# BASIC ASSEMBLY UNITS

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INSTRUCTIONAL GUIDE

Purpose: For installation, removal or replacement of basic construction assemblies used in underground distribution construction.
NOTES

1. Guard post to be installed where necessary to protect pad-mounted equipment. Do not install guard post in an area which would restrict access to the equipment or prevent full opening of equipment doors. Protect each side exposed to vehicular access.

2. Backfill with concrete (Material Item #: 5075323) or backfill with native soil and compact to 95% density.

3. Guardpost shall be one and a half lap taped with 2" x 10 mil. black PVC tape (not required when backfilled with concrete).

4. Apply reflective tape (Material Item #: 5010577) 18" and 30" above the ground line.

5. Typical installations shown below:

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**SECTION A - A**

1/4" X 8" X 4" STEEL PLATE (8) WELDED TO PIPE AT 90 DEG ANGLES

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UBGRD
8' COPPER CLAD GROUND ROD WITH CONNECTOR AND 8' #4-3 CU WIRE

UBGRDG
GROUND ROD ONLY FOR CONTRACTOR INSTALLATION

UBGRDL
8' COPPER CLAD GROUND ROD WITH CONNECTOR AND 8' #6 CU WIRE FOR STREET LIGHTS

NOTE:
The top of the rod and connecting wire are to be installed below final grade level except when installed in pad-mounted enclosures.

UBGRD
PAD MOUNTED ENCLOSURES
UBGRDP
LIGHT POLES

ALTERNATE GROUNDING ELECTRODE FOR USE AT EQUIPMENT WHERE EXISTING FACILITIES CONFLICT WITH DRIVING A GROUND ROD.

UBGRDJ
CONNECTED TO DEVICE GROUNDING LUG
MARK WITH GREEN TAPE
BARE COPPER #4-3 STRAND (5033848) FOR ENCLOSURES
#6 SOLID (5033845) FOR LIGHT POLES
COPPER PLATE (5034834)
FINAL GRADE 5' MINIMUM DEPTH
(PREFERRED) RETROFIT EXISTING INSTALLATIONS

UBGRDA
CONNECTED TO DEVICE GROUNDING LUG
MARK WITH GREEN TAPE
BARE COPPER #4-3 STRAND (5033848) FOR ENCLOSURES
#6 SOLID (5033845) FOR LIGHT POLES
COPPER PLATE (5034834)
FINAL GRADE
BOTTOM OF TRENCH
100 FT.
100 FT. OF #4 BARE COPPER (5033848) LAID STRAIGHT ALONG BOTTOM OF TRENCH.

REV. UPDATED STOCK CODE NUMBERS

ISSUE DATE: 01/15/87
REV. DATE: 07/24/13
APPROVAL: B. PRIEST

861SE112.DGN
UBPF1 IS TO BE USED FOR ALL SINGLE PHASE TRANSFORMERS AND ANY OTHER ENCLOSURE USED ON A SINGLE PHASE TRANSFORMER PAD.

UBPF3 IS TO BE USED FOR ALL SWITCHING AND FUSING ENCLOSURES

IF NEEDED, CONTACT POWER C&M TOOL ROOM FOR CONCRETE DRILLS AND WEDGE ANCHORS

3" X 3/8" REDHEAD WEDGE ANCHOR OR EQUIVALENT WITH 3/8" NUT AND WASHER (1/2" BOLT, NUT AND WASHER MAY ALSO BE USED)

THIS IS FOR ALL PADS NOT COVERED BY UBPF1 OR UBPF3
1. MID-RUN METER PEDESTAL.
2. COMPATIBLE UNIT INCLUDES 20' OF SECONDARY CONDUCTOR FOR MAKE-UP INSIDE METER PEDESTAL.

WIRE SIZES:
- UTX10
- UTX350
- UTX40
- UTXK10
- UTXK40
- UTX10K
- UTX350K
- UTX40K

1. END OF RUN METER PEDESTAL.
2. COMPATIBLE UNIT INCLUDES 10' OF SECONDARY CONDUCTOR FOR MAKE-UP INSIDE METER PEDESTAL.

WIRE SIZES:
- UTX10
- UTX350
- UTX40
- UTXK10
- UTXK40
- UTX10K
- UTX350K
- UTX40K

SECONDARY IN AND SECONDARY OUT

REV. MARKED UMBPC1 AS REFERENCE ONLY

BASIC ASSEMBLY UNITS
METER PEDESTAL MAKE-UP ON MOBILE HOME PARKS

ISSUE DATE: 01/15/87
REV. DATE: 06/16/14
APPROVAL: B. PRIEST
This buried electronic marker is to be used for marking the location of connection points, T-taps, mole assemblies, conduit stub-outs or other locations which may need to be located at some time in the future.

1. Bury at least 8" above energized conductor. Closer distance will cause the marker to be ineffective at 4 foot or greater depth.
2. The marker is to be buried flat and level.
3. Cover with at least 4" of select backfill to prevent accidental movement or damage during backfill. (For service conduit, it may be in bottom of trench.)
4. Care should be taken to insure that cable, tin foil, or other extraneous metal does not get discarded into the trench prior to backfill. Metal in close proximity will render the marker ineffective.
5. For permanent installation with a buried junction box: drill 2 holes in lid and secure marker to lid with nylon cable tie.

**NOTES:**
Pad-mounted equipment must be secured from unauthorized access and operation.

**Locks**

All pad-mounted equipment (including junction boxes) with provisions to carry a lock shall have an approved lock installed. Equipment operating handles shall also have approved locks installed. District padlocks available from the warehouse include stock code 5014605 (short shank), and stock code 5014606 (long shank). A shear head lock, stock code 5014360, is available for use in areas subject to padlock theft.

**Penta-Head Bolts**

All pad-mounted equipment (including readily accessible junction boxes) with provisions to carry penta-head bolts shall have them installed. Some older pieces of equipment may not have provisions to install penta-head bolts, therefore one cannot be installed. To prevent crossthreading, the bolt shall be started by hand, then tightened using a penta-head wrench (stock code 5039838), or socket (stock code 5039839).

<table>
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<tr>
<th>Stock Code</th>
<th>Diameter (in.) x Length (in.), Threads per inch</th>
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<tr>
<td>5034051</td>
<td>3/8 x 1.25, 16</td>
</tr>
<tr>
<td>5034052</td>
<td>3/8 x 1.5, 16</td>
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<tr>
<td>5034053</td>
<td>3/8 x 2.5, 16</td>
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<tr>
<td>5034054</td>
<td>1/2 x 1.25, 13</td>
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<td>5034055</td>
<td>1/2 x 1.5, 13</td>
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<tr>
<td>5034056</td>
<td>1/2 x 2.0, 13</td>
</tr>
<tr>
<td>5034285</td>
<td>1/2 x 2.5, 13</td>
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<tr>
<td>5034284</td>
<td>1/2 x 3.0, 13</td>
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When replacing missing 1/2" pentahead bolts in pad-mounded equipment, use a push nut retention washer (stock #5069569) to hold the bolt captive and prevent future loss.

**Equipment Installation**

1. The base of all equipment installed on pads shall be be flush with the surface of the pad, with no gaps between the pad surface and base of equipment. When a transformer is installed, verify the sill is flush against the surface of the pad. This may require adjustment to close any gaps between the sill and the pad.

2. Pad-mounted equipment shall be secured to the anchor provisions available in the pad using brackets, stock codes 5035026 or 5035027. Note: Capacitor and three-phase transformer pads do not have anchor provisions.
Vermin Barrier (Gopher Proofing)

1. Pad mounted equipment window(s) shall be sealed to prevent gophers and other vermin from infesting the equipment.
   A. For new equipment installations, if Controlled Low Strength Material (CLSM ½ Sack, 5075313) is not used for trench backfill under the equipment pad, the window(s) of the pad shall be sealed with a cement based mortar (see Note 2).
   B. For existing equipment installations, if evidence of gophers or other vermin exists in the area near the equipment, the window(s) of the pad shall be sealed with a cement based mortar (see Note 2).

2. If mortar is used, it shall be one-component, rapid-set, polymer modified cement based mortar such as “SPEED CRETE”.

3. When cement based mortar is used to seal the window(s) of equipment pads, it shall be installed to a thickness of 1 to 2 inches. The mortar shall not be installed to a thickness that overflows into the conduit. NOTE: Neither CLSM nor mortar shall be used to gopher proof secondary windows of three-phase transformers with secondary pullboxes.

4. “SPEED CRETE” is available in imprest, stock code 5011902.