

C.O.P. Service Entrance Code

Residential and Light Commercial

(Rev. 11-14-07)

Introduction:

- A) The C.O.P. has adopted the latest version of the National Electric Code (N.E.C.).
- B) All sections of this C.O.P. code shall be either redundant reminders of the N.E.C. or requirements above the N.E.C.
- A) The C.O.P. reserves the right to enforce both codes as it interprets them.
- D) The C.O.P. does not require that a licensed electrician perform the installation of a service entrance, but does highly recommend that an individual have a very good working knowledge of electricity and the N.E.C.

1) Service Point: (The point where C.O.P. wires meet customer wires)

- A) (Overhead service) The service point shall be at the load end of the connection between the service drop and service entrance conductors
- B) (Underground service) The service point shall be at the load end of the connection between any C.O.P. conductors and the service lateral.
Example: C.O.P. conductors may be on a pole, in a pedestal or in a transformer.
Example: Service lateral conductors are the wires underground to a customer owned meter base.

2) Location of Service equipment:

- A) The C.O.P. reserves the right to approve the location of all service equipment.
- B) The C.O.P. interprets 230-70a of the N.E.C. as follows:
 - a) The service disconnecting means shall be outside at an accessible point or
 - b) The service disconnecting means shall be inside, located at no more than 10' from the point of entry into the structure.
- C) The center of the meter base shall be 5' 6" off finished grade, or be a manufactured pedestal meter base, installed as/ per manufacturers' specifications.

3) Size of Service

- A) 100 amp minimum
- B) Larger than 100 amp if required by Article 220 of the N.E.C.
- C) 200 amp minimum for any service other than 1 phase.

Exception: **By written permission from the Electric Dept. Superintendent**, the overcurrent device may be less than 100 amp if all other equipment, including the equipment containing the overcurrent device is still sized at a minimum of 100 amp.

4) C.O.P. equipment installed in customer-owned equipment.

- A) The C.O.P. reserves the right to install a Watt-Hour meter in a customer's meter base.
- B) The C.O.P. reserves the right to place a seal on such meter base to prevent the entry of any persons other than Electrical distribution personnel.

5) Equipment & Raceways

- A) All enclosures and equipment shall be rated for use as service equipment.
- B) All raceways shall be sized according to the N.E.C. and shall be Rigid steel or I.M.C. conduit. All fittings shall be the like.

Exception #1 - A minimum of 1 ¼" conduit shall be required for 100 amp service.

Exception #2 - A minimum of 2" conduit shall be required for 200 amp service.

Exception #3 - A minimum of 2" conduit shall be required for any service that uses the service mast as the means of support for the service drop.

- C) The C.O.P. does not allow the use of service entrance cables as service entrance conductors.
- D) All equipment shall have only one conductor terminated in a lug, unless the lug is listed for more than one conductor.

Example: The grounding electrode conductor must terminate in it's own lug, not under the neutral lug.

6) Conductors

- G) All service entrance conductors shall be copper.
- H) All service entrance conductors shall be sized according to the N.E.C.

Exception #1 - #3/0 copper minimum for 200 amp service.

Exception #2 - #3 copper minimum for 100 amp services.

- I) The grounding electrode conductor shall be copper and be installed in P.V.C. conduit or rigid steel conduit if both ends of the conduit are bonded to the conductor.

7) Services larger than 200 amp, or other than 1 phase

- A) Contact the Electrical Distribution Dept. for details.

City of Princeton Rotation (Sequence) Notation Procedure

Step 1: Rotation or Sequence meter placement

- Red lead must be placed on line 1.
- White lead must be placed on line 2.
- Blue lead must be placed on line 3.

Note: Line 1-2-3 is left to right as you face the front of the equipment.

Note: Phase A-B-C is also left to right.

Step 2: Rotation or Sequence check

- Check rotation or sequence and inform C.O.P. crew of results.

Step 3: Color code of conductors

- Inform C.O.P. crew which color conductors go to which lines.

Note: The N.E.C section 230.56 requires that the high leg to ground on a 3 phase 4 wire Delta must be coded as orange.

Note: The N.E.C. section 384-3 (f) requires that the high leg to ground of a 3 phase 4 wire Delta must be placed in the line 2 position, with the exception of the meter base or equipment in the same section or multisection as the meter. In these exceptions the high leg must be placed in the line 3 position.

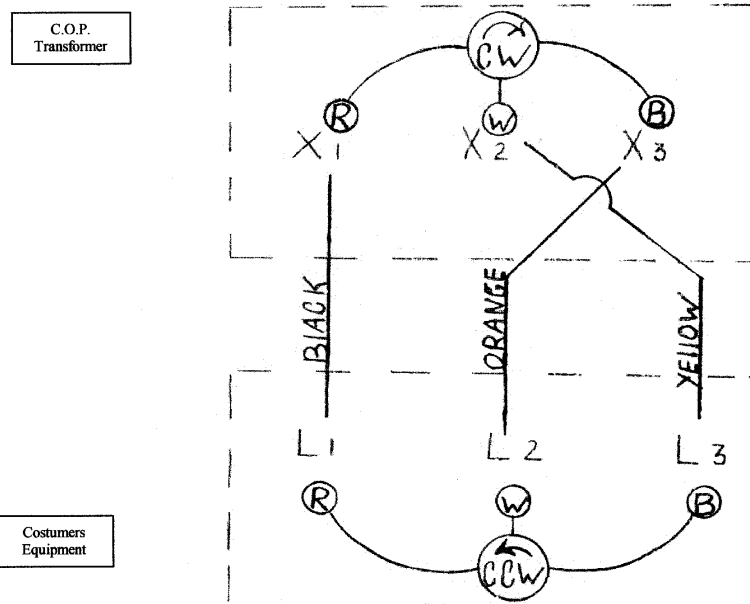
Step 4: Termination into C.O.P. equipment

C.O.P. crew will terminate the customer's conductors into C.O.P. equipment and maintain the rotation or sequence noted in step 2, as long as steps 1 & 3 are followed.

City of Princeton Rotation (Sequence) notation procedure.

"EXAMPLE"

This is an example of a Black-Orange-Yellow "CCW"



City of Princeton Underground Residential Secondary Service Requirements

- Ditch to be left open until C.O.P. crew can inspect.
- 24 inches of cover required regardless of grade.
- Sch. 40 pvc pipe minimum.
- Contractor to provide lugs for meter base, if needed. C.O.P. will make connections.
- Rigid steel pipe required the first ten feet and if not, in a pedestal to the bottom of the meter base.
- Straps and lugs provided for the rest of pipe up pole (pvc). C.O.P. crew will finish putting pipe up after rigid.
- 4/0, 4/0, 2/0 Aluminum for 200 amp.
- 2, 2, 4 Aluminum for 100 amp.