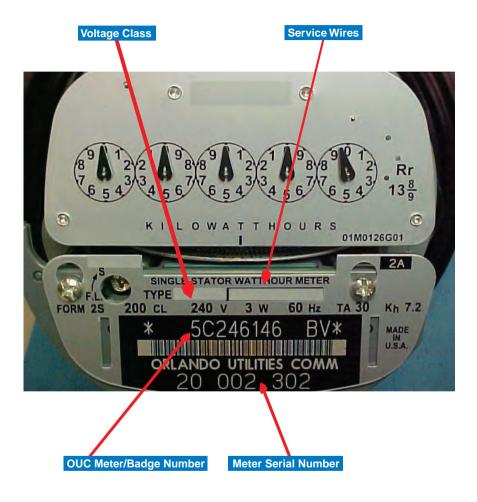


# Electric Service and Meter Installation Requirements



### **OUC Electric Meter**



## For Your Information

#### Please send revision suggestions to:

OUC-The Reliable One P. O. Box 3193 Orlando, FL 32802 Attn: MTRS Email: ilane@ouc.com

#### Send all plans and drawings to:

OUC-The Reliable One P. O. Box 3193 Orlando, FL 32802 Attn: Development Services

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## Introduction

This handbook is provided by OUC-The Reliable One as a guide for use by customers, electrical contractors, engineers, architects and local inspecting authorities. The specifications and procedures in this handbook are subject to change without notice. Therefore, communication between the user and OUC is essential in all circumstances. The following page provides the user with contacts within OUC.

If items in this handbook fall short of the most recent National Electrical Code (NEC) or local inspecting authority standards, the NEC and/or local standards will prevail. However, OUC reserves the right to exceed the NEC and local authority standards on installations that it serves.

Under no circumstances is compliance with the information contained within this handbook to relieve the user of his/her responsibility for compliance with all applicable codes or safety standards.

Electric service will not be energized until:

- 1. Specifications and requirements are met.
- A contract for electric service has been made. (Call OUC Customer Service at 407.423.9018)
- 3. The electric service has passed local authority inspection and OUC has been notified by that authority.

If OUC turns down the service (does not install meter), OUC will leave a door hanger onsite indicating the reason why a meter was not installed. The Owner/Contractor is required to fix installation issues.

## Initial Contacts and Communication

- At the onset of any new project, contact OUC Development Services, 407.236.9651. A site plan showing the proposed project layout, a landscaping plan, stormwater retention and the electric service requirements (E-plans which include load calculations, power and voltage requirements, size of service, riser diagram, etc.) is required. Additionally, for multi-tenant buildings, the building addresses and unit numbers are needed as early as possible. It is important that the addresses used for permits match the addresses for which the orders for service are placed. OUC's Electric Engineering, 407.434.4427, will review the site plan and service requirements to assess the availability and location of service. Contact them for any changes to an existing electric service. If necessary, the Owner/Contractor/Developer may be required to pay in advance if any extension of existing facilities is required. The costs will be determined as set forth in OUC's Administrative Policy Manual. As your project proceeds you can contact OUC's Development Service Representatives for any additional information you may require.
- Temporary electric service may be required during the construction of your project. The Owner/Contractor/Developer is required to have a temporary pole installed on site and have a UL approved meter base properly attached to the pole (see page 6). For concrete block, residential, detached homes our Temporary Underground Service (TUG) program is available. It is the responsibility of the Owner/Contractor/ Developer to request an electrical inspection from the City/County. Call OUC's Commercial Service Representatives, 407.423.9018, to place an application for the meter installation and account application. When the inspection clearance and application have been received, OUC will attempt to install a meter(s) within five (5) to seven (7) business days. (Note: three phase or CT service may require additional time for scheduling.) Deposits and/or connection fees are required to be paid prior to scheduling.
- Permanent electric service is the final electric service required to bring the building to completion for occupancy. Call OUC's Commercial Service Representatives, 407.423.9018, to establish the amount of security deposit required to be paid for the application of the permanent electric meter installation. It is the responsibility of the Owner/Contractor/Developer to request a final electrical inspection from the City/County. If OUC has not received an inspection clearance, services will not be energized and meters will not be set. The

City/County must be contacted to pursue the reason why a clearance was not received. When the final inspection clearance and application have been received by OUC Service Planning, OUC will attempt to install a meter(s) within five (5) to seven (7) business days. (Note: three phase service may require additional time for scheduling.)

- In order to schedule transformer stand-by or to energize a service after all requirements have been met, including inspection, contact OUC Underground Electric, 407.434.4111 or email standbyrequest@ouc.com.
   For services involving current transformers, call OUC Electric Operations, 407.434.4269, for any stand-by work or service changes. For a service change which requires OUC personnel after hours, additional overtime charges may apply.
- In order to schedule an appointment for meter installation in multitenant buildings, contact OUC Revenue Protection (see page 4). When the inspection clearance from the City/County and an application have been received, OUC will attempt to install meter(s) within three (3) business days after transformer(s) have been energized (see Underground Electric) provided the contractor has met all the requirements above. (Note: three phase service may require additional time for scheduling.) Inclement weather, emergency calls, exposed wiring or other conditions beyond OUC's control may cause delays. A representative for the Owner/Contractor/Developer must be on site to assist the OUC representative in verifying unit numbers and addresses. It is imperative that the meter bases are marked as stipulated on page 5. Additional trips to multi-tenant buildings will result in additional charges as set forth in OUC's Administrative Policy Manual.
- <u>Special Notice</u>: OUC now offers 400 amp services for single-phase residential services (320 amp socket meter w/bypass handle, no "K" base). For services 400 amps and less, OUC requires contractors in residential subdivisions to install the conduit from the transformer or junction box to the meter base.
- Conduit shall be used with the appropriate type ells and shall be buried a minimum of 36". Warning tape shall be installed above all buried conduits. Five (5) to seven (7) days notice is necessary for OUC to run the permanent service to the house. Grey electrical grade schedule 40 or 80 pvc conduit (5° chamfered edges) is the approved pipe for underground residential installations unless the electrical engineer indicates otherwise. Long radius galvanized bends are to be installed on primary conduit runs involving a bend. Heating the pvc pipe is not allowed for bending. All installation questions should be directed to your OUC project manager.

# Initial Contact Telephone Directory

#### **Development Services**

#### **Commercial Services**

Deposit, connection and service applications ......407.423.9018

#### **Electric Engineering**

#### **Electric Meter Shop**

Inquire if CTs can be picked up (no scheduling) ....407.434.4057

#### **Underground Electric**

#### **Revenue Protection**

Schedule meter installation in multi-tenant buildings
East of Orange Blossom Trail
West of Orange Blossom Trail
St. Cloud
Service Planning
OUConvenient Lighting
Street and private lighting
Inspection Authorities
City of Orlando
Orange County
City of St. Cloud
Osceola County
Sunshine State One-call

## Meter Base Requirements

- Meter bases are provided by the Customer/Contractor and shall be electrical grade, steel, UL listed and stickered, NEMA 3R, and have a maximum rating of 320 amps. Meter bases must have provision to accept an OUC lock or seal. Additionally, 320 amp bases must be on the Florida Meter Group (FMG) approved list. To reference the FMG list go to www.ouc.com, click on Commercial > Development Services > Forms & Documents > OUC Shortlist [PDF]."
- For all commercial services and services over 200 AMPS, contact Electric Engineering first.
- Meter bases are provided for transformer-rated (CT) services. Electric Metering must receive information from Electric Engineering (see above) to issue any equipment. Instrument transformer cabinets must be provided by the Customer/Contractor. See specific requirements for these services.
- Multi-gang meter bases for residential type installations (apartments, condos) shall have a ring type cover.
- Meter bases for commercial services and 320 single-phase residential services shall be provided with lever bypass handles.
- Meter bases shall include a neutral conductor (except multi-gang).
- For multiple meter bases, such as multiple occupancy buildings and mobile home parks, meter bases must be clearly and permanently marked with element resistant labeling indicating the floor, suite, apartment, room or building served by the meter. Permanent numbers must be located on or adjacent to unit doors. This marking is required before the service connection is made by OUC. Final unit number/address verification will be made when meters are set. The Owner/Contractor must be on site to assist with this task. The following methods meet the requirement for clear and permanent marking and are acceptable.
  - \* Metal plates, riveted or bonded to meter base, with engraved or stamped lettering.
  - \* Plastic plates, riveted or bonded to meter base, with engraved or stamped lettering.
  - \* Vinyl decals with permanent adhesive. Paper decals with nonpermanent adhesive will not be accepted.

Do not use paint or marking pens to label meter bases or plates attached to meter bases. The inside of the meter base shall be labeled with address or unit number with a permanent marker.

- Meter bases shall be surface mounted (do not recess) using the following approved fasteners:
  - \* Tap Conns
  - \* Lead Anchors
  - \* Toggle Bolts
  - \* 1/4" Nylon Nail-ins
  - \* ZINK Mushroom Head 1/4" Pin Drives
  - \* Screws (wood construction only)
  - \* Nylon Togglers (drywall construction only)
- Nails, shoot-in-nails, or plastic anchors are <u>unacceptable and not</u> <u>approved.</u>
- Meter bases must be attached to the structure in a quality fashion using good workmanship as to prevent binding or inoperability of the unit. Poor quality and workmanship can result in refusal of electric service.
- A clear space of 3 feet is required in front and to the side of all meters at all times. Please consult with OUC to avoid conflict with landscaping projects.
- Do not wire through the back of the meter socket.
- Use the provided conduit knockouts only.

# Additional Requirements

The Customer/Contractor must provide OUC with a suitable point of attachment for the electric service cable as required by the NEC. This point of attachment must be sufficient to allow proper cable clearance as stipulated by NEC/NESC as well as proper strength to support the cable weight. Shoot-in fasteners or plastic anchors should not be used. Insufficient points of attachment must be relocated and/or replaced at Customer/Contractor expense.

## Service Entrance Specifications for Commercial Services Over 200 AMPS and Single Phase Residential Services Over 400 AMPS (CT Required)

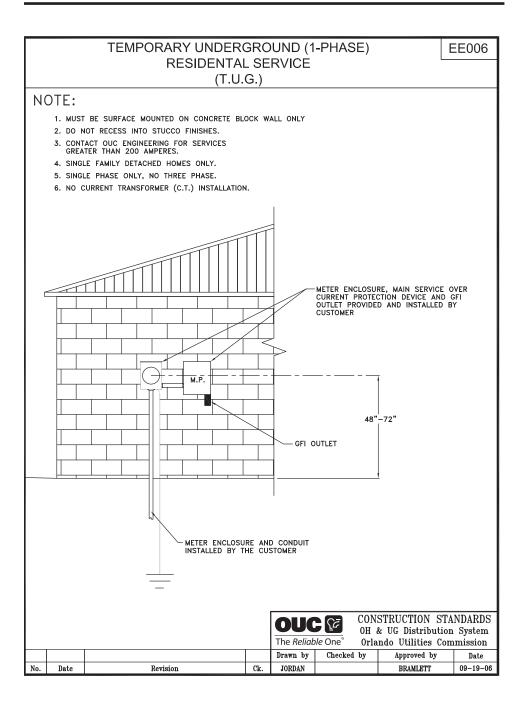
- 1. Contact your OUC project engineer prior to construction for approval of the location of the meter base, current transformers (CTs), CT cabinet and conduit size/routing; and allowable conductor size. The OUC Project Engineer will need information to fill out a Service & Metering Information form. This form will be sent to Electric Metering so that CT equipment may be picked up by the customer/contractor. See page 5 for further meter base requirements.
- 2. All material shall be electrical grade and UL listed and must conform to National Electrical Code (NEC), local requirements and OUC specifications.
- 3. The meter base and CTs will be supplied by OUC and installed by Customer/Contractor. Meter base must be grounded with #4 solid copper to the service grounding electrode conductor and must be externally visible (do not place in service or metering conduit or raceway). Meter ground wire shall be secured sufficiently with straps and lag screws.
- 4. Meter base to be surface mounted (**do not recess**). Use the provided knockouts only. Do not mount meter base with shoot-in fasteners or plastic anchors.
- 5. CT cabinet to be supplied and installed by customer/contractor. Cabinet size must conform to current NEC requirements. CT cabinet shall be Hoffman number A20R208HCR, A24R248HCR, A303012CTCJ, A363614CTCJ, or equal. Equivalents shall be approved by Electric Metering. CT Cabinets are for service entrance conductors ONLY and shall include a neutral conductor. For outside installations, a sealing type lock nut shall be used for conduits entering the top or sides of CT cabinet. No other circuits of any kind will be allowed.
- 6. Customer/contractor to supply and install a 1" to 1 1/2" conduit from CTs to meter base. Meter conduit shall be IMC rigid metallic or better above ground and PVC underground. Conduit shall be strapped sufficiently with 2 hole straps and lag screws. Conduit to enter the side or bottom of meter base. Use the provided knockouts only. No junction boxes are allowed in the conduit run nor splicing in the CT cabinet. The

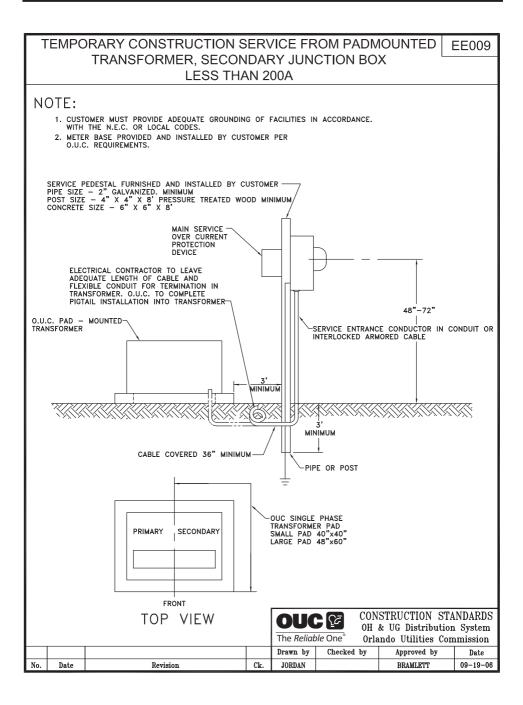
distance from CT's to the meter should be kept under 40 linear feet. Exceptions must be approved by OUC project engineer and electric metering.

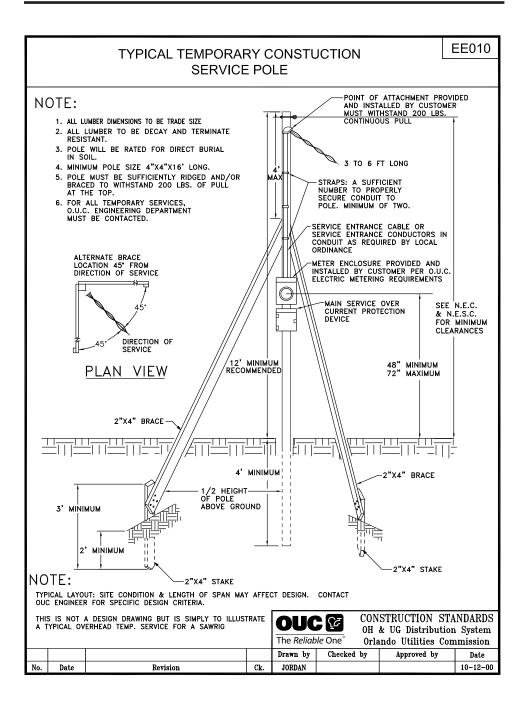
- 7. CT polarity mark (dot or HI) shall face towards line feeding service (towards OUC). See additional drawing for wiring CT for single phase service. For 3 phase delta services, mount "high leg" CT at furthest right or bottom position. No exceptions.
- 8. On transformers with bushing CTs, Customer/Contractor shall not land secondaries until CTs have been installed. Coordinate with your OUC project engineer.
- 9. Customer/Contractor shall supply and install service entrance conductors from main panel through CT and/or weatherhead. Length of conductors out of weatherhead or CT to be determined by OUC Project Engineer and Electric Metering. Conductors must be color marked on the line side of the CT.
- **10.** CTs will not be permitted in customer switchgear unless approved by OUC project engineer and electric metering. If approved, CTs must be located in a separate compartment designated for OUC metering only and the compartment must be OUC lockable.
- **11.** Mount lightning arresters no more than 8" from weatherhead.
- **12.** If installation does not conform to OUC specifications, the Customer/Contractor will be required to relocate or replace it at their expense.
- **13.** Customer/Contractor shall install phone line conduit from meter area to customer's phone room for all single services with transformers 500kva and larger. (See spec drawing on page 43.)
- **14.** CTs located inside a building must comply with all NEC rules regarding location of the cabinet.

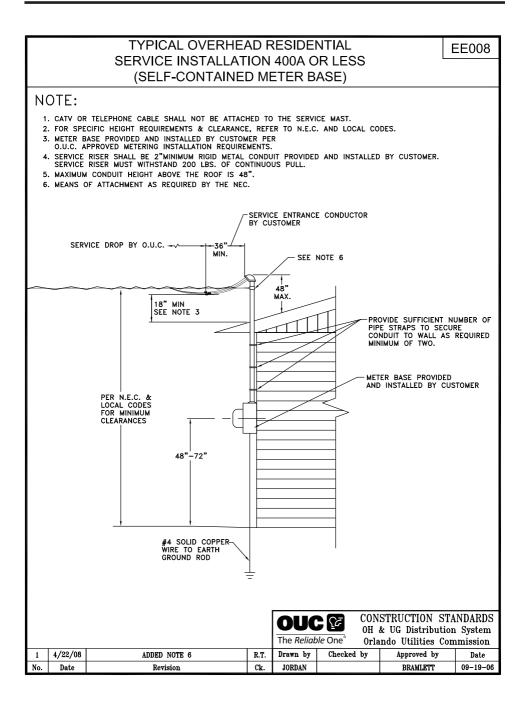
Electric Service Will Not Be Energized Until:

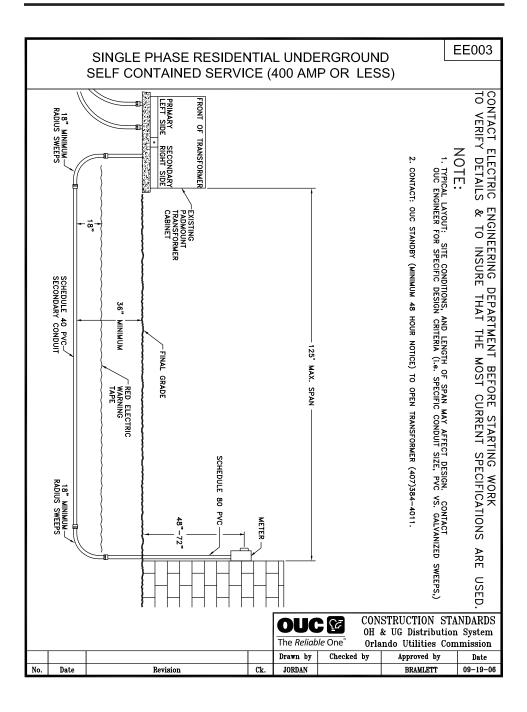
- Specifications and requirements are met.
- A contract for electric service has been made. (Call Customer Service.)
- The electric service has passed local authority inspection and OUC has been notified by that authority.

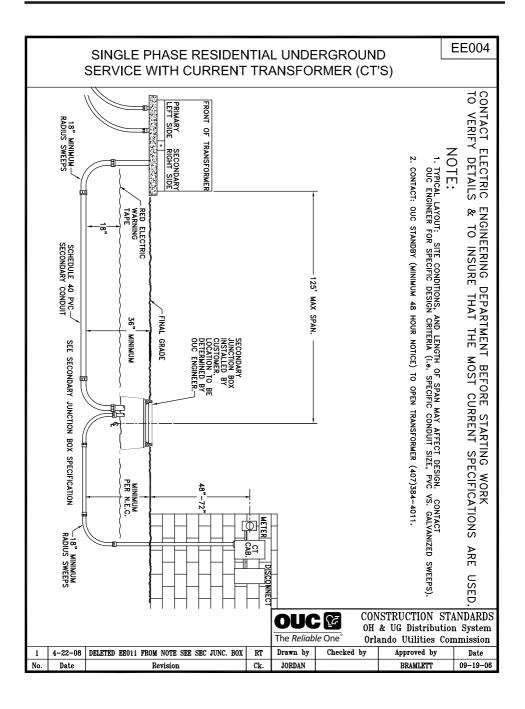


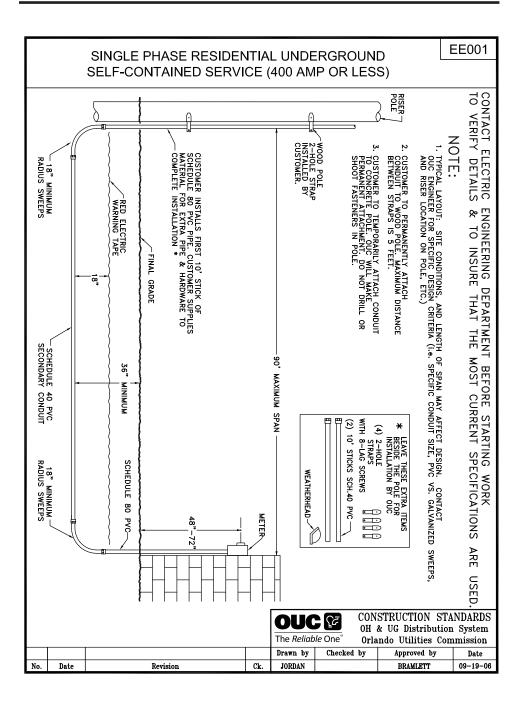


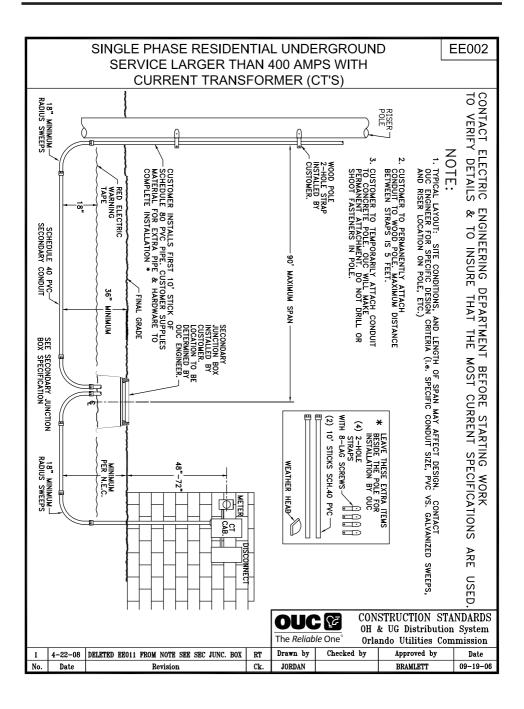


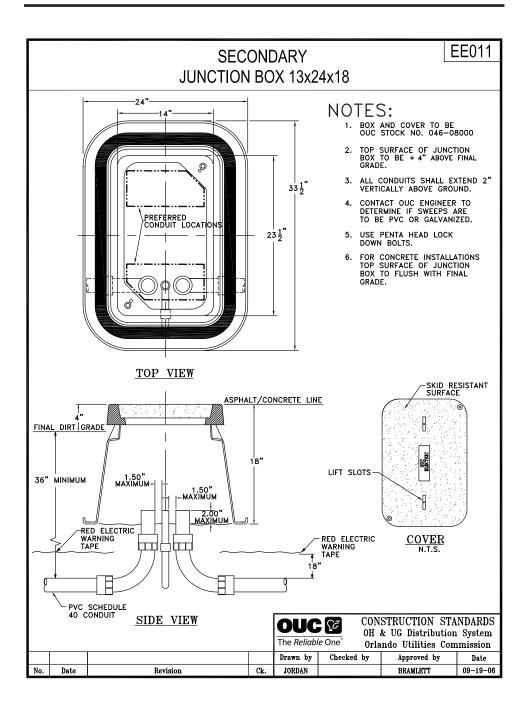


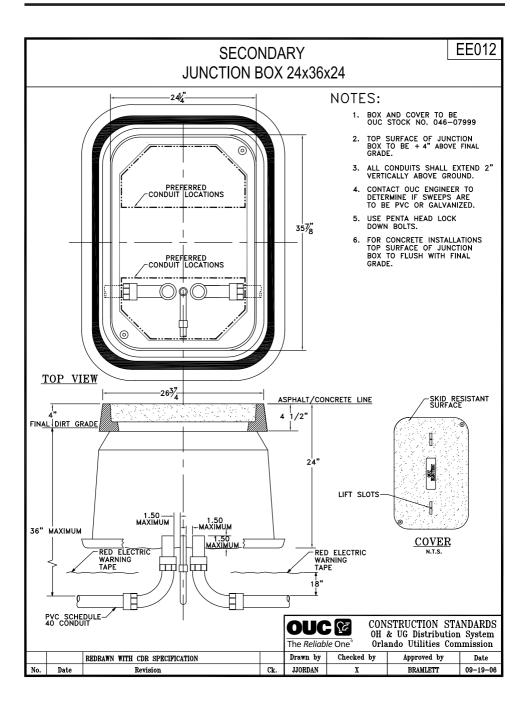


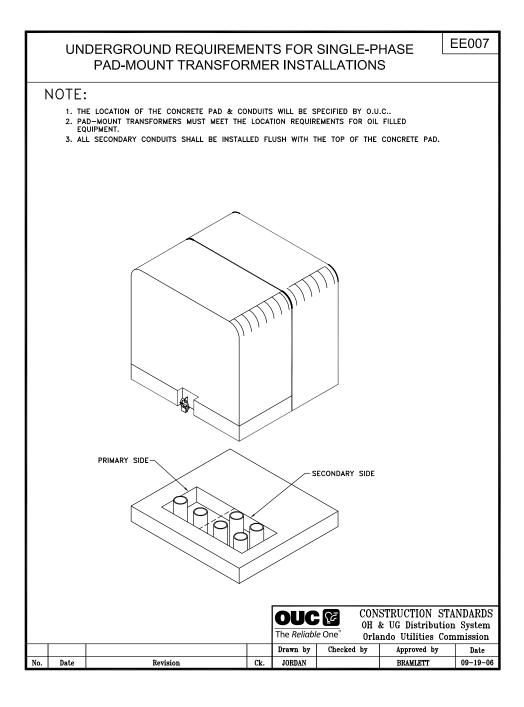


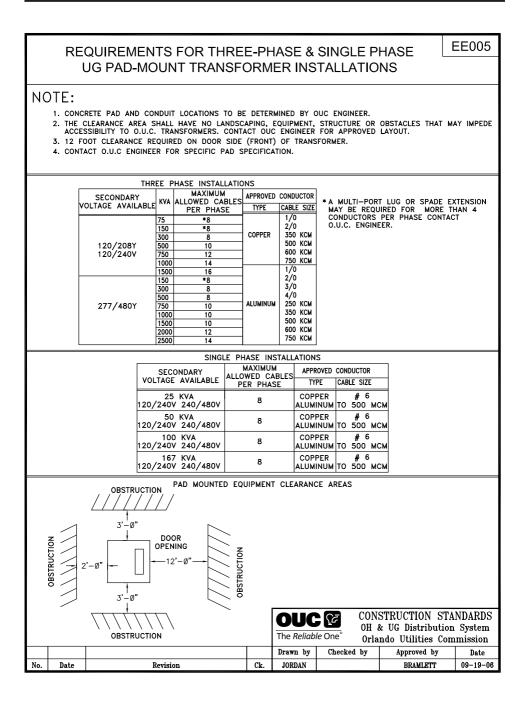


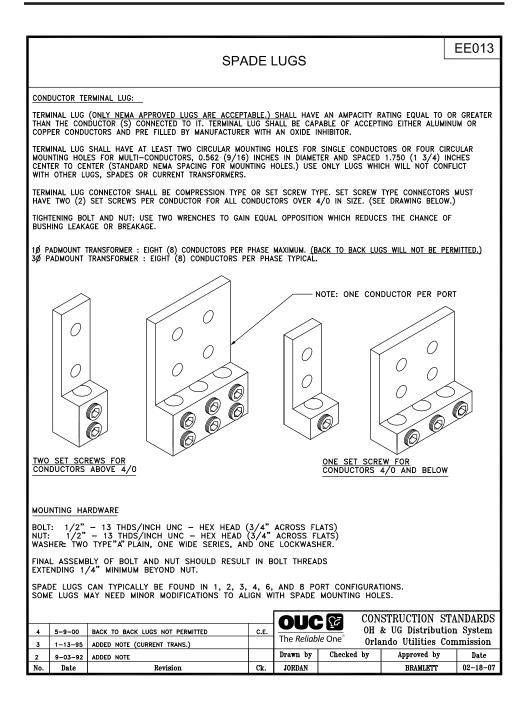


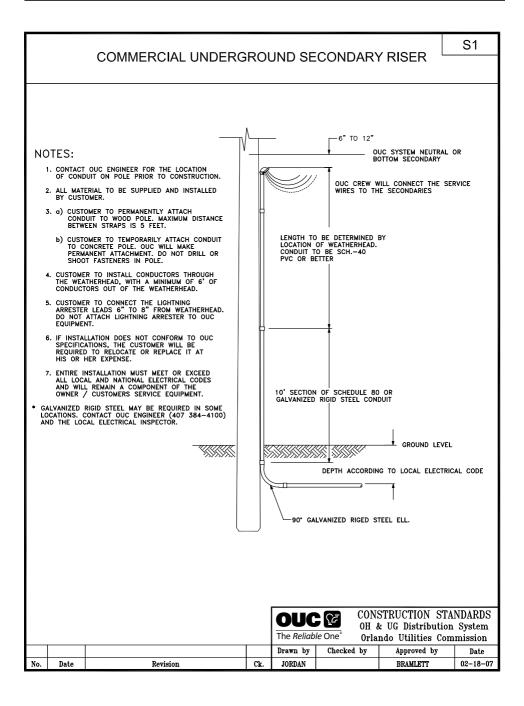












Service Size	Phases	Installation Type	OUC Meter Network	OUC Meter Traditional	Drawing
100A	1	2 Wire 120V OH	3AR	3A	M1
	1	3 Wire 120/240v OH	5CR	5C	M2
200A	1	3 Wire 120/240v	5CR	5C/5CM	M3, 4
	1	3 Wire 120/208v Network*	5XR	5X	M5
	1	3 Wire 240/480	5CM (node)	5CV	M12
	1	3 Wire 277/480	Go to 3 Phase	N/A	N/A
200A	3	4 Wire 120/208v Y	5ZR	5ZM	M6
	3	4 Wire 120/240v Delta			M6
	3	4 Wire 277/480v			M13
	3	4 Wire 240/480v Delta			M13
>200A	1	3 Wire 120/240v Commercial	1JR	1JM	M11
	1	3 Wire 120/208v	Go to 3 Phase	N/A	
	1	3 Wire 240/480v	1JR w/PT	1JM 120v w/PT	M11
	1	3 Wire 277/480v	N/A	N/A	N/A
400A	1	3 Wire 120/240v Residential	5CE	5CE	M15
>200A	3	4 Wire 120/208v Y			
	3	4 Wire 120/240v Delta	1ZR	1ZM	M7 - M9
	3	4 Wire 277/480v			
	3	4 Wire 240/480v Delta			

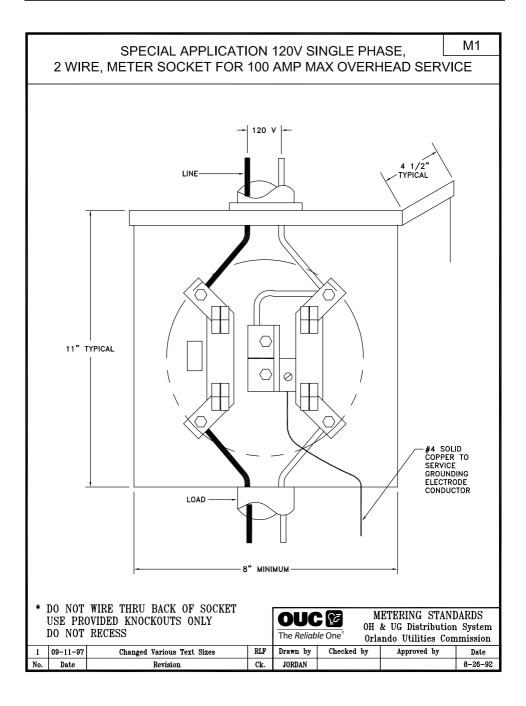
#### INDEX FOR METER BASE INSTALLATIONS

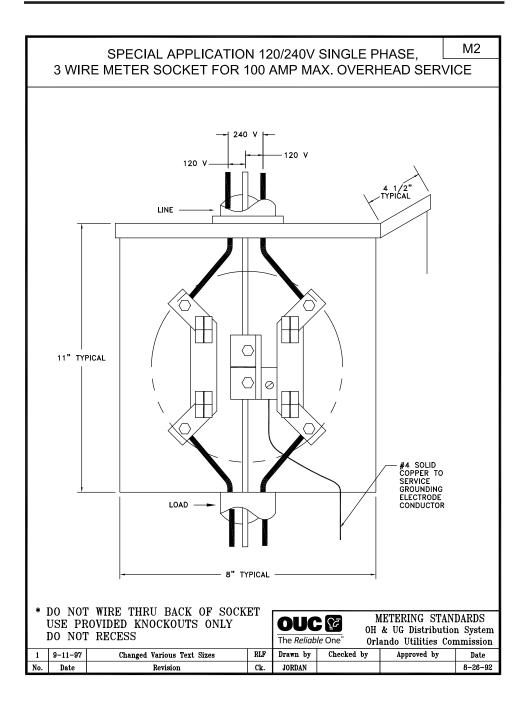
\* Contractor must install 5th terminal in meter base NOTE FOR OUC:

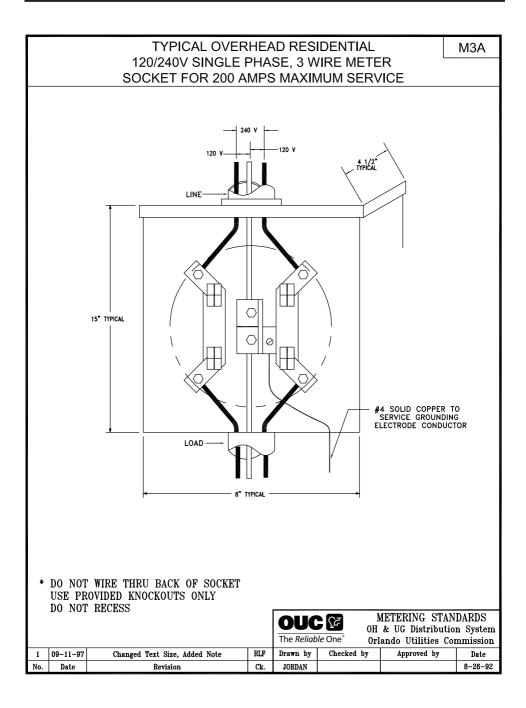
1XM, 1YM, 1SM, 1UM meters get replaced with 1ZR meters

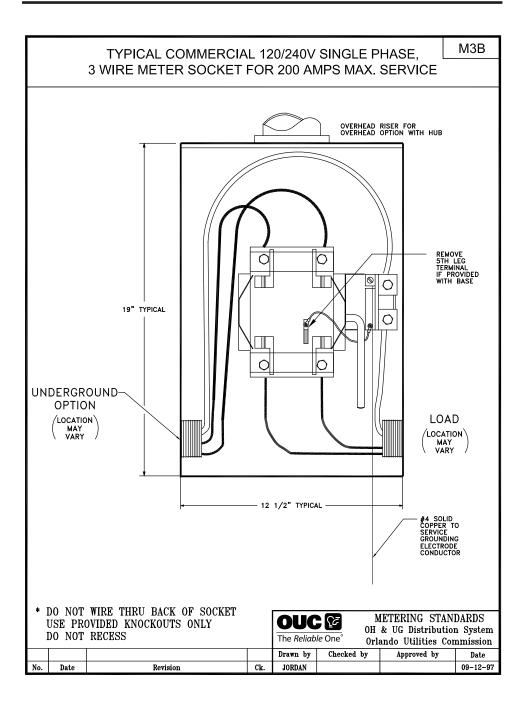
1WM, and 1TM meters get replaced with 1ZR after meter base wiring modifications 5WM, 5TM, 5UM get replaced with 5ZR  $\,$ 

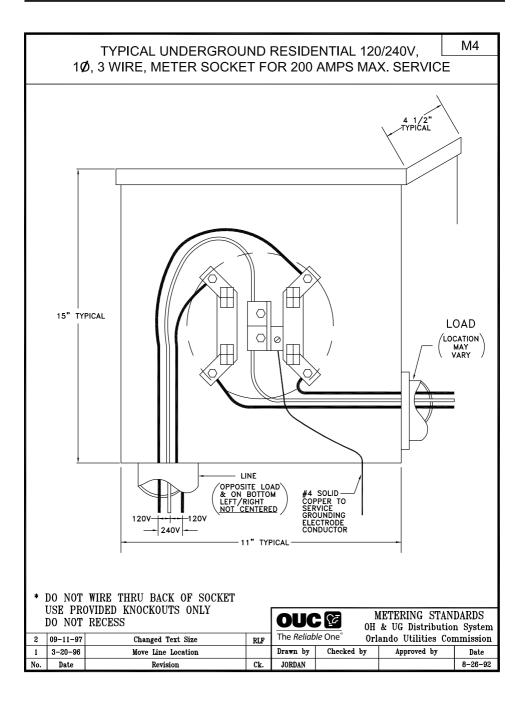
5CD & 5XD meters are identical to 5CR and 5XR except with an internal disconnect

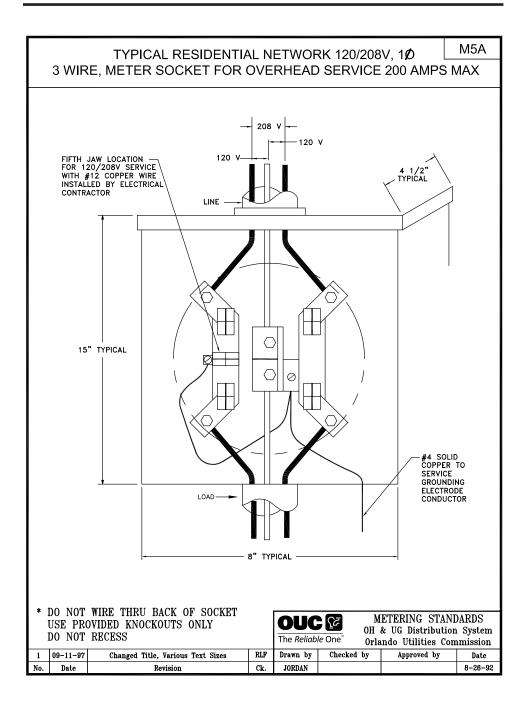


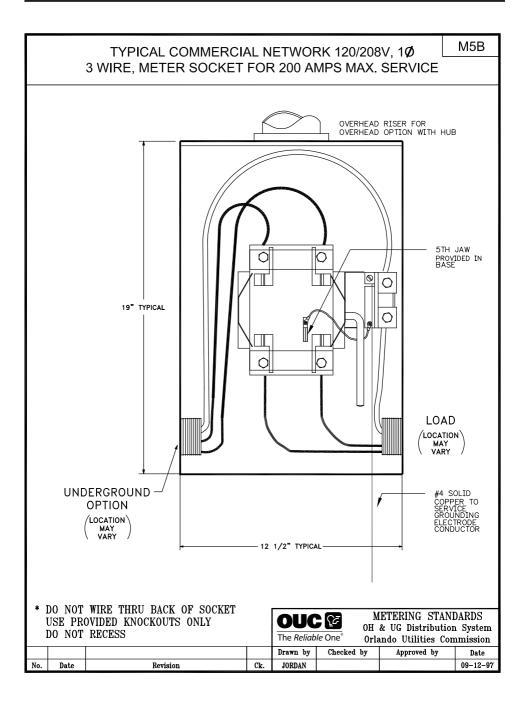


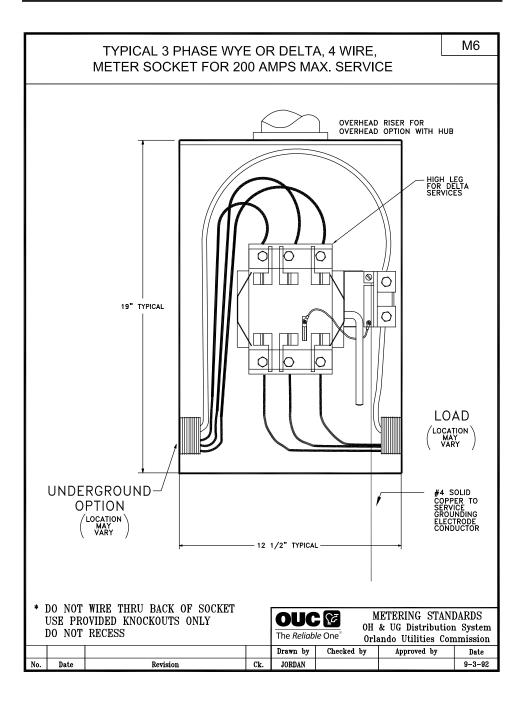


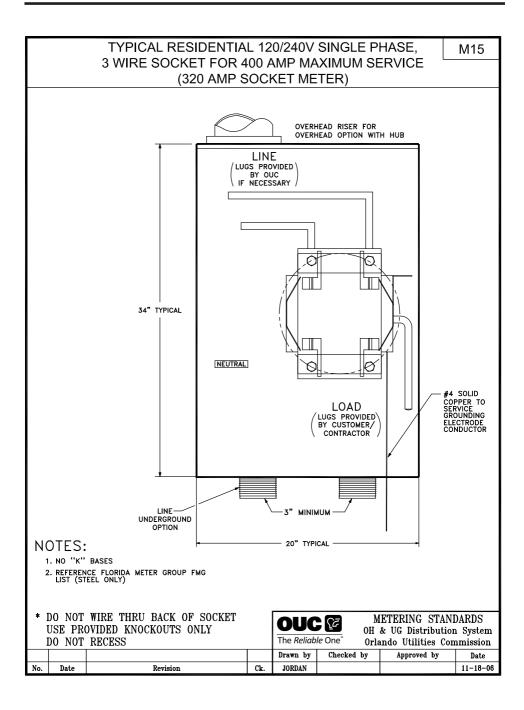


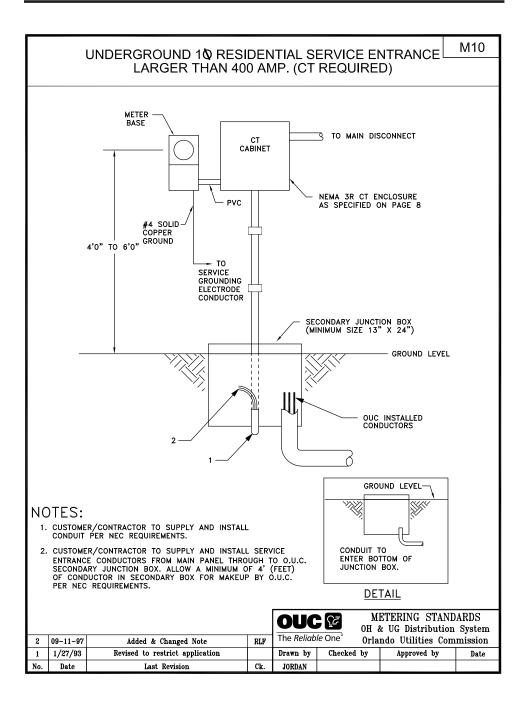


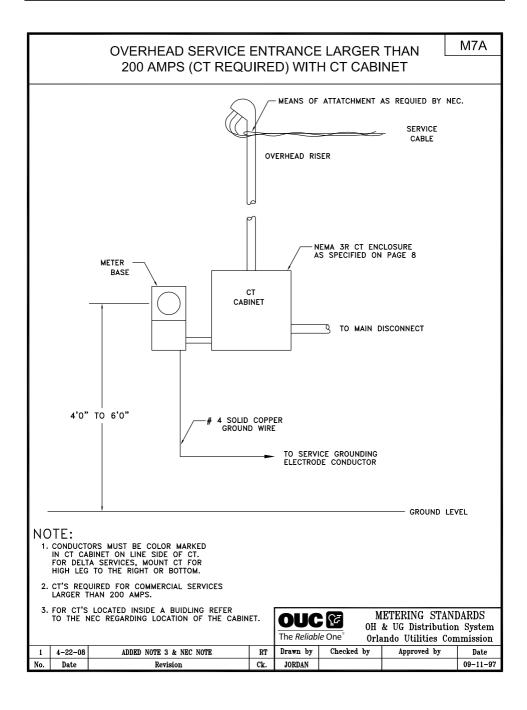


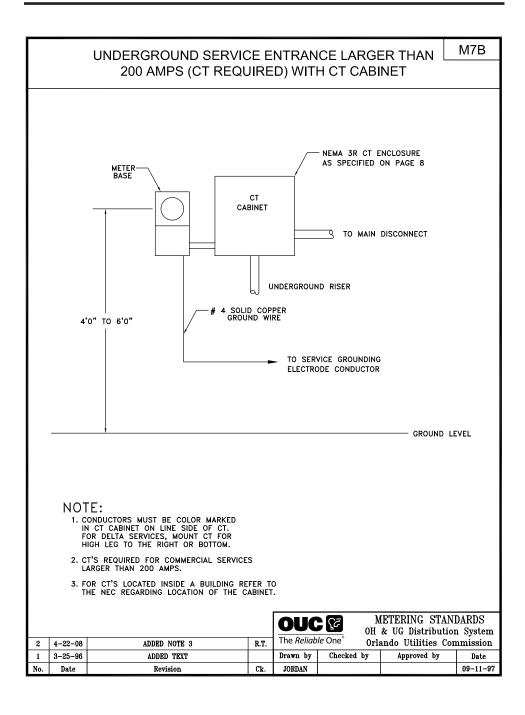


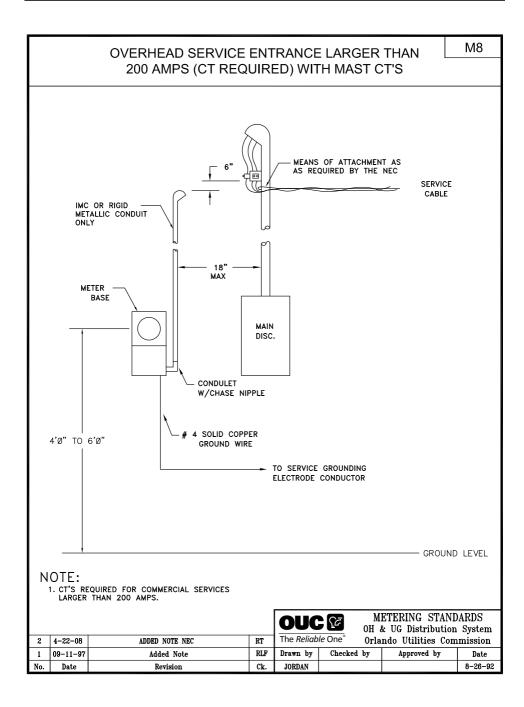


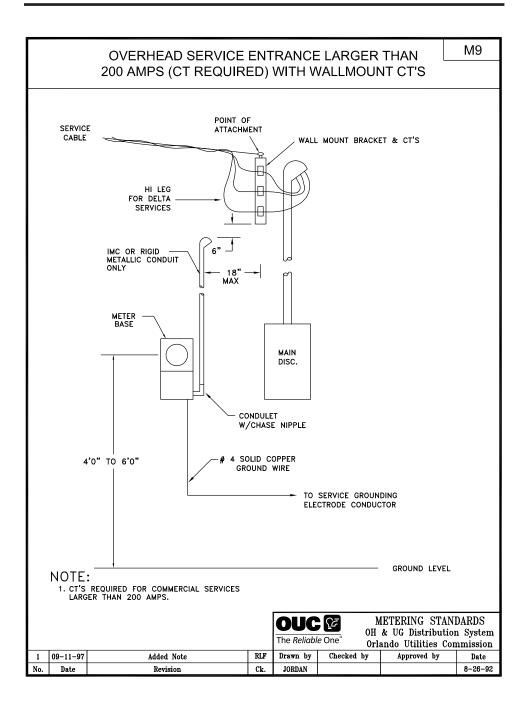


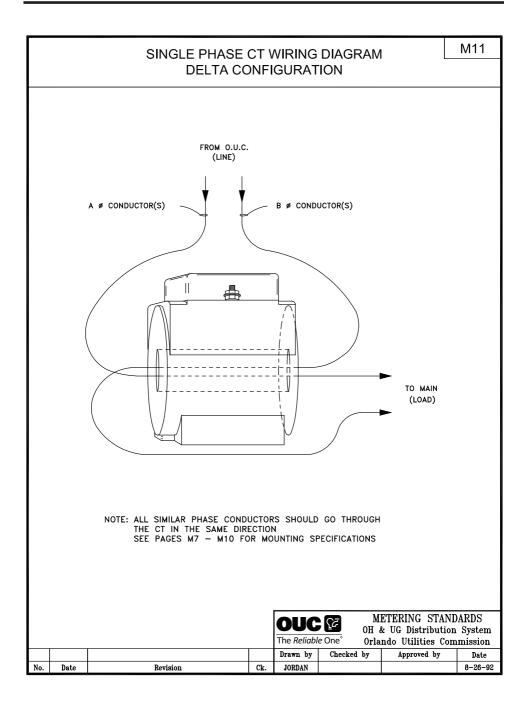


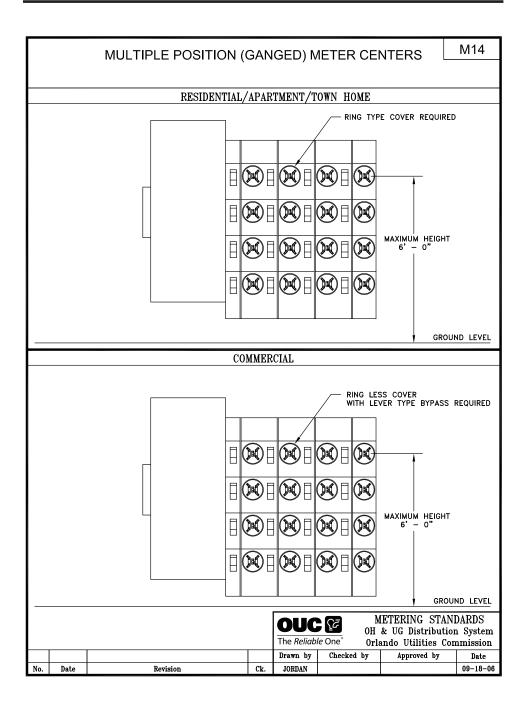


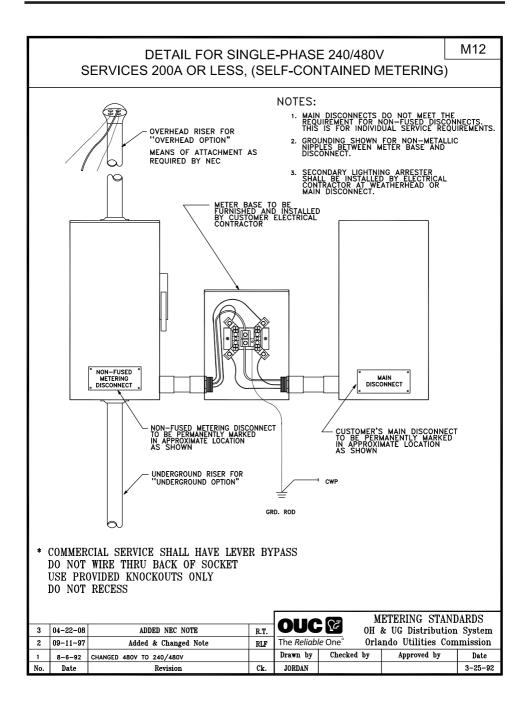


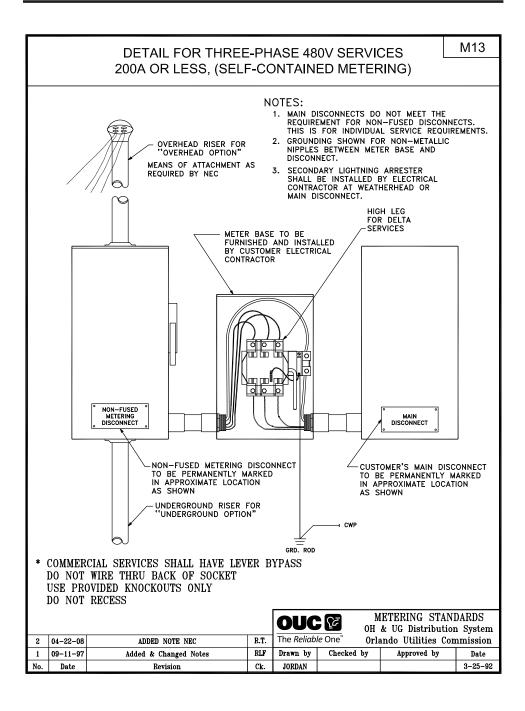




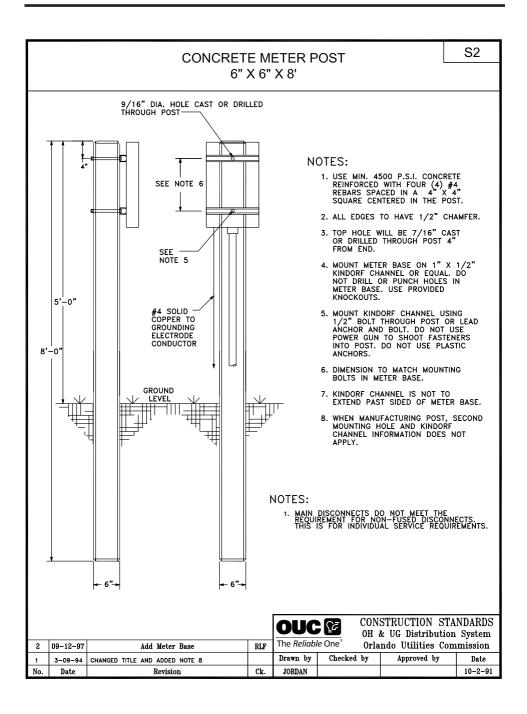


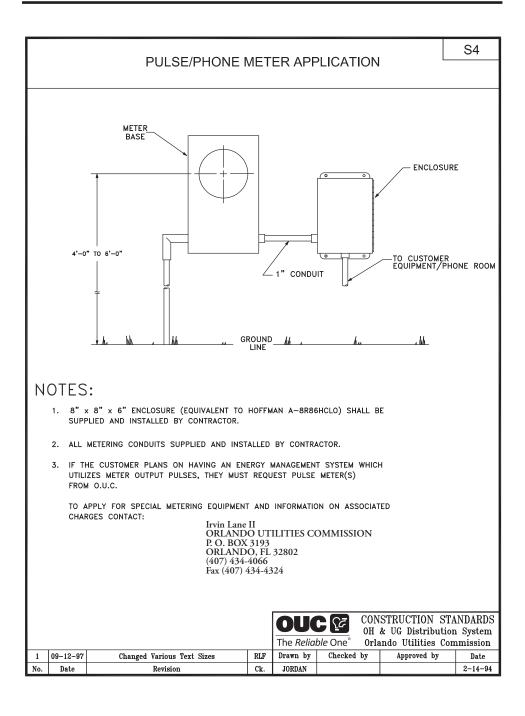


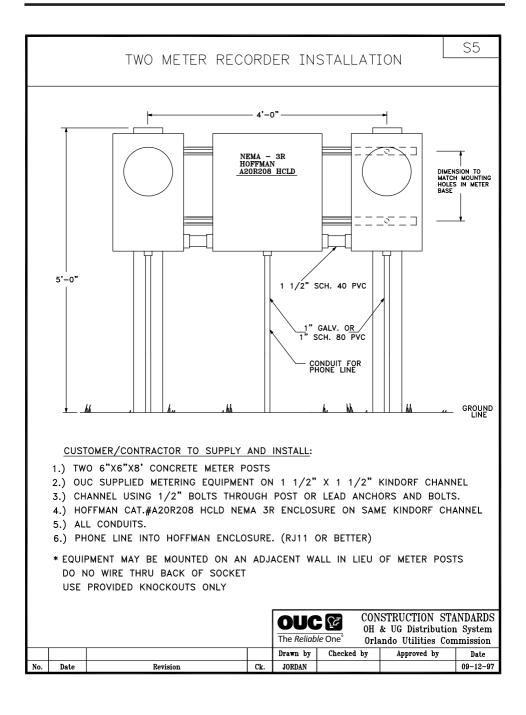


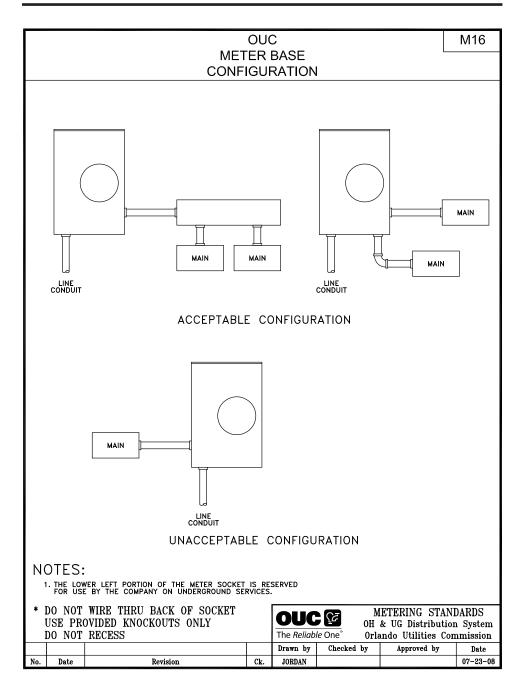


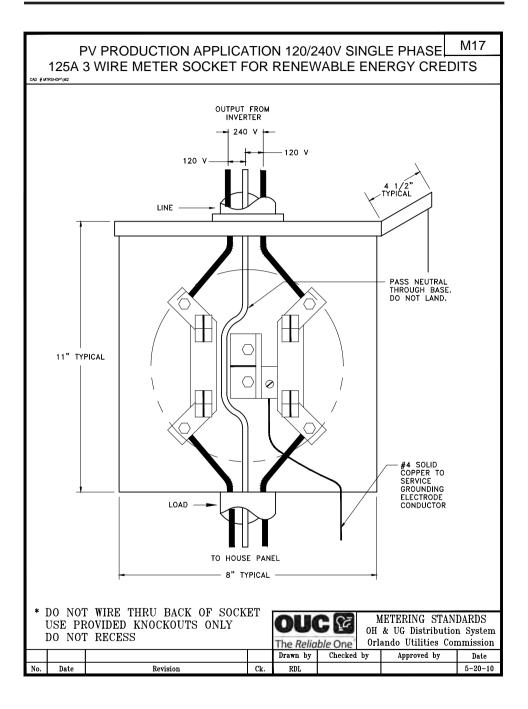
Electric Service and Meter Installation Requirements













ORLANDO UTILITIES COMMISSION Reliable Plaza 100 West Anderson Street Orlando, Florida 32802