounted on the pole with standoffs, supplied by OPALCO, that allow a minimum of 6" clearance from the conduit to the pole surface. Pole risers will be installed on OPALCO poles by OPALCO Operations personnel to assure proper placement.

POLE TAKEOFF METER INSTALLATION

NOTES:

1. INSTALL ALL EQUIPMENT PER ELECTRICAL CODES AND OBTAIN PROPER INSPECTIONS.
2. OBTAIN PROPER PERMITS FROM SAN JUAN COUNTY PUBLIC WORKS DEPARTMENT FOR ALL INSTALLATIONS ALONG COUNTY ROAD RIGHT OF WAY.
3. ALL METERBASE LOCATIONS SHALL BE SPECIFIED BY OPALCO'S ENGINEERING DEPARTMENT.
4. ALL METERBASES SHALL BE APPROVED BY OPALCO AND MUST HAVE A SINGLE SERVICE DISCONNECT THAT INCLUDES OVERCURRENT PROTECTION.
5. ALL METERBASES SHALL BE A MINIMUM OF 6 FEET AWAY FROM FACE OF POWER POLE, BUT NO MORE THAN 6 FEET FROM POWER POLE.
6. ALL METERBASES SHALL BE GROUNDED.

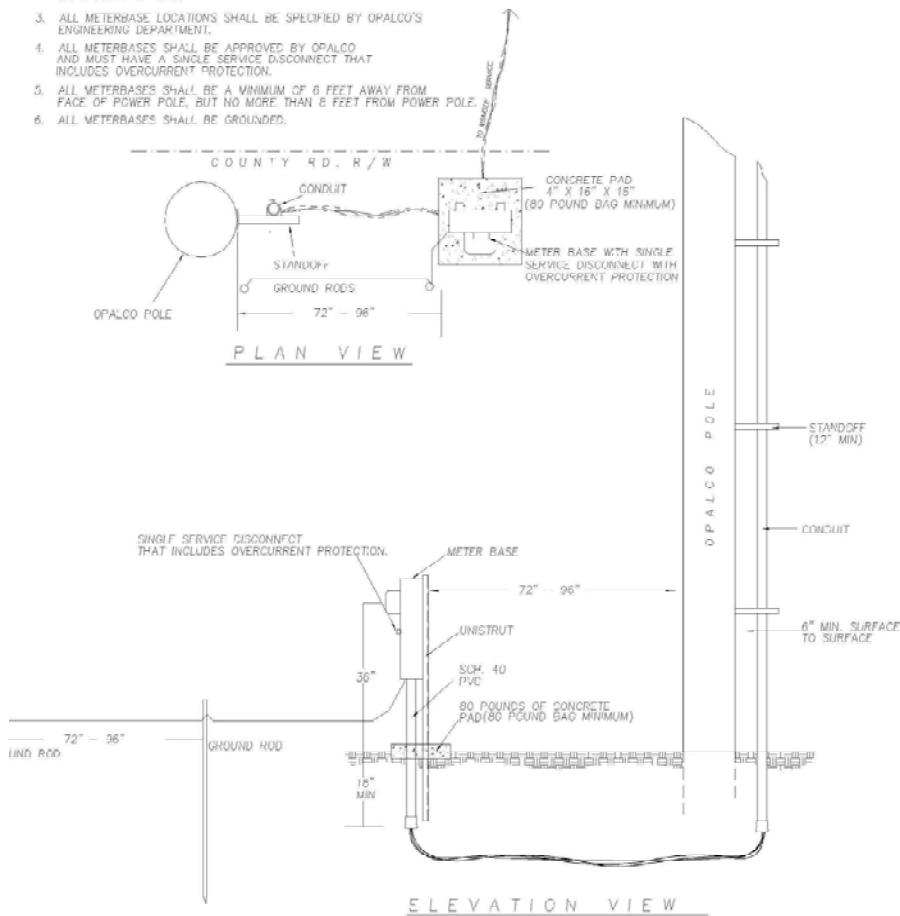


Figure 5 – Pole-Mount Transformer / Meter Installation

CONNECTING FROM AN OPALCO PAD-MOUNT TRANSFORMER

The meterbase for a residential installation shall be set no closer than 2’ and no further than 4’ from the transformer.

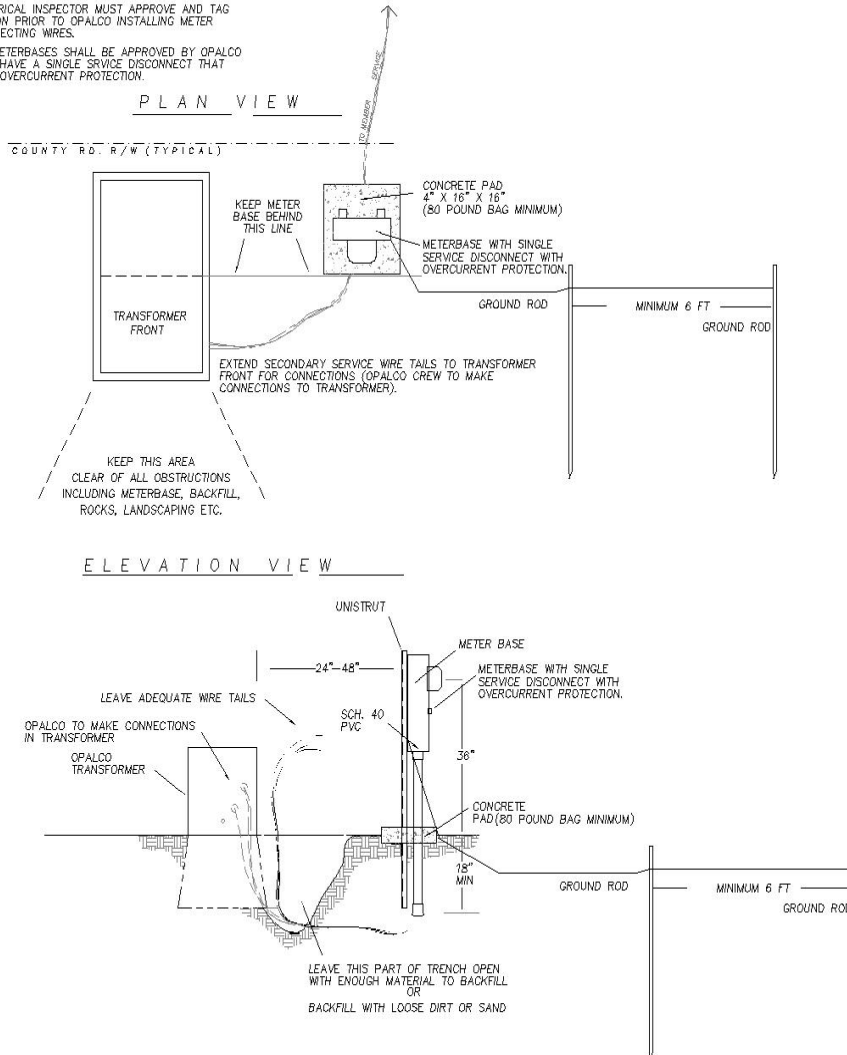
The secondary service tails shall be extended to the transformer, leaving adequate service wire for OPALCO to make the connections to the transformer.

All meterbases shall be approved through OPALCO’s Engineering Department and shall have a single service-disconnect that includes overcurrent protection.

U.G. TRANSFORMER METERBASE INSTALLATION

NOTES:

1. INSTALL ALL EQUIPMENT PER ELECTRICAL CODES AND OBTAIN PROPER INSPECTIONS.
2. OBTAIN PROPER PERMITS FROM SAN JUAN COUNTY PUBLIC WORKS DEPARTMENT FOR ALL INSTALLATIONS ALONG COUNTY ROAD RIGHT OF WAY.
3. ELECTRICAL INSPECTOR MUST APPROVE AND TAG INSTALLATION PRIOR TO OPALCO INSTALLING METER AND CONNECTING WIRES.
4. ALL METERBASES SHALL BE APPROVED BY OPALCO AND MUST HAVE A SINGLE SERVICE DISCONNECT THAT INCLUDES OVERCURRENT PROTECTION.



State of Washington Electrical permit must be applied for and inspection complete before contacting OPALCO for connection to transformer.

Figure 6 – Pad-Mount Transformer / Meter Installation

OPALCO APPROVED METERBASES

Single-Phase, 3 Wire, 120/240V

100 Amp

- MILBANK #U5100-XL
- SQUARE D #SC1624M-100S

200 Amp

- MILBANK #U3584-O-200
- MILBANK #U5198-XL-200S
- MILBANK #M400-UG-APS-LC
- MIDWEST #M281CB
- MIDWEST #M254CP6
- MIDWEST #M208CP6HP
- SQUARE D #SC816F200C
- SQUARE D #SC816F200S

400 Amp Service with One (1) 400 Amp Main Breaker

- MILBANK #M401-UG
- COOPER B-LINE #U404MC
- DURHAM HC364N4T (Specify 400 amp main)

400 Amp Service with Two (2) 200 Amp Main Breakers

- MILBANK #M400-UG-APS-LC
- SQUARE D #CU816D400CB
- COOPER B-LINE #U4042MC
- MIDWEST MS45508C
- DURHAM HC364N4T

Three-Phase, 4 Wire, 120/208V or 240/120V Delta

- SQUARE D #EZM3225TB
- SQUARE D #EZM3225TBCU
- MILBANK #U227MTB

Three-Phase, 4 Wire, 480/277V or 240/120V Delta

- MILBANK #U227MTB-48/22

CT METERBASES

All meterbases to be used in applications containing current transformers **shall have** "test switches" to provide for shunting of all current transformers upon removal of the electric meter. All such meter bases shall be clearly labeled:

CAUTION: Removal of a CT meter Does Not De-Energize the Circuit

Current transformer ratios will be selected by OPALCO based on information supplied by the member.

OPALCO reserves the right to change current transformers to provide metering accuracy.

Current transformer rated meter base's must be mounted within two (2) feet of the single service disconnect that includes over-current protection and shall be effectively grounded so as to pass L & I inspection.

The minimum conduit size for CT meter wiring is one inch.

The meter base may be attached directly to the side of the current transformer enclosure in free-standing applications; however, it must not impede the ability to open the current transformer cabinet cover.

All meterbases to be used in applications containing current transformers shall be of the "manual circuit closing with test block" type to provide for shunting all current transformers upon removal of electric meter.

***CURRENT TRANSFORMER METERING
STANDARD SINGLE-PHASE 600 AMP AND OVER,
AND THREE PHASE OVER 200 AMP***

Single-Phase, 3 Wire, 120/240V Current Transformer Metering

	<u>Manufacturer</u>	<u>Enclosure</u>	<u>Mounting Rack</u>
400 Amp:	MILBANK	#CT243611-SC	#K4903
	CIRCLE AW	#243611RTCT	#6019HAL
401-800 Amp:	MILBANK	#CT364811-HC	#K4729
	CIRCLE AW	#364811HRTCT	#6019HEL

3 Wire 120/208V Current Transformer Metering

	<u>Manufacturer</u>	<u>Enclosure</u>	<u>Mounting Rack</u>
400 Amp:	MILBANK	#CT243611-SC	#K4903
	CIRCLE AW	#243611RTCT	#6019HAL
401-800 Amp:	MILBANK	# CT304811-HC	#K4729
	CIRCLE AW	#304811HRTCT	#6019HEL

**Three-Phase, 4 Wire, 120/208V or 277/480V
Current Transformer Metering**

	<u>Manufacturer</u>	<u>Enclosure</u>	<u>Mounting Rack</u>
400 Amp:	MILBANK	#CT303611-HC	#K4904
	CIRCLE AW	#303611HRTCT	#6067HAL
401-800 Amp:	MILBANK	# CT304811-HC	#K4722
	CIRCLE AW	#304811HRTCT	#6067HEL

NOTES:

The member shall provide the CT enclosure, CT mounting rack, and the single service-disconnect with overcurrent protection. OPALCO will provide at, member's expense, the CT's, test switch, CT meterbase and meter.

CT ENCLOSURES must size per the NEC.

For more information, please contact the Engineering department at 360-376-3500.