# Table of Contents

## Trench and Conduit
Conduit Requirements for Underground Residential & Commercial Developments

<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID-CI</td>
<td>Conduit installation</td>
</tr>
<tr>
<td>ID-CEC1</td>
<td>Concrete encased conduit</td>
</tr>
<tr>
<td>UD2010 - UD2080</td>
<td>PVC conduit</td>
</tr>
<tr>
<td>UDC2 - UDC8</td>
<td>PVC conduit end caps</td>
</tr>
<tr>
<td>UDS2230.22 - UDS2080.90</td>
<td>Sweeps</td>
</tr>
<tr>
<td>UDA46, UDA48</td>
<td>Adapter couplings</td>
</tr>
<tr>
<td>UDCC2 - UDCC8</td>
<td>Couplings</td>
</tr>
<tr>
<td>UF2 - UF8</td>
<td>End bell flares</td>
</tr>
<tr>
<td>UG1001, UG1002</td>
<td>Ground rod</td>
</tr>
<tr>
<td>UK6021</td>
<td>Electronic marker</td>
</tr>
<tr>
<td>UM13</td>
<td>Underground warning tape</td>
</tr>
<tr>
<td>UM15</td>
<td>Underground cable stub-out marker</td>
</tr>
<tr>
<td>ID-CS1-UC</td>
<td>Conduit stub</td>
</tr>
<tr>
<td>UM12.EM</td>
<td>Underground cable location marker</td>
</tr>
<tr>
<td>ID-RC1</td>
<td>Road crossings</td>
</tr>
<tr>
<td>ID-RP1</td>
<td>Conduit pole riser</td>
</tr>
</tbody>
</table>

## Equipment

<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID-B</td>
<td>Bollard installation</td>
</tr>
<tr>
<td>ID-BL</td>
<td>Bollard locations around padmount equipment</td>
</tr>
<tr>
<td>ID-BC1</td>
<td>Clearances of padmount transformers to combustible walls</td>
</tr>
<tr>
<td>ID-BC2</td>
<td>Clearances of padmount transformers to noncombustible walls</td>
</tr>
<tr>
<td>ID-BW</td>
<td>Clearances of padmount transformers to barrier walls</td>
</tr>
<tr>
<td>ID-TC1</td>
<td>Padmount equipment clearances</td>
</tr>
<tr>
<td>UP1001</td>
<td>Concrete pad for single phase transformer or enclosure</td>
</tr>
<tr>
<td>ID-PT1</td>
<td>Single phase transformer pad and conduit</td>
</tr>
<tr>
<td>ID-PE1</td>
<td>Single phase enclosure pad and conduit</td>
</tr>
</tbody>
</table>
# Table of Contents

## Equipment (continued)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP1003</td>
<td>Concrete pad for three phase 75 to 500 Kva transformer</td>
</tr>
<tr>
<td>UP1004</td>
<td>Concrete pad for three phase 750 to 2500 Kva transformer</td>
</tr>
<tr>
<td>ID-HH1</td>
<td>Handhole</td>
</tr>
<tr>
<td>ID-PD1</td>
<td>Pedestal and conduit</td>
</tr>
<tr>
<td>ID-PBS</td>
<td>Small pull box</td>
</tr>
<tr>
<td>ID-PBST</td>
<td>Parking lot rated small pull box</td>
</tr>
<tr>
<td>ID-PEB</td>
<td>3 Phase enclosure box and concrete pads</td>
</tr>
<tr>
<td>UP1014</td>
<td>Concrete pad for three phase enclosure</td>
</tr>
<tr>
<td>ID-PEBPT</td>
<td>3 Phase enclosure box to transformer pad</td>
</tr>
<tr>
<td>ID-PSB1</td>
<td>Switch gear box pad to small pull box</td>
</tr>
<tr>
<td>ID-PBL</td>
<td>Large pull box</td>
</tr>
<tr>
<td>ID-PSB</td>
<td>Switch gear box pad to large pull box</td>
</tr>
<tr>
<td>UPMH.880, UPMH.1290</td>
<td>8’ X 8’ and 12’ X 9’ utility manhole</td>
</tr>
<tr>
<td>ID-MH1</td>
<td>Manhole Interior Detail</td>
</tr>
<tr>
<td>UPMH.RISER.6, UPMH.RISER.9</td>
<td>6” and 9” ring risers for manholes</td>
</tr>
</tbody>
</table>

## Meters

Metering Equipment & Terminating Services

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID-MB</td>
<td>Installing meter bases</td>
</tr>
<tr>
<td>ID-MB-S</td>
<td>Installing meter bases (Spanish)</td>
</tr>
<tr>
<td>ID-MBS</td>
<td>Meter base installation sticker</td>
</tr>
<tr>
<td>UM8025</td>
<td>Underground meter riser</td>
</tr>
<tr>
<td>UM8030, UM8035</td>
<td>Underground meter riser</td>
</tr>
<tr>
<td>ID-RM1</td>
<td>Meter base riser pipe</td>
</tr>
<tr>
<td>ID-BG002</td>
<td>Non-Standard Meter Location</td>
</tr>
<tr>
<td>ID-BG004</td>
<td>Service conduit installation at alternate location</td>
</tr>
<tr>
<td>ID-MFS</td>
<td>Single phase meter free standing</td>
</tr>
<tr>
<td>ID-TS1</td>
<td>Typical underground temporary service</td>
</tr>
</tbody>
</table>
# Table of Contents

**Meters (continued)**

<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID-TS2</td>
<td>Typical overhead temporary service</td>
</tr>
<tr>
<td>ID-OHS</td>
<td>Overhead service</td>
</tr>
<tr>
<td>ID-MOP</td>
<td>Meter on customer owned pole</td>
</tr>
<tr>
<td>ID-OHS.JU</td>
<td>Overhead cable TV power supply</td>
</tr>
<tr>
<td>ID-MB1</td>
<td>200 amp underground meter socket</td>
</tr>
<tr>
<td>ID-MB1.2W</td>
<td>Two wire underground meter socket</td>
</tr>
<tr>
<td>ID-MB1FS</td>
<td>200 amp single phase free standing meter socket</td>
</tr>
<tr>
<td>ID-MB2</td>
<td>320 amp underground meter socket</td>
</tr>
<tr>
<td>ID-MB3</td>
<td>400-600 amp underground K4 meter socket</td>
</tr>
<tr>
<td>ID-MB4</td>
<td>Overhead meter socket</td>
</tr>
<tr>
<td>ID-MB4.2W</td>
<td>Two wire overhead meter socket</td>
</tr>
</tbody>
</table>

Area requirements for NOVEC metering equipment in electrical rooms

<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID-M-ST</td>
<td>Service trough</td>
</tr>
<tr>
<td>ID-M-IC</td>
<td>Instrument transformer cabinet</td>
</tr>
<tr>
<td>ID-M-IC1</td>
<td>Instrument transformer cabinet</td>
</tr>
<tr>
<td>ID-M-200</td>
<td>277/480 volt self-contained meter 200 amp</td>
</tr>
<tr>
<td>ID-M-K7</td>
<td>K-7 meter base 400-600 amp 3 phase</td>
</tr>
<tr>
<td>ID-M-CM</td>
<td>Cluster mounted meter sockets</td>
</tr>
<tr>
<td>ID-M-OT</td>
<td>Outdoor transformer-rated 3 phase meter</td>
</tr>
<tr>
<td>ID-MBGC</td>
<td>Meter base ground clamps</td>
</tr>
</tbody>
</table>
TRENCH
AND
CONDUIT
Conduit Requirements for
Underground Residential & Commercial Developments

Scope:

The specifications contained herein detail NOVEC’s requirements for underground residential and commercial developments. Underground conduit installations shall be governed by these specifications, any supplemental NOVEC specifications and any applicable codes and regulations. There also may be additional requirements in the final NOVEC construction plans for your specific project.

When Required:

Conduit shall be required for the following applications:
- All bulk feeders, typically 1000 MCM cable
- All commercial and industrial installations
- All non-residential units, apartment buildings, and condominiums
- All residential applications utilizing conduit
- All residential driveway crossings and concrete areas

Inspection Requirements:

NOTICE: Failure to obtain NOVEC approval of the installation before installing any cover or backfill will require all or part of the conduit system to be exposed for inspection and approval. NOVEC scheduler must be contacted two (2) working days prior to needing the inspection. For job sites in eastern Prince William County call: 703-392-1715. For job sites north of route 50 in Loudoun County call: 703-669-6070. For all other areas call: 703-754-6784.

The conduit system shall be inspected at various stages of installation. Materials or workmanship failing to meet NOVEC standards will be rejected. No work shall be covered, backfilled, concealed or embedded in concrete until it has been inspected and approved by NOVEC. No conduit shall be laid which is cracked, damaged, or contains any roughness which would injure the cable jacket.

The inspection shall include, but not be limited to the following:

- All trenches and excavations.
- All materials.
- All bedding, cover, and backfill material during or after installation as applicable.
- All equipment pads, pull boxes, ground rods, and other facilities, after setting in place, but prior to backfilling.
• All conduit installations, including cemented joints, sweeps, bell-ends, pull tape, and conduit plugs, prior to backfilling.
• All conduit terminations at transformer structures, pull boxes, switch locations, riser poles, and other applicable locations.
• All backfilling operations around structures and conduit runs.
• Conduits shall be free of any obstructions and debris. Under no circumstances shall antifreeze or other chemicals be put into conduit.

The successful pulling of the power cable will constitute acceptance of the conduit system. No formal written acceptance will be provided. The electrician/builder/developer shall be responsible for correcting any deficiencies.

Construction Requirements:

These specifications describe excavation and backfill of trenches, and the installation of conduit, sweeps, couplings, adapters, end bells, solvent cement (glue), pull string, pull boxes, manholes, ring risers, manhole frames, and lids, transformer pads, box pads, secondary pedestals, handholes, meter risers, ground rods, ground rod connectors, bare copper ground wire, conduit plugs, warning tape, and stub markers.

1. Conduit Type

   a. The number and size of conduit for each application shall be installed as shown in the construction plan.
   b. All conduits shall be gray, electrical grade, rigid, Polyvinyl Chloride (PVC) Schedule 40, heavy wall, sunlight resistant that conforms to NEMA TC2 Specifications and shall be permanently marked at regular intervals with the manufacturer's name or symbol, size, "SCH 40" and "PVC"

2. Sweeps, Couplings, End Bells and Adapters

   a. All sweeps, couplings, end bells, and adapters shall be PVC, Schedule 40, gray, electrical grade and conform to the same specifications as the conduit.
   b. Sweeps may be factory made or bent as required.
   c. The minimum radius for all sweeps less than three (3) inches in diameter is twenty four (24) inches. The minimum radius for all three (3) inch, four (4) inch, and six (6) inch diameter sweeps is thirty-six (36) inches. The minimum radius for all eight (8) inch diameter sweeps is forty-eight (48) inches.
3. Handling
   
a. In transporting long lengths of conduit, provision should be made to support the full length to avoid damage due to excessive overhang.
b. During the installation of multiple sections of glued conduit into a trench; all sections shall be supported to prevent bowing of conduit or cracking of joint seal.
c. To minimize accidental mechanical damage, conduit should not be left exposed in an open trench longer than is absolutely necessary.

4. Cutting Conduit

   A fine-tooth saw should be used to cut conduit. The conduit must be cut straight and cleaned of burrs.

5. Solvent Cement Welding

   All joints shall be made with solvent cement in accordance with these specifications.

   a. Clear or gray regular bodied PVC cement may be used on conduit four (4) inches and smaller in diameter. Clear or gray medium bodied or all weather PVC cement shall be used on conduit six (6) and eight (8) inches in diameter.
b. The chemicals used in solvent welding of conduit are intended to penetrate the surface of both the conduit and the fitting, which after curing result in a complete fusion at the joint. The over-use or under-use of such chemicals shall be avoided as such use will result in leaky joints or a weakened conduit system.
c. Inspect solvent cement container for date. Cement over 12 months old shall not be used.
d. Surfaces to be cemented shall be cleaned by wiping off all dust, dirt and moisture from these surfaces.
e. With a non-synthetic bristle brush or dauber, apply an even coating of cement to the outside of the conduit and the inside of the socket. Make sure that the cement is applied to the entire depth of the socket. If some evaporation of solvent from the surfaces to be joined is noted, reapply cement, before assembling.
f. It must be emphasized that most joint failures are caused by dry joints where an insufficient coating of solvent cement is applied, or when solvent has evaporated due to high temperature conditions.
g. WORK FAST!!
h. In weather below 40°F, use a primer to soften the joining surfaces before applying cement and allow a longer cure time. All weather or quick set cement may be used in lieu of primer when temperatures drop below 40°F.
i. Slip conduit straight into the fitting with a slight twist until it bottoms. Hold the joint for 15 seconds (one minute in weather below 40°F) so that the conduit does not push out of the fitting. Do not twist or drive pipe after insertion is complete.

j. Newly assembled joints should be handled carefully until the cement has cured the recommended set period. Set periods are related to the ambient temperature as follows:

- 60°F to 100°F: ½ hour minimum
- 40°F to 60°F: 1 hour minimum
- 20°F to 40°F: 2 hour minimum
- 0°F to 20°F: 4 hour minimum

k. Clean off any bead or excess cement that appears at the outer shoulder of the fitting. Excess cement allowed to remain in contact with the material can cause weakening of the material and subsequent failure.

l. Solvent cans shall be kept covered and away from excess heat and flames when not in use. Quart cans are generally the largest practical size to use since the solvent dries rapidly. Use only solvent cement as furnished or recommended by the conduit manufacturer. Solvent cement thinner shall not be used for thinning cement which has thickened.

m. Minimum trench widths may be utilized by assembling conduit above ground (allowing for weld cure period) and lowering the preassembled conduit bank into the trench.

6. Conduit Depth

Depths to the top of conduit to final grade shall be a minimum thirty (30) inches. In the event proper depth of conduit cannot be achieved, or where foreign objects threaten to interfere with the installation of conduit, a Concrete Protective Cover of the conduit may be used. Written approval is required for the use of Concrete Protective Cover. For additional information on this subject, refer to the Concrete Protective Cover section of this document. When conduit is located under roadways or within VDOT rights-of-way, cover shall be a minimum thirty-six (36) inches as required by the Virginia Department of Transportation (VDOT). Depth shall be measured from the top of the conduit to the top of the road surface. Refer to NOVEC Installation Drawing ID-RC1. Unique conditions will be addressed in the NOVEC construction plan.

a. All conduits shall be carefully aligned and laid to a uniform grade.

b. Conduit shall enter pull boxes, box pads, and pedestals as shown on NOVEC Installation Drawings ID-PBL, ID-PBS, ID-PBST, ID-PEB, ID-PEBT, ID-PSB, and ID-PSB1.
7. Conduit Trenching

Easement boundaries, street, lot, and trench lines shall be staked before any trenching is started. Construction plans specifying trench locations and depths shall be followed at all times. **NOVEC approval shall be required for any changes to construction plans.** Trench excavation shall include the excavation of any and all obstacles encountered, the removal and disposal of all debris including submerged and buried timber and piling, and all pumping that may be necessary for draining the excavation.

a. Trench location shall be in as direct a line as possible between all distribution facilities and the customer's service entrance.
b. The bottom of the trench shall have a uniform pitch and the trench bottom shall be solid and relatively smooth, or undisturbed earth, or well tamped, and free of any debris that may be detrimental to the conduit. Excavation shall be of a size and extent to permit proper installation of conduit and structures, as required.
c. Minimum burial depths specified for all electric conduit shall be maintained during all phases of construction.
d. Sweeps in the conduit run shall only be installed according to the final NOVEC design. All changes require written NOVEC approval.
e. Adherence to OSHA, VOSHA and/or any local, state and national codes or ordinances shall be maintained at all times.
f. All areas disturbed by construction shall be restored to a condition equal to or better than that which existed before construction. Special care shall be taken to prevent damage to existing buried structures and facilities.

8. Joint Conduit Trenches

Whenever practical, NOVEC will allow gas, telephone, cable television, and/or any other wire service facilities in a joint trench with NOVEC facilities sized to accommodate all facilities. **A joint use agreement is required between all utilities for a joint use trench.**

a. The joint trench shall be excavated and backfilled to NOVEC’s and other joint trench occupants' specifications.
b. Minimum radial separation between electrical conduit and gas facilities shall be twelve (12) inches.
c. Customer-owned fuel lines, including natural gas, oil, and propane lines are not permitted in the joint trench.
d. Water, sewer, sanitary, or storm drain, and other wet utility piping are not permitted in the joint trench.
e. Non-NOVEC facilities shall not be installed underneath of any NOVEC equipment pads or pull boxes.
9. Conduit Cover

A minimum of twelve (12) inches of cover, measured to the top of the conduit, is required to cover all conduits. Cover is comprised of suitable fill. Suitable fill is defined as any type of soil that does not contain ashes, cinders, shale, frozen material, loose debris, and rocks larger than two (2) inches in diameter. The material should fill the voids around the conduit. NOVEC red “warning” tape shall be installed in the entire length of the trench directly above the twelve (12) inches of cover. Refer to NOVEC Installation Drawings ID-C1.

10. Conduit Backfill

a. Spoils from the trench may be used as long as it is free of debris or other material that may damage the conduit system or cause settling.

b. Backfill shall not contain ashes, cinders, shale, frozen material, loose debris, vegetation, or rocks larger than six (6) inches in any dimension.

c. Trenches should be immediately backfilled following conduit system inspection and approval by NOVEC.

d. Backfilling shall be accomplished in a continuous manner from one structure to the next, and shall not be placed over any open-ended (unplugged) conduits.

e. All backfill shall be mechanically compacted to the density of the surrounding undisturbed soil by means available to prevent settling. Mechanical compaction shall not be within twelve (12) inches of the conduit.

f. Refer to NOVEC Installation Drawing ID-C1.

11. Pads, Pull Boxes, Box Pads, Pedestals and Handholes

a. All transformer and enclosure pads, pull boxes, box pads, pedestals, and handholes shall be level and installed in accordance with NOVEC Installation Drawings.

b. Four inches of rock dust or suitable material shall be placed on top of the final grade underneath single phase transformer and enclosure pads. Refer to NOVEC Installation Drawings ID-PT1 and ID-PE1.

c. Three phase pads shall be installed on level undisturbed or compacted soil and minimum of 4” of compacted 21-A gravel. The pad shall be set so that it will be 6” above the final grade.

d. A minimum of six (6) inches base course of # fifty-seven (57) gravel shall be placed under all pull boxes and shall be thoroughly compacted. Certain soil conditions may require removal below normal depth and subsequent additional clean fill or gravel added and compacted to insure sound base course. Installation shall be complete prior to commencing any cable pulling. Pull boxes shall be installed such that their covers will be three (3) inches above final grade, with the exception of UP1047T (PARKING LOT RATED PULL BOX), which shall
be installed level with the parking lot grade. In no case shall the final grade; obstruct or hamper access to the pull box covers. Pull boxes shall only be placed within NOVEC easements. Covers shall be closed on pull boxes at all times except when cable is being pulled. **UP1047T is the only Pull Box rated for occasional traffic, all other Pull Boxes are not traffic rated and shall not be driven across.** Refer to NOVEC Installation Drawings **ID-PBL, ID-PBS, and ID-PBST.**

e. A minimum of six (6) inches of base course of # fifty-seven (57) gravel shall be placed under all box pads. Refer to Installation Drawings **ID-PEB, ID-PSB, and ID-PSB1.**

f. Conduits shall be terminated in pull boxes and with end bells.

g. Pedestals shall be installed in accordance with details shown in NOVEC Installation Drawing **ID-PD1.**

h. Handholes shall be installed in accordance with details shown in NOVEC Installation Drawing **ID-HH1.** Handholes are **not** traffic rated and shall not be driven across.

i. A retaining wall shall be installed where slopes exist that would undermine or cover equipment (i.e., transformers) due to sharp drop-off or rise of grade. Retaining wall design will require NOVEC approval and in no case shall the retaining wall hamper door openings or placement of such equipment.

j. In no instance shall final grades impede proper access or operation of NOVEC distribution equipment.

k. NOVEC approved protective guards, such as concrete-filled pipe (bollards), shall be required in areas where the facilities are subject to damage. Refer to NOVEC Installation Drawings **ID-B** and **ID-BL.**

l. All pad openings should be covered during the construction process except when work is being performed.

12. Manholes

NOVEC approved manholes are required in streets or when pull boxes cannot be utilized. Manholes shall be externally 9’ x 9’ x 7 ½’ (small) or 10’ x 13’ x 8’ (large) concrete structures and shall have solid iron lids and frames. Manholes shall have a minimum of twenty five (25) inches of compacted cover. Ring risers shall be installed as necessary, to a maximum of forty eight (48) inches, to achieve final grade. All conduit shall have a minimum of six (6) inches of concrete encasement, extending thirty six (36) inches from the manhole, and shall be terminated in the manhole with PVC end bells flush with the inside surface of the structure wall. All knock-outs shall be grouted around after conduit installation to seal manhole. No cables shall lie on the floor of the manhole. All cables shall be secured on racks. A ground loop shall be attached to the walls inside the manhole. For further information on the installation of manholes, refer to drawings **UPMH.____ and ID-MH1.**
13. Ground Rods

a. An approved ¾” X 8’ copperclad driven ground rod and ground rod connector shall be installed in the opening of each single phase transformer and single phase enclosure pad. The ground rod shall be level with the top of the pad. Refer to NOVEC Installation Drawings ID-PT1 and ID-PE1.

b. Three phase transformers shall have an approved ¾” X 8’ copperclad driven ground rod and ground rod connector installed on the primary side of the opening, six (6) inches above ground level, with three (3) inches of radial clearance. Refer to NOVEC Drawings UP1003 and UP1004.

c. An approved ¾” X 8’ copperclad driven ground rod, ground rod connector and #4 bare soft drawn solid copper ground wire shall be installed in each box pad. Four (4) inches of the ground rod shall extend above the soil inside of the box pad. Six (6) feet of wire shall be securely connected to the ground rod and coiled inside of the box pad. Refer to NOVEC Installation Drawings ID-PSB, ID-PSB1, and ID-PEB.

d. The large 4’ x 8’ pull boxes shall have an approved ¾” X 8’ copperclad driven ground rod and ground rod connector installed. Four (4) inches of ground rod shall extend through drain slot into pull box. Refer to NOVEC Installation Drawing ID-PBL.

e. Two (2) approved ¾” X 8’ copperclad driven ground rods and ground rod connectors shall be installed outside of each manhole. Both ends of the manhole shall have a separate driven ground rod. Both ground rods shall be attached to the manhole ground loop. Refer to NOVEC Drawings UPMH and ID-MH1.

f. Ground rods are not required in small pull boxes, pedestals or handholes.

14. Concrete Protective Cover

The concrete for conduit protective cover shall be 3,000 PSI with a maximum of ¾” aggregate. Surfaces upon which concrete is to be placed shall be free of standing water, mud and debris. Absorptive surfaces against which concrete are to be placed shall be moistened. Concrete shall be placed to cover at least six (6) inches on the top and both sides of the conduit. The fall of concrete should be broken before it drops on the conduit. Where concrete protection of conduit is used, six (6) inches of well dampened earth shall be placed over concrete protection in the trench 2 hours after the concrete is poured. Backfilling of the trench excavation may then be completed. Backfill should be placed uniformly in layers and each layer thoroughly compacted. Backfill should be compacted to the density of the surrounding undisturbed soil. All conduit stubs shall be free of concrete three (3) feet from the stub end.

15. Detectable Pull Tape

A detectable pull tape with a minimum tensile strength of 2500 lbs. shall be installed in each conduit. Five (5) feet of slack shall be secured to the conduit plugs at each end of the conduit.
16. Pole Riser

Conduit riser locations (quadrant) on the pole shall be designated and shown on the NOVEC construction plan. All risers shall be plugged above ground at the base of the pole until cable is pulled. Refer to NOVEC Installation Drawing ID-RP1.

17. Meter Riser

All meter risers shall be slip fit to limit damage from settlement. Ditch must be tamped at meter base before backfilling. Sweep at bottom of meter riser shall be resting on compacted soil. Metal locknut and plastic bushing must be installed. Refer to NOVEC Installation Drawing ID-RM1.

18. Streetlights

Streetlights shall be installed and located where indicated on construction plans. Streetlight poles will be installed twenty-four (24) inches from handhole per NOVEC Installation Drawing ID-HH1.

19. Conduit Stubs

All conduits that are extended to a location where they are not terminated (even temporarily) shall be plugged and marked with a conduit stub marker. Refer to NOVEC Installation Drawing ID-CS1-UC. Conduit stubs for service laterals shall extend a minimum of five (5) feet into the lot away from the mainline trench, as shown on construction plan. This will allow for connection of the service conduit at a later date.

20. Other Utilities

Conduit, terminal enclosures or other structures belonging to other utilities shall be located so they do not interfere with electrical installations nor impede the operation or maintenance of electrical facilities.

21. As-builts

An “as-built” of the facilities documenting the separation distance between NOVEC facilities and all gas and wet utility crossings is required.
NOTES:

1. A MINIMUM RADIAL SEPARATION OF 12" IS REQUIRED BETWEEN NOVEC CONDUIT AND GAS FACILITIES. 12" SEPARATION IS ALSO RECOMMENDED BETWEEN ALL OTHER UTILITIES.

2. UNDER ROAD SURFACES AND INSIDE ALL ROAD RIGHT OF WAYS THE COVER TO TOP OF CONDUIT SHALL BE A MINIMUM OF 36" TO FINISHED GRADE AND MUST ADHERE TO LOCAL, COUNTY AND/OR STATE ROAD CROSSING SPECIFICATIONS. (SEE ID-RC1)

3. NO SEPARATION IS REQUIRED BETWEEN NOVEC OWNED FACILITIES.

4. ALL CONDUIT SHALL BE INSTALLED WITHIN NOVEC EASEMENTS.

5. NUMBER, SIZE, AND SPACING OF CONDUIT SHALL BE DETERMINED BY NOVEC.

6. ALL CONDUIT SHALL BE INSPECTED BY NOVEC: NOVEC SCHEDULER MUST BE CONTACTED 2 WORKING DAYS PRIOR TO NEEDING INSPECTION. FOR JOB SITES IN EASTERN PRINCE WILLIAM COUNTY CALL: 703-392-1715. FOR JOB SITES NORTH OF ROUTE 50 IN LOUDOUN COUNTY CALL: 703-669-6070. FOR ALL OTHER AREAS CALL: 703-754-6784.

INSTALLATION DRAWING FOR CONDUIT INSTALLATION
NOTES:
1. NO CONCRETE ENCASED CONDUIT SHALL BE ALLOWED WITHOUT PRIOR APPROVAL FROM NOVEC.

2. ALL CONDUITS MUST BE INSTALLED WITH A MINIMUM OF 12" OF VERTICAL AND HORIZONTAL SEPARATION FROM ANY OTHER UTILITIES.

3. SURFACES UPON WHICH CONCRETE IS TO BE PLACED SHALL BE FREE OF STANDING WATER, MUD AND DEBRIS. ABSORPTIVE SURFACES AGAINST WHICH CONCRETE ARE TO BE PLACED SHALL BE MOISTENED.

4. THE FALL OF THE CONCRETE SHALL BE BROKEN BEFORE IT DROPS ON THE CONDUIT. CARE MUST BE EXERCISED IN THE PUDDLING OF THE CONCRETE, TO ELIMINATE VOIDS BETWEEN THE CONDUITS.

5. STUBS SHALL NOT BE ENCASED 3' FROM THE STUB END.

5. THE TRENCH AND CONDUIT SHALL BE INSPECTED BY NOVEC PRIOR TO AND DURING THE POURING OF THE CONCRETE; NOVEC SCHEDULER MUST BE CONTACTED 2 WORKING DAYS PRIOR TO NEEDING INSPECTION. FOR JOB SITES IN EASTERN PRINCE WILLIAM COUNTY CALL: 703-392-1715. FOR JOB SITES NORTH OF ROUTE 50 IN LOUDOUN COUNTY CALL: 703-669-6070. FOR ALL OTHER AREAS CALL: 703-754-6784.
PVC CONDUIT 10’ LENGTH

UD2010 - 1"
UD2020 - 2"
UD2025 - 2 ½"
UD2030 - 3"

UD2040 - 4"
UD2060 - 6"
UD2080 - 8"

END CAPS

UDC2 - 2"
UDC25 - 2 ½"
UDC3 - 3"
UDC4 - 4"
UDC6 - 6"

UDC8 - 8"

PVC CONDUIT 20’ LENGTH (FOR BORING ONLY)

UD2360 - 6"
UD2380 - 8"

PVC CONDUIT ASSEMBLIES

NOVEC
(NORTHERN VIRGINIA ELECTRIC COOPERATIVE)
Adapter Couplings

UDA325 - 2 1/2" TO 3"
UDA46 - 4" TO 6"
UDA68 - 6" TO 8"

Couplings

UDCC2 - 2"
UDCC25 - 2 1/2"
UDCC3 - 3"
UDCC4 - 4"
UDCC6 - 6"
UDCC8 - 8"

End Bell Flares

UF2.5 - 2 1/2"
UF3 - 3"
UF4 - 4"
UF6 - 6"

UF8 - 8"

UL Rated, Gray, PVC Conduit Couplings and Adapters

NOVEC
Northern Virginia Electric Cooperative
CORRECT
GROUND WIRE OPPOSITE SIDE OF SCREW

INCORRECT
GROUND WIRE SAME SIDE AS SCREW

GROUND ROD FOR
PAD MOUNT EQUIPMENT
4" ELECTRONIC BALL MARKER

ELECTRONIC MARKER
WARNING ELECTRIC LINE BURIED BELOW

TO BE INSTALLED CONTINUOUSLY OVER AND APPROXIMATELY 12" ABOVE ALL BURIED CABLE AND CONDUIT.

FOR CUSTOMER INSTALLED CONDUIT, NOVEC SHALL SUPPLY WARNING TAPE AT TIME OF INSPECTION PRIOR TO BACKFILLING.
BECOME ELECTRIC
BEFORE DIGGING IN THIS AREA CALL 811

RED STUB MARKER

WARNING STICKER DETAIL

EXISTING GRADE LEVEL

24"

ANCHOR ROD

SEE INSTALLATION DRAWING ID-CS1-DB & ID-CS1-UC FOR ADDITIONAL INFORMATION

UNDERGROUND CABLE AND CONDUIT
STUB MARKER
INSTALLATION DRAWING FOR CONDUIT STUB

RED "NOVEC" WARNING TAPE TO BE BROUGHT STRAIGHT UP AND OUT OF THE GROUND OVER ALL STUB LOCATIONS.

DETECTABLE PULL TAPE SHALL HAVE ADDITIONAL SLACK INSIDE CONDUIT THEN SECURELY ATTACHED TO PLASTIC CONDUIT PLUG AND TO HAVE A CONTINUOUS TAIL BROUGHT STRAIGHT UP OUT OF THE GROUND AND TIED OFF TO THE ABOVE GROUND STUB MARKER.
SEE INSTALLATION DRAWING ID—RC1 FOR ADDITIONAL INFORMATION
NOTES
1. THE CONDUIT, (GREY, SCHEDULE 40 PVC, UL RATED,) CONDUIT MARKER (RED PLASTIC MARKER), RED ELECTRONIC MARKER, WARNING TAPE, END CAPS AND GLUE WILL BE SUPPLIED BY NOVEC, BUT INSTALLED BY THE DEVELOPER.
2. UNDER ROAD SURFACES THE COVER TO TOP OF CONDUIT SHALL BE A MINIMUM OF 36". OUTSIDE OF ROAD SURFACES THE COVER TO TOP OF CONDUIT SHALL BE A MINIMUM OF 36" TO FINISHED GRADE AND MUST ADHERE TO LOCAL, COUNTY AND/OR STATE ROAD CROSSING SPECIFICATIONS.
3. A MINIMUM OF 12" HORIZONTAL AND VERTICAL SEPARATION BETWEEN NOVEC FACILITIES AND “ALL” OTHER UTILITIES IN ALL PUBLIC AND ROAD RIGHT OF WAYS.
4. THE EXACT LOCATION OF THE ROAD CROSSINGS TO INCLUDE SIZE AND QUANTITY WILL BE SPECIFIED BY NOVEC.
5. CONDUIT WILL BE INSTALLED TO A DISTANCE OF 5' BEHIND THE ROAD RIGHT OF WAY ON TO PRIVATE PROPERTY.
6. ALL CONDUIT WILL BE CAPPED AT THE ENDS, ALL JOINTS ARE TO BE GLUED AND ELECTRONIC MARKERS INSTALLED.
7. DEVELOPER SHALL SUPPLY AND INSTALL DETECTABLE PULL TAPE.
8. TO ENSURE PROPER DEPTHS VARIOUS SWEEPS ARE AVAILABLE UPON REQUEST FROM NOVEC.
EXISTING UTILITY POLE

PLASTIC CONDUIT PLUG

12" ABOVE GRADE
(ADDITIONAL CONDUIT MAY NEED TO BE ADDED OR REMOVED TO BRING TO PROPER HEIGHT.)

FINAL GRADE

WARNING TAPE

DETECTABLE PULL TAPE SHALL BE SECURELY ATTACHED TO PLASTIC CONDUIT PLUG. INCLUDE APPROX. 5' OF ADDITIONAL TAPE TO FACILITATE FUTURE CABLE PULLING.

INSTALLATION DRAWING FOR CONDUIT POLE RISER
EQUIPMENT
NOTES:
1. BOLLARDS SHALL BE INSTALLED AROUND ALL PADMOUNTED EQUIPMENT THAT IS EXPOSED TO VEHICULAR TRAFFIC.
2. ALL BOLLARD LOCATIONS SHALL BE APPROVED BY NOVEC PRIOR TO INSTALLATION.
3. FOR PROPER POSITIONING REFER TO SPECIFICATION ID–BL.
4. BOLLARDS SHALL BE INSTALLED AT A MINIMUM OF 18” FROM A POLE.

CONCRETE CAP

6” (MINIMUM) STEEL PIPE FILLED WITH CONCRETE

BOLLARD SHALL BE PAINTED YELLOW OR WHITE

CONCRETE

FINAL GRADE

FINAL GRADE

48” MINIMUM

30” MINIMUM

INSTALLATION DRAWING FOR BOLLARD INSTALLATION
NOTES:
1. BOLLARDS SHALL BE INSTALLED AROUND ALL PADMOUNTED EQUIPMENT THAT IS EXPOSED TO VEHICULAR TRAFFIC.

2. BOLLARDS SHALL NOT INTERFERE WITH THE OPENING OF ANY AND ALL ACCESS DOORS OF THE PADMOUNT EQUIPMENT.

3. INSTALLATION OF BOLLARDS SHALL BE COMPLETE BEFORE THE PRIMARY CABLE IS ENERGIZED.

4. ALL BOLLARD LOCATIONS SHALL BE APPROVED BY NOVEC PRIOR TO INSTALLATION.

5. FOR PROPER INSTALLATION REFER TO ID-B.
NOTES:
1. COMBUSTIBLE WALLS ARE DEFINED AS HAVING A FIRE RESISTANCE RATING OF LESS THAN ONE HOUR.

2. TRANSFORMER PADS SHALL BE LOCATED OUTSIDE OF THE SHADED AREA "A".

3. BUILDINGS OF THREE FLOORS OR LESS; "A" SHALL BE MEASURED FROM OUTER EDGE OF ALL OVERHANGS.

4. BUILDINGS OF FOUR OR MORE FLOORS; "A" SHALL BE MEASURED FROM THE BUILDING WALL.

5. FOR CLEARANCE PURPOSES, FIRE ESCAPES, OUTSIDE STAIRS, AND COVERED WALKWAYS ATTACHED TO OR BETWEEN BUILDINGS, SHALL BE CONSIDERED AS PART OF THE BUILDING.

6. FRONT OF TRANSFORMER SHALL NOT FACE WALL AND REMAIN OPEN AND ACCESSIBLE. FOR OTHER CLEARANCES AROUND TRANSFORMERS SEE DRAWING ID–TC1.

7. IF CLEARANCE "A" CANNOT BE OBTAINED, REFER TO ID–BW FOR CLEARANCES.

<table>
<thead>
<tr>
<th>TRANS. KVA</th>
<th>1–PH</th>
<th>3–PH</th>
<th>DIST. &quot;A&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>25–167</td>
<td>X</td>
<td></td>
<td>10 FT</td>
</tr>
<tr>
<td>75–500</td>
<td>X</td>
<td></td>
<td>20 FT</td>
</tr>
<tr>
<td>500–2500</td>
<td>X</td>
<td></td>
<td>30 FT</td>
</tr>
</tbody>
</table>

INSTALLATION DRAWING FOR CLEARANCES OF PADMOUNT TRANSFORMERS TO COMBUSTIBLE WALLS
NOTES:
1. NONCOMBUSTIBLE WALLS ARE DEFINED AS HAVING A FIRE RESISTANCE RATING EQUAL TO OR GREATER THAN ONE HOUR.

2. TRANSFORMER PADS SHALL BE LOCATED OUTSIDE OF THE SHADED AREA "A".

3. BUILDINGS OF THREE FLOORS OR LESS; "A" SHALL BE MEASURED FROM OUTER EDGE OF ALL OVERHANGS.

4. BUILDINGS OF FOUR OR MORE FLOORS; "A" SHALL BE MEASURED FROM THE BUILDING WALL.

5. FRONT OF TRANSFORMER SHALL NOT FACE WALL AND REMAIN OPEN AND ACCESSIBLE. FOR OTHER CLEARANCES AROUND TRANSFORMERS SEE DRAWING ID–TC1.

6. IF CLEARANCE "A" CANNOT BE OBTAINED, REFER TO ID–BW FOR CLEARANCES.

INSTALLATION DRAWING FOR CLEARANCES OF PADMOUNT TRANSFORMERS TO NONCOMBUSTIBLE WALLS
NOTES:
1. THE FIRE BARRIER SHALL HAVE A MINIMUM FIRE RESISTANCE RATING OF ONE HOUR.
2. ALL FIRE BARRIERS SHALL BE FREE STANDING AND NOT CONNECTED TO ANY STRUCTURE.
3. ALL FIRE BARRIERS FOR COMBUSTIBLE WALLS SHALL EXTEND A MINIMUM OF ONE FOOT ABOVE THE TOP OF THE TRANSFORMER.
APPARATUS                "A" DIMENSION  "B" DIMENSION
TRANSFORMER               5'           5'
SINGLE PHASE ENCLOSURE   5'           5'
THREE PHASE ENCLOSURE    10'          5'
PAD MOUNT SWITCH GEAR    5'           10'

NOTES:
1. STRUCTURES OR PLANTS SHALL NOT BE PLACED WITHIN THE ABOVE DEFINED AREA FOR THE GIVEN APPARATUS. VIOLATIONS ARE SUBJECT TO REMOVAL WITHOUT NOTIFICATION.

2. THE INSTALLATION OF BOLLARDS SHALL BE REQUIRED IN HEAVY VEHICULAR TRAFFIC AREAS. LOCATION OF BOLLARDS SHALL BE DESIGNATED BY NOVEC.
TO ENSURE ACCESSIBILITY, PADS FOR SINGLE PHASE TRANSFORMERS AND SINGLE PHASE ENCLOSURES SHALL BE INSTALLED ON 4” OF ADDITIONAL ROCK DUST OR SUITABLE BACKFILL.

CONCRETE PAD FOR SINGLE PHASE TRANSFORMER OR ENCLOSURE
CONDUIT SHALL BE LEVEL WITH TOP OF PAD
(ADDITIONAL CONDUIT MAY NEED TO BE
ADDED TO BRING TO PROPER HEIGHT.)

PLASTIC CONDUIT PLUG
(TYPICAL OF ALL CONDUITS)

PAD TO BE INSTALLED ON 4" OF
ADDITIONAL ROCK DUST OR SUITABLE
BACKFILL.

FINAL GRADE

J O I N T S  T O  B E  G L U E D
(TYPICAL OF ALL CONDUITS)

WARNING TAPE

90° SWEEP
(TYPICAL OF ALL CONDUITS)

J O I N T S  T O  B E  G L U E D
(TYPICAL OF ALL CONDUITS)

INSTALLATION DRAWING FOR
CONDUIT AND SINGLE PHASE
TRANSFORMER PAD

NOVEC
(NORTHERN VIRGINIA ELECTRIC COOPERATIVE)

ID-PT1
CONDUIT SIZE, NUMBER AND LAYOUT WILL VARY PER DESIGN

GROUND ROD

CONDUIT SHALL BE LEVEL WITH TOP OF PAD (ADDITIONAL CONDUIT MAY NEED TO BE ADDED TO BRING TO PROPER HEIGHT.)

PLASTIC CONDUIT PLUG (TYPICAL OF ALL CONDUITS)

PAD TO BE INSTALLED ON 4" OF ADDITIONAL ROCK DUST OR SUITABLE BACKFILL

FINAL GRADE

JOINTS TO BE GLUED (TYPICAL OF ALL CONDUITS)

WARNING TAPE

90' SWEEP (TYPICAL OF ALL CONDUITS)

JUNCTURES TO BE GLUED (TYPICAL OF ALL CONDUITS)

TOP VIEW

1/4" x 8" COPPERCLAD GROUND ROD AND GROUND ROD CONNECTOR. THE GROUND ROD SHALL BE LEVEL WITH TOP OF THE PAD AND INSTALLED WITH 3" OF RADIAL CLEARANCE FOR ACCESSIBILITY WHENEVER POSSIBLE.

FINAL GRADE

WARNING TAPE

50"

40"

26.5"

8"

3"

INSTALLATION DRAWING FOR CONDUIT AND SINGLE PHASE ENCLOSURE PAD
INSTALL PRIMARY CONDUITS AS FAR LEFT AND AS CLOSE TO THE FRONT OF OPENING AS POSSIBLE.

LIFTING ANCHORS (4 EACH)

INSTALL SECONDARY CONDUITS AS FAR RIGHT AND AS CLOSE TO THE FRONT OF OPENING AS POSSIBLE.

GROUND ROD (SEE NOTE 5)

FINAL GRADE

4" MIN.

6"

(SEE NOTE 4)

10"

10"

PRIMARY

SECONDARY

21-A GRAVEL (SEE NOTE 3)

NOTES:
1. APPROVED MANUFACTURERS:
   ROTONDO PRECAST: P/N: NOVEC 75-500KVA
   5115 MASSAPONAX CHURCH RD.
   FREDERICKSBURG, VA 22407
   PHONE: 540-898-6300

   SMITH–MIDLAND: P/N: UPDT876
   5119 CATLETT RD.
   MIDLAND, VA 22728
   PHONE 540-439-3266

2. APPROXIMATE WEIGHT: 8550 LBS.

3. ANY DISTURBED EARTH OR FILL SHALL BE COMPACTED PRIOR TO INSTALLING PAD. A 4" BASE OF 21-A COMPACTED GRAVEL IS REQUIRED.

4. ALL CONDUIT SHALL BE CUT OFF FLUSH WITH THE TOP OF THE CONCRETE PAD.

5. INSTALL A 3/4" X 8" COPPERCLAD GROUND ROD AND GROUND ROD CONNECTOR APPROXIMATELY WHERE SHOWN. THE GROUND ROD SHALL BE DRIVEN TO WITHIN 6" OF GROUND LEVEL, AND INSTALLED ON THE PRIMARY SIDE OF THE OPENING, WITH 3" OF RADIAL CLEARANCE FOR ACCESSIBILITY.

6. BOLLARDS SHALL BE INSTALLED IN TRAFFIC AREAS. REFER TO ID–BL AND ID–B FOR INSTALLATION.

CONCRETE PAD FOR 75 TO 500 KVA
THREE PHASE TRANSFORMER

By       Checked       Approved       Date
Original  P             HPZ            11/01/07
Revision  P             HPZ            06/16/09
Revision  KJB           HPZ            12/06/13

UP1003
NOTES:

1. APPROVED MANUFACTURERS:
   - ROTONDO PRECAST: P/N: NOVEC 750–2500KVA
     5115 MASSAPONAX CHURCH RD.
     FREDERICKSBURG, VA 22407
     PHONE: 540–898–6300
   - SMITH–MIDLAND: P/N: UPDT–89
     5119 CATLETT RD.
     MIDLAND, VA 22728
     PHONE 540–439–3266

2. APPROXIMATE WEIGHT: 12375 LBS.

3. ANY DISTURBED EARTH OR FILL SHALL BE COMPACTED PRIOR TO INSTALLING PAD. A 4" BASE OF 21–A COMPACTED GRAVEL IS REQUIRED.

4. ALL CONDUIT SHALL BE CUT OFF FLUSH WITH THE TOP OF THE CONCRETE PAD.

5. INSTALL A 3/4" X 8" COPPERCLAD GROUND ROD AND GROUND ROD CONNECTOR APPROXIMATELY WHERE SHOWN. THE GROUND ROD SHALL BE DRIVEN TO WITHIN 6" OF GROUND LEVEL, AND INSTALLED ON THE PRIMARY SIDE OF THE OPENING, WITH 3" OF RADIAL CLEARANCE FOR ACCESSIBILITY.

6. BOLLARDS SHALL BE INSTALLED IN TRAFFIC AREAS. REFER TO ID–BL AND ID–B FOR INSTALLATION.
90° SWEEP CUT OFF, LEAVING CONDUIT 6" INTO BOTTOM OF HANDHOLE.

ALTERNATE CONDUIT LAYOUT USING 1" HDPE INSTEAD OF SCH 40 PVC

24"

FINAL GRADE

1" HDPE SDR 13.5 CONDUIT

PROPOSED DUCT TO FEED LIGHT POLE

PROPOSED LIGHT POLE

PLASTIC CONDUIT PLUG (TYPICAL OF ALL CONDUITS)

HANDHOLE TO BE INSTALLED AT OR SLIGHTLY ABOVE FINAL GRADE (TO BE INSTALLED 24" FROM PROPOSED LIGHT LOCATION)

Joints to be glued (typical of all conduits)

Electronic marker

Detectable pull tape shall be securely attached to plastic conduit plug. Include approx. 5' of additional tape to facilitate future cable pulling. (typical of all conduits)
WARNING

CONDUIT SIZE, NUMBER AND LAYOUT WILL VARY PER DESIGN

GRADE LINE MARK TO BE EVEN WITH FINAL GRADE.

PLASTIC CONDUIT PLUG (TYPICAL OF ALL CONDUITS)

FINAL GRADE

6" ABOVE BOTTOM OF PEDESTAL

3" OF COVER TO BE ADDED TO BOTTOM OF PEDESTAL

WARNING TAPE

WARNING TAPE

JOINTS TO BE GLUED (TYPICAL OF ALL CONDUITS)

90° SWEEP (TYPICAL OF ALL CONDUITS)

DETECTABLE PULL TAPE SHALL BE SECURELY ATTACHED TO PLASTIC CONDUIT PLUG. INCLUDE APPROX. 5' OF ADDITIONAL TAPE TO FACILITATE FUTURE CABLE PULLING. (TYPICAL OF ALL CONDUITS)

INSTALLATION DRAWING FOR CONDUIT AND PEDESTAL
NOTES:
1. SET PULL BOX ON A LEVEL 6" LAYER OF #57 GRAVEL FOR DRAINING PURPOSES.
2. BEFORE BACKFILLING AND COMPACTING, MAKE SURE COVERS ARE IN PLACE AND SECURE. LAYER 6" TO 8" OF BACKFILL AROUND THE PULLBOX. TAMPER EACH INDIVIDUAL LAYER OF BACKFILL. CONTINUE THE LAYERING AND TAMPERING UNTIL FINAL GRADE IS REACHED.
3. END BELL FLARES SHALL BE INSTALLED ON ALL CONDUITS IN PULL BOX AND SHOULD FIT FLUSH AGAINST THE INTERIOR WALL. SHALL BE PLUGGED AND SHALL HAVE DETECTABLE PULL TAPE INSTALLED.
4. ANY CONDUIT AND RELATED EQUIPMENT INSTALLED BY THE BUILDER SHALL BE INSPECTED BY A NOVEC REPRESENTATIVE AND APPROVED BEFORE ANY BACKFILLING IS DONE. FAILURE TO DO SO WILL RESULT IN EXPOSING ANY AREA NOT INSPECTED.
5. NUMBER AND SIZES OF CONDUITS TO BE SPECIFIED BY THE DISTRIBUTION ENGINEERING DEPARTMENT.
6. ALL INSTALLED CONDUITS MUST BE UL RATED SCHEDULE 40 GRAY PVC.
7. LARGE PULL BOX (UP1048) SHALL BE USED WHEN PULLING FEEDER CABLE. SMALL PULL BOX (UP1047) SHALL BE USED WHEN PULLING DISTRIBUTION CABLE.
8. APPROXIMATE WEIGHT IS 680 LBS.
9. NOT TRAFFIC RATED.
END BELL FLARES AND PLASTIC CONDUIT PLUG (TYPICAL OF ALL CONDUITS)

TOP VIEW

PARKING LOT GRADE

7", 5" & 3" KNOCKOUTS TYPICAL ALL SIDES

CENTER LID SUPPORT

SUMP

PULLING EYES (2X)

DRAINS (4X)

DETECTABLE PULL TAPE SHALL BE SECURELY ATTACHED TO PLASTIC CONDUIT PLUG. INCLUDE APPROX. 5' OF ADDITIONAL TAPE TO FACILITATE FUTURE CABLE PULLING. (TYPICAL OF ALL CONDUITS)

COMPACTED FILL (SEE NOTE 3)

WARNING TAPE

6" OF COMPACTED #57 GRAVEL

EXTEND GRAVEL 12" MIN. ON ALL SIDES

NOTES:
1. SET PULL BOX ON A LEVEL 6" LAYER OF COMPACTED #57 GRAVEL FOR DRAINING PURPOSES.
2. TOP OF BOX SHALL BE FLAT AND LEVEL WITH THE FINAL PARKING LOT GRADE.
3. BEFORE BACKFILLING AND COMPACTING, MAKE SURE COVERS ARE IN PLACE AND SECURE. LAYER 6" TO 8" OF BACKFILL AROUND THE PULLBOX. TAMPER EACH INDIVIDUAL LAYER OF BACKFILL. CONTINUE THE LAYERING AND TAMPERING UNTIL FINAL GRADE IS REACHED.
4. END BELL FLARES SHALL BE INSTALLED ON ALL CONDUITS IN PULL BOX, SHOULD FIT FLUSH AGAINST THE INTERIOR WALL, SHALL BE PLUGGED, AND SHALL HAVE DETECTABLE PULL TAPE INSTALLED.
5. ANY CONDUIT AND RELATED EQUIPMENT INSTALLED BY THE BUILDER SHALL BE INSPECTED BY A NOVEC REPRESENTATIVE AND APPROVED BEFORE ANY BACKFILLING IS DONE. FAILURE TO DO SO WILL RESULT IN EXPOSING ANY AREA NOT INSPECTED.
6. NUMBER AND SIZES OF CONDUITS TO BE SPECIFIED BY THE DISTRIBUTION ENGINEERING DEPARTMENT.
7. ALL INSTALLED CONDUITS MUST BE UL RATED SCHEDULE 40 GRAY PVC.
8. APPROXIMATE WEIGHT: 894 lbs.

INSTALLATION DRAWING FOR PARKING LOT RATED SMALL PULL BOX (UP1047T)

NOVEC
NORTHERN VIRGINIA ELECTRIC COOPERATIVE

By Checked Approved Date
Original HPZ 1/29/07
Revision
Revision
Revision

ID-PBST
CONCRETE PAD SHALL BE SUPPORTED BY FINAL GRADE.

SEE ID-PBS
(UP1047)

UP1014

FINAL GRADE

STRUCTURAL PAD SHALL BE SUPPORTED BY FINAL GRADE.

UP1045

PLASTIC CONDUIT PLUG
(TYPICAL OF ALL CONDUITS)

5'0"

WARNING TAPE

SIDE VIEW

UP1014 AND UP1045

GROUND ROD

3'0"

2'-6"

(up to 4'0"

CONDUITS ARE TO BE INSTALLED BETWEEN PULL BOX AND FIBERGLASS BOX PAD. (NUMBER AND SIZE TO BE DETERMINED BY NOVEC)

6" LAYER OF #57 GRAVEL

45" SWEEP
(TYPICAL OF ALL CONDUITS)

DETECTABLE PULL TAPE SHALL BE SECURELY ATTACHED TO PLASTIC CONDUIT PLUG. INCLUDE APPROX. 5' OF ADDITIONAL TAPE TO FACILITATE FUTURE CABLE PULLING.
(TYPICAL OF ALL CONDUITS)

43" 37"

31" 25.5"

32" 51.5"

57"

3/4" x 8' COPPERCLAD GROUND ROD, GROUND ROD CONNECTOR AND #4 BARE SOFT DRAWN SOLID COPPER GROUND WIRE. THE GROUND ROD SHALL BE 4" ABOVE BOTTOM OF PAD IN A CORNER OF THE BOX PAD. THE GROUND WIRE SHALL BE SECURELY CONNECTED TO THE GROUND ROD WITH 6' OF WIRE COILED ABOVE THE SOIL INSIDE THE BOX PAD.

ALL PULLING SHALL BE DONE WITHIN THE PULL BOX. THE SHORT RUNS IN THE ENCLOSURE BOX PAD ARE TO BE PUSHED IN AFTER THE CABLE HAS BEEN PULLED INTO THE PULL BOX.

INSTALLATION DRAWING FOR 3 PHASE ENCLOSURE BOX PAD AND CONCRETE PAD

NOVEC
(NORTHERN VIRGINIA ELECTRIC COOPERATIVE)

<table>
<thead>
<tr>
<th>By</th>
<th>Checked</th>
<th>Approved</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original</td>
<td>KJB</td>
<td>MLH</td>
<td>01/26/04</td>
</tr>
<tr>
<td>Revision</td>
<td>KJB</td>
<td>MLH</td>
<td>11/29/04</td>
</tr>
<tr>
<td>Revision</td>
<td>KJB</td>
<td>MLH</td>
<td>12/12/05</td>
</tr>
<tr>
<td>Revision</td>
<td>KJB</td>
<td>MLH</td>
<td>01/13/06</td>
</tr>
</tbody>
</table>
APPROXIMATE WEIGHT 1300 LBS

PLAN VIEW

1/4" STRAND LIFT LOOPS

1/2" Ø NC PLASTIC INSERTS

SIDE VIEW

CONCRETE PAD FOR THREE PHASE ENCLOSURE
UP1001, UP1003, OR UP1004
(REFER TO PROPER DRAWING FOR YOUR
APPLICATION; ALSO SEE DETAIL "A")

CONCRETE PAD SHALL BE
SUPPORTED BY FINAL GRADE

5' MIN.
10' MAX.

CONDUIT PLUG
(TYPICAL BOTH ENDS)

6" LAYER OF
#57 GRAVEL

SEE NOTE 1

WARNING TAPE

SEE NOTE 3

ALL JOINTS
TO BE GLUED

45° SWEEP

SEE NOTE 2

90° SWEEP

90° SWEEP

PRIMARY CONDUIT SHALL
ONLY BE INSTALLED ON
THE LEFT SIDE OF PAD

CONDUIT AMOUNT, SIZE
AND LAYOUT WILL BE
DETERMINED BY A
NOVEC REPRESENTATIVE

GROUND ROD
SEE NOTE 3

SINGLE PHASE
PAD

RIGHT

SECONDARY CONDUIT SHALL
ONLY BE INSTALLED ON THE
RIGHT SIDE OF PAD

3"

ALL CONDUIT SHALL BE LEVEL WITH
THE TOP OF THE PAD.
(ADDITIONAL CONDUIT MAY BE ADDED
TO ACHIEVE PROPER HEIGHT)

DETAIL "A"

Back

Front

Notes:

1. DETECTABLE PULL TAPE SHALL BE SECURELY ATTACHED TO PLASTIC CONDUIT PLUG. INCLUDE APPROXIMATELY
5' OF ADDITIONAL TAPE TO FACILITATE FUTURE CABLE PULLING.

2. THE GROUND ROD SHALL BE INSTALLED IN A CORNER OF THE BOX PAD, 4" ABOVE THE BOTTOM OF
THE PAD. THE GROUND WIRE SHALL BE SECURELY CONNECTED TO THE GROUND ROD, 6 FEET OF WIRE
SHALL BE COILED INSIDE THE BOX PAD, ABOVE GROUND LEVEL.

3. THE GROUND ROD SHALL BE DRIVEN LEVEL WITH THE TOP OF THE PAD, AND INSTALLED WITH 3" OF RADIAL
CLEARANCE FOR ACCESSIBILITY. FOR THREE PHASE APPLICATIONS SEE DRAWING UP1003 OR UP1004

Installation drawing for
three phase enclosure
to transformer pad
3/4" x 8' COPPER CLAD GROUND ROD, GROUND ROD CONNECTOR AND #4 BARE SOFT DRAWN SOLID COPPER GROUND WIRE. THE GROUND ROD SHALL BE 4" ABOVE BOTTOM OF PAD IN A CORNER OF THE BOX PAD. THE GROUND WIRE SHALL BE SECURELY CONNECTED TO THE GROUND ROD WITH 6' OF WIRE COILED ABOVE THE SOIL INSIDE THE BOX PAD.

THE TOP OF BOX PAD SHALL BE INSTALLED 3" ABOVE FINISHED GRADE.

PLASTIC CONDUIT PLUG (TYPICAL OF ALL CONDUITS)

SEE ID-PBS (OPT047)

FINAL GRADE

SWITCH GEAR OR METER CABINET BOX PAD

6" LAYER OF #57 GRAVEL

22' SWEEP (TYPICAL OF ALL CONDUITS)

Joints to be glued (TYPICAL OF ALL CONDUITS)

WARNING TAPE

SIDE VIEW

DETECTABLE PULL TAPE SHALL BE SECURELY ATTACHED TO PLASTIC CONDUIT PLUG. INCLUDE APPROX. 5' OF ADDITIONAL TAPE TO FACILITATE FUTURE CABLE PULLING. (TYPICAL OF ALL CONDUITS)

SEE ID-PBS (OPT047)

5'-0"

91"

GROUND ROD

87"

FOUR (4), SIX (6) INCH CONDUITS ARE TO BE INSTALLED BETWEEN PULL BOX AND FIBERGLASS BOX PAD.

TOP VIEW

ALL PULLING SHALL BE DONE WITHIN THE PULL BOX. THE SHORT RUNS IN THE BOX PAD ARE TO BE PUSHED IN AFTER THE CABLE HAS BEEN PULLED INTO THE PULL BOX.

INSTALLATION DRAWING FOR SWITCH GEAR OR METER CABINET BOX PAD TO SMALL PULLBOX

NOVEC
(NORTHERN VIRGINIA ELECTRIC COOPORATIVE)

ID-PSB1

<table>
<thead>
<tr>
<th>By</th>
<th>Checked</th>
<th>Approved</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original</td>
<td>KJB</td>
<td>MLH</td>
<td>01/26/04</td>
</tr>
<tr>
<td>Revision</td>
<td>KJB</td>
<td>MLH</td>
<td>12/12/05</td>
</tr>
<tr>
<td>Revision</td>
<td>KJB</td>
<td>MLH</td>
<td>11/05/13</td>
</tr>
<tr>
<td>Revision</td>
<td>KJB</td>
<td>KMW</td>
<td>05/28/20</td>
</tr>
</tbody>
</table>
The top of the pull box shall be installed 3" above final grade.

Only when required, install a 3/4" x 8' copper clad ground rod and ground rod connector. 4" of ground rod with ground rod connector shall extend up through drain slot into pullbox. Normally no ground rod is installed.

Detectable pull tape shall be securely attached to plastic conduit plug. Include approx. 5' of additional tape to facilitate future cable pulling. (typical of all conduits)

Notes:
1. Set pull box on a level 6" layer of #57 gravel for draining purposes.
2. Before backfilling and compacting, make sure covers are in place and secure. Layer 6" to 8" of backfill around the pullbox. Tamp each individual layer of backfill. Continue the layering and tamping until final grade is reached.
3. End bell flares shall be installed on all conduits in pull box and should fit flush against the interior wall, shall be plugged and shall have pull string/tape installed.
4. Any conduit and related equipment installed by the builder shall be inspected by a NOVEC representative and approved before any backfilling is done. Failure to do so will result in exposing any area not inspected.
5. Number and sizes of conduits to be specified by the distribution engineering department.
6. All installed conduits must be UL listed (NATIONAL BOARD OF FIRE PROTECTION) and comply with all other local and state codes.
7. Large pull box (UP1048) shall be used when pulling feeder cable. Small pull box (UP1047) shall be used when pulling distribution cable.
8. Approximate weight is 1350 lbs.

Installation drawing for large pull box (UP1048)
3/8" x 8' COPPERCLAD GROUND ROD, GROUND ROD CONNECTOR AND #4 BARE SOFT DRAWN SOLID COPPER GROUND WIRE. THE GROUND ROD SHALL BE 4" ABOVE BOTTOM OF PAD IN A CORNER OF THE BOX PAD. THE GROUND WIRE SHALL BE SECURELY CONNECTED TO THE GROUND ROD WITH 6' OF WIRE COILED ABOVE THE SOIL INSIDE THE BOX PAD.

THE TOP OF BOX PAD SHALL BE INSTALLED 3" ABOVE FINISHED GRADE.

PLASTIC CONDUIT PLUG (TYPICAL OF ALL CONDUITS)

FINAL GRADE

WARNING TAPE

SWITCH GEAR OR METER CABINET BOX PAD

6" LAYER OF #57 GRAVEL

22" SWEEP (TYPICAL OF ALL CONDUITS)

LARGE PULLBOX (UP1048) CAN BE PLACED IN EITHER DIRECTION DEPENDING ON CONSTRUCTION PLAN LAYOUT. (SEE ID-PBL)

SIDE VIEW

5'-0"

91"

GROUND ROD

GROUNDED CONDUIT

AS MANY CONDUITS AS NECESSARY CAN BE INSTALLED BETWEEN PULL BOX AND FIBERGLASS BOX PAD, PULL BOX CAN BE CUT TO ACCOMMODATE THE ADDITIONAL CONDUITS.

TOP VIEW

ALL PULLING SHALL BE DONE WITHIN THE PULL BOX. THE SHORT RUNS IN THE BOX PAD ARE TO BE PUSHED IN AFTER THE CABLE HAS BEEN PULLED INTO THE PULL BOX.

INSTALLATION DRAWING FOR SWITCH GEAR OR METER CABINET BOX PAD TO LARGE PULL BOX
NOTES:
1. MANHOLE SHALL BE INSTALLED PLUMB AND LEVEL ON A MINIMUM OF 6" OF #57 GRAVEL. IF THIS CANNOT BE ACHIEVED THE SUMP SHALL BE ORIENTED TO THE LOWEST CORNER.

2. GROUND RODS SHALL BE CALLED FOR SEPARATELY USING ASSEMBLY# UPMH.GRD. THE GROUND RODS SHALL BE DRIVEN INTO UNDISTURBED EARTH IN OPPOSITE CORNERS OUTSIDE THE MANHOLE. 2/0 BARE CU GROUND WIRE SHALL BE ATTACHED TO THE GROUND RODS, THEN ROUTED THROUGH THE CONDUIT ACCESS BEFORE GROUTING. A MINIMUM OF 6" OF EXCESS WIRE SHALL BE COILED INSIDE THE MANHOLE, FOR ATTACHMENT TO THE GROUND LOOP.

3. USE END BELL FLARES AND GROUT SMOOTH AROUND CONDUITS AFTER MANHOLE WALL PENETRATION TO CREATE A WATER TIGHT SEAL.

4. ALL CONDUITS SHALL HAVE A MINIMUM OF 6" OF CONCRETE ENCASEMENT. THE CONCRETE SHALL HAVE A MINIMUM STRENGTH RATING OF 3000 PSI.

5. MANHOLE RING AND COVER SHALL BE ADJUSTED USING MORTAR AND A COMBINATION OF 6" AND 9" RISERS, TO A MAXIMUM OF 48" HIGH, TO SUIT SURFACE TREATMENT AND ELEVATION. SEE DRAWING UPMH.RISER_ FOR DETAILS.

6. MANHOLE LIDS SHALL HAVE THE LAST (3) THREE DIGITS OF THE MAP LOCATION ADDED BY; PAINTING OR WELDING A BEAD TO REPRESENT THE NUMBER.

7. FOR INTERIOR DETAILS REFER TO DRAWING ID—MH1
NOTES:

1. A CONTINUOUS LOOP OF 2/0 BARE CU WIRE SHALL BE INSTALLED INSIDE THE ENTIRE MANHOLE. THE BOTTOM BOLT OF THE CABLE SUPPORT BRACKET SHALL BE USED TO ATTACH THE LOOP TO THE WALL, OR THE LOOP MAY BE ATTACHED DIRECTLY TO BOTTOM BOLT HOLE WHEN BRACKET IS NOT USED.

2. TWO 3/4" X 8' GROUND RODS SHALL BE DRIVEN INTO UNDISTURBED EARTH IN OPPOSITE CORNERS OUTSIDE THE MANHOLE. GROUND RODS SHALL BE THEN CONNECTED TO 2/0 BARE CU GROUND WIRE, WHICH SHALL THEN BE ATTACHED TO THE 2/0 BARE CU GROUND LOOP INSIDE THE MANHOLE, USING TWO COMPRESSION CONNECTORS.

3. COMPLETED SPLICE SHALL BE SUPPORTED BETWEEN TWO CABLE SUPPORT ARMS.

4. WHENEVER POSSIBLE FEEDER CABLES SHALL BE LOOPED AROUND ENTIRE INSIDE OF MANHOLE, TO PROVIDE AS MUCH EXCESS CABLE AS POSSIBLE.

5. GROUND SPLICE ONLY WHEN REQUIRED. (SEE ID–GF1)
NOTES:
1. MANHOLE RING AND COVER SHALL BE ADJUSTED USING MORTAR AND A COMBINATION OF 6" AND 9" RISERS, TO SUIT SURFACE TREATMENT AND ELEVATION.

2. THE MAXIMUM NUMBER OF RISERS SHALL NOT EXCEED 4 EACH OF 9" OR A TOTAL OF 36" HIGH.

3. ALL JOINTS SHALL BE SEALED WITH AN APPROVED WATER RESISTANT JOINT SEALER.

4. GROUTING SHALL BE APPLIED TO THE OUTSIDE SEAM BETWEEN COVER AND TOP RISER.

6 AND 9 INCH RING RISERS FOR MANHOLES
METERS
METERING EQUIPMENT & TERMINATING SERVICES:

I. Residential Meter Bases:

**UNDERGROUND – 100 amp, 200 amp, 320 amp**

1. NOVEC shall terminate the service conductor on the line side of the meter base and the electrician is responsible for terminating the conductor on the load side of the meter base.
2. The left bottom knock-out of the meter base is reserved for NOVEC’s service conductors. The customer’s service must exit the meter base out the center bottom, right bottom, right back, or right side. The customer’s service shall not exit the left side of the meter base.
3. NOVEC shall provide the meter base which shall be mounted by the electrician at 54”, +/- 6” to the center of the glass above finished grade to keep the meter mounting height between 4’ and 6’.

**OVERHEAD- 100 amp, 200 amp, 320 amp, 400 amp**

1. NOVEC shall terminate the service conductors at the weather head. The electrician supplies and installs the service riser and the weather head. The electrician shall make all connections in the meter base.

II. Commercial Services:

NOVEC shall provide phase identification on all NOVEC service conductors.

**Single phase and three phase apartment/condo services:**

1. Gang type meter enclosures shall be provided by the customer.
2. NOVEC shall terminate its service conductors in the meter enclosure landing compartment.
Single phase and three phase services for retail sites: 
100amp, 200amp, 320amp, 400amp, 600amp

Single meter base services:

1. NOVEC shall terminate the service conductor on the line side of the meter base and the electrician is responsible for terminating the conductor on the load side of the meter base.

Multiple meters fed from a trough or tap box:

1. NOVEC shall terminate all conductors on the landing pads at the tap box or make all connections in the trough.
2. The electrician shall be responsible for terminating conductors in the meter bases after the tap box or trough.

Single phase or three phase, CT rated services:

1. NOVEC shall provide up to 30' of conductor after the CT cabinet or after entrance into the structure to the first switch or trough for large services using switch gear or indoor tap boxes in electric rooms. NOVEC shall mark phasing on each conductor with color coded tape. The electrician shall coordinate with NOVEC to be on site to verify the termination of service conductors at switchgear.

Color codes:

A- phase Red
B- phase Yellow
C- phase Blue
Neutral White

2. The electrician shall be responsible for providing the CT cabinet or CT compartment per NOVEC specifications. NOVEC shall provide the meter enclosure to be installed by the electrician. NOVEC shall install the metering equipment (meter, cable, CTs, PTs and test switch).
3. Where inside service points cannot be reached with 30' of cable, the metering equipment and termination point for NOVEC’s service shall be located on the outside of the building. NOVEC shall terminate all conductors on the landing pads at the tap box or CT cabinet.
MINIMUM CLEAR SPACE REQUIREMENTS
A. 7" FROM FINISHED GRADE TO LOWEST OBSTRUCTION.
B. 60" MEASURED FROM FACE OF METER.
C. 36" WIDE UNOBSURED TRAVEL WAY.
D. 2" ON BOTH SIDES OF METER TO ANY OPENING ON THE SAME PLANE INTO THE BUILDING OR SIDE OBSTRUCTION.
E. CENTER OF METER BASE GLASS SHALL BE INSTALLED AT 54" ± 6" ABOVE FINISHED GRADE.

SUPPORT REQUIREMENTS
* METER BASE SHALL BE ATTACHED TO DWELLING WITH 4 SCREWS (MINIMUM #10, 1" IN LENGTH).
* DRYWALL SCREWS ARE NOT ACCEPTABLE.
* METER BASE SHALL BE ATTACHED TO PLYWOOD, SOLID STUD, BRICK, BLOCK, OR CONCRETE BACKING SUBJECT TO NOVEC APPROVAL. ANCHORS MUST BE USED WHEN INSTALLING IN MASONRY OR CONCRETE.

METER BASES ON SINGLE FAMILY HOMES MUST BE WITHIN 10' OF THE CORNER CLOSEST TO THE DESIGNED ELECTRIC SOURCE OR THE CUSTOMER SHALL BE REQUIRED TO INSTALL CONDUIT. THE CONDUIT MUST EXTEND 6' BEYOND THE HOUSE TOWARDS THE SOURCE AS DESIGNATED BY NOVEC. (SEE ID-RM1 AND ID-BG002)

UNACCEPTABLE METERBASE LOCATIONS
* ELEVATED PLATFORMS.
* MOUNTED ON A CHIMNEY.
* UNDER DECKS LOWER THAN 7'.
* BELOW A WINDOW ACCESSIBLE TO THE GROUND.
* INSIDE FENCED AREAS WITH NO GATED ACCESS.
* LESS THAN 1' HORIZONTAL SEPARATION FROM GAS.
* INSIDE STRUCTURES EXCEPT IN APPROVED METER ROOMS.
* LESS THAN 3' FROM THE GAS METER VENT TO THE EDGE OF THE ELECTRIC METER GLASS.
* ANY AREA WHERE EQUIPMENT INHIBITS SAFE ACCESS OR OBLITERATES WORKING CLEARANCES.
* ANY AREA WHERE A DOOR MAY STRIKE THE METER/METERBASE.
REQUISITOS DE MÍNIMO ESPACIO LIBRE
A. 7’0” del nivel completo a la obstrucción más baja.
B. 60” medido del frente del contador.
C. 36” de ancho libre para camino de paso.
D. 2” en los dos lados al contador para cualquier abertura en el mismo plano entrando al edificio o obstrucción de lado.
E. El vidrio del centro de la base debe estar instalado a 54” ± 6” del nivel completo.

REQUISITOS DE SOPORTE
* La base del contador se tiene que soportar al edificio (vivienda) con 4 tornillos (mínimo #10, 1” de largo)
* Tornillos de mampostería no son aceptable (admisible)
* La base del contador se tiene que soportar con un tablero de varias capas, una tachuela solida, un ladrillo, un bloque, o con un respaldo (apoyo) concreto sujeto de ser aprobado por NOVEC. Sostenores se tienen que usar cuando se instala en mampostería o concreto.

Bases de contadores en casas individuales en terreno mas pequeños de 2.5 acres, tienen que estar dentro de 5’ de la esquina mas cercana del diseño fuente de energía o el cliente sera requerido a instalar conducto. El conducto tiene que extender 5’ mas allá de la casa para la fuente de energía como sea diseñado por NOVEC. (Mire ID-RM1 y ID-SC1)

LUGARES INADMISIBLES PARA LA BASE DEL CONTADOR
* Plataformas elevados.
* Montada en chimeneas.
* Debajo de terrazas mas bajas de 7’.
* Debajo de una ventana accesible a ras del suelo.
* Adentro de áreas con rejas sin acceso de puerta.
* Menos de 1’ de separacion horizontal del gas natural.
* Adentro de estructuras menos en cuartos de contadores aprobados.
* Menos de 3’ del contador de gas natural al borde del cristal del contador electrico.
* En cualquier area adonde equipos cohibe (impide) acceso seguro o obstruye los espacios de trabajo.
* En cualquier area adonde una puerta puede golpear al contador/la base del contador.
*4 SCREWS (MINIMUM), CORROSION RESISTANCE #10 1" IN LENGTH

*DRIYWALL SCREWS ARE NOT ACCEPTABLE

SOLID STUD

SOLID PLYWOOD BACKING

"ACTUAL METERBASE MAY VARY"

54" ± 6" CENTER OF THE GLASS
FINISHED GRADE

BRICK, BLOCK OR CONCRETE BACKING
(ANCHORS MUST BE USED)

UNACCEPTABLE METERBASE LOCATIONS
* ELEVATED PLATFORMS.
* MOUNTED ON A CHIMNEY.
* UNDER DECKS LOWER THAN 7'.
* BELOW A WINDOW ACCESSIBLE FROM THE GROUND.
* INSIDE FENCED AREAS WITH NO GATED ACCESS.
* LESS THAN 1’ HORIZONTAL SEPARATION FROM GAS.
* INSIDE STRUCTURES EXCEPT IN APPROVED METER ROOMS.
* LESS THAN 3’ FROM THE GAS METER VENT TO THE EDGE OF THE ELECTRIC METER GLASS.
* ANY AREA WHERE A DOOR MAY STRIKE THE METER/METERBASE.
* ANY AREA WHERE EQUIPMENT HINHIBITS SAFE ACCESS OR OBSTRUCTS WORKING CLEARANCES.

NOTES
* CENTER OF METERBASE GLASS SHALL BE INSTALLED AT 54" ± 6" ABOVE FINISHED GRADE.

INSTALLATION DRAWING FOR METER BASE INSTALLATION STICKER

By  Checked  Approved  Date
Original  KJB  MLH  SPEC COMMITTEE  02/04/02
Revision  KJB  MLH  SPEC COMMITTEE  06/15/04
Revision  KJB  MLH  SPEC COMMITTEE  01/13/06
Revision  KJB  KMW  SPEC COMMITTEE  05/21/19

ID-MBS
NOTES:
1. METER BASE FURNISHED BY NOVEC, INSTALLED BY CUSTOMER.
2. UM8025 (2-1/2" METER CONDUIT, 2" 90° SWEEP, 2" CONDUIT)
   UM8030 (3" METER CONDUIT, 2-1/2" 90° SWEEP, 2-1/2" CONDUIT)
   UM8035 (3-1/2" METER CONDUIT, 3" 90° SWEEP, 3" CONDUIT)
3. DITCH MUST BE TAMPED AT METER BASE BEFORE BACK FILLING.
4. SWEEP SHALL BE RESTING ON UNDISTURBED OR COMPACTED SOIL.
5. DITCH MUST BE BACK FILLED BEFORE METER BASE IS MADE UP.
6. CABLE MUST BE PUSHED DOWN TO THE BOTTOM OF THE METER BASE TO ALLOW FOR EARTH SETTLEMENT.
7. WRAP INNER CONDUIT WITH ELECTRICAL TAPE (2 FULL WINDINGS MIN.) WHERE THE METER CONDUIT AND INNER CONDUIT MEET. IMPORTANT: THIS WILL BE USED TO CHECK FOR CONDUIT SETTLEMENT.

MINIMUM RADIAL SEPARATION BETWEEN ELECTRICAL CONDUIT AND ALL OTHER UTILITIES SHALL BE TWELVE (12) INCHES. (UNLESS A JOINT USE AGREEMENT HAS BEEN ESTABLISHED. NOVEC SHALL MAINTAIN 12" SEPARATION BETWEEN GAS AT ALL TIMES)

CONDUIT SHALL BE INSTALLED ON LEFT SIDE OF METERBASE

PLASTIC INSULATING BUSHING AND METAL LOCKNUT MUST BE INSTALLED

PROVIDE AS MUCH SLACK AS POSSIBLE IN METER BASE

INNER CONDUIT MUST EXTEND INTO METER CONDUIT (GRAY SCHEDULE 40 UL RATED) A MINIMUM OF 12" AND A MAXIMUM OF 18" (NOT TO BE GLUED)

CONDUIT (BELL END) GRAY SCHEDULE 40 UL RATED PVC. (TO BE GLUED)

MINIMUM RADIAL SEPARATION BETWEEN ELECTRICAL CONDUIT AND ALL OTHER UTILITIES SHALL BE TWELVE (12) INCHES. (UNLESS A JOINT USE AGREEMENT HAS BEEN ESTABLISHED. NOVEC SHALL MAINTAIN 12" SEPARATION BETWEEN GAS AT ALL TIMES)

RESIDENTIAL UNDERGROUND METER RISER
NOTES:
1. METER BASE SHALL BE FURNISHED BY NOVEC, AND INSTALLED BY CUSTOMER.
2. FOR:
   2” CONDUIT, USE 2-1/2” METER RISER CONDUIT
   2-1/2” CONDUIT, USE 3” METER RISER CONDUIT
   3” CONDUIT, USE 3” SPECIAL METER RISER CONDUIT (AVAILABLE FROM NOVEC)
3. DITCH SHALL BE TAMPERED AT METER BASE BEFORE BACK FILLING.
4. ALL CONDUIT SHALL BE GRAY SCHEDULE 40 UL RATED PVC.
5. WRAP INNER CONDUIT WITH ELECTRICAL TAPE (2 FULL WINDINGS MIN.) WHERE THE METER CONDUIT AND INNER CONDUIT MEET. IMPORTANT: THIS WILL BE USED TO CHECK FOR CONDUIT SETTLEMENT.

MINIMUM RADIAL SEPARATION BETWEEN ELECTRICAL CONDUIT AND ALL OTHER UTILITIES SHALL BE TWELVE (12) INCHES.
(UNLESS A JOINT USE AGREEMENT HAS BEEN ESTABLISHED.)
NOVEC SHALL MAINTAIN 12” SEPARATION BETWEEN GAS AT ALL TIMES.

DETECTABLE PULL TAPE TO BE SECURELY ATTACHED TO METER BASE. INCLUDE APPROX. 5’ OF ADDITIONAL TAPE TO FACILITATE FUTURE CABLE PULLING.

INNER CONDUIT MUST EXTEND INTO OUTER METER CONDUIT A MINIMUM OF 12” AND A MAXIMUM OF 18” (NOT TO BE GLUED)

ADAPTOR, PLASTIC INSULATING BUSHING AND METAL LOCKNUT SHALL BE INSTALLED

CONDUIT SHALL BE INSTALLED ON LEFT SIDE OF METERBASE

CONDUIT & SWEET SHALL BE RESTING ON UNDISTURBED OR COMPACTED SOIL.

54”± 6" CENTER OF THE GLASS

SEE NOTE 5

F30” MINIMUM TOP OF CONDUIT

FINAL GRADE

WARNING TAPE

- 90° SWEEP
- 24” MINIMUM RADIUS

INSTALLATION DRAWING FOR METER BASE AND RISER PIPE
NOTES:
1) THE TRENCHES SHALL BE DUG SO THAT THE BOTTOM HAS A SMOOTH GRADE. LARGE ROCKS, STONES AND GRAVEL IN EXCESS OF 1 INCH SHALL BE REMOVED FROM THE BOTTOM OF THE TRENCH. WHERE REQUIRED, 6 INCHES OF BEDDING SHALL BE PLACED IN THE BOTTOM OF THE TRENCH BEFORE INSTALLING CONDUIT.

2) CONDUIT SHALL NOT BE INSTALLED IN DIRECT CONTACT WITH OTHER UTILITIES

CONDUIT SHALL BE CAPPED WITH PULL STRING INSTALLED.

ALL CONDUIT AND SWEEPS SHALL BE GRAY, SCHEDULE 40, UL RATED PVC.

CONDUIT SIZE SHALL BE DETERMINED BY NOVEC.

22° TO 90°, 24" MIN. RADIUS HORIZONTAL SWEEP

CONDUIT SHALL BE RESTING ON UNDISTURBED OR COMPACTED SOIL.

24" MIN. RADIUS 90° VERTICAL SWEEP AT BOTTOM OF METERBASE RISER TO BE INSTALLED IN METERBASE RISER (SEE ID-RM1 FOR DETAILS)

CONDUIT REQUIRED IF GREATER THAN 10' BACK FROM FARDEST HOUSE / PORCH STRUCTURE

INSTALLATION DRAWING FOR SERVICE CONDUIT FOR NON-STANDARD METER LOCATION ON DESIGNATED SIDE OF HOUSE

REVISIONS:
08-31-20 KJB - CHANGED 5' TO 10' BACK FROM FRONT OF HOUSE

ID-BG002
NOTES:

1) THE TRENCHES SHALL BE DUG SO THAT THE BOTTOM HAS A SMOOTH GRADE. LARGE ROCKS, STONES AND GRAVEL IN EXCESS OF 1 INCH SHALL BE REMOVED FROM THE BOTTOM OF THE TRENCH. WHERE REQUIRED, 6 INCHES OF BEDDING SHALL BE PLACED IN THE BOTTOM OF THE TRENCH BEFORE INSTALLING CONDUIT.

2) CONDUIT SHALL NOT BE INSTALLED IN DIRECT CONTACT WITH OTHER UTILITIES.

CONDUIT SHALL BE CAPPED WITH PULL STRING INSTALLED.

ALL CONDUIT AND SWEEPS SHALL BE GRAY, SCHEDULE 40, UL RATED PVC.

CONDUIT SIZE SHALL BE DETERMINED BY NOVEC.

22° TO 90°, 24" MIN. RADIUS HORIZONTAL SWEEP

5' MINIMUM DISTANCE BEYOND GREATEST EXTENSION FROM HOUSE / PORCH STRUCTURE

22° TO 90°, 24" MIN. RADIUS HORIZONTAL SWEEP

CONDUIT SHALL BE RESTING ON UNDISTURBED OR COMPACTED SOIL.

24" MIN. RADIUS 90° VERTICAL SWEEP AT BOTTOM OF METERBASE RISER TO BE INSTALLED IN METERBASE RISER (SEE ID—RM1 FOR DETAILS).

DESIGNATED METERBASE LOCATION

HOUSE

PORCH

4"x4" x6' POST

5' MINIMUM DISTANCE BEYOND GREATEST EXTENSION FROM HOUSE / PORCH STRUCTURE

INSTALLATION DRAWING FOR SERVICE CONDUIT FOR METER LOCATION ON NON—DESIGNATED SIDE OF HOUSE (LOCATION REQUIRES WRITTEN APPROVAL BY NOVEC)
NORTHERN VIRGINIA ELECTRIC COOPERATIVE
FREE STANDING METER INSTALLATION

NOVEC SUPPLIED METER SOCKET
SEE DRAWING ID-MB1FS
(200 OR 320 METERBASE CAN BE USED)

CUSTOMER SUPPLIED ADAPTER, BUSHING, & LOCKNUT

CUSTOMER SUPPLIED CONDUIT

7''

TO CUSTOMER LOAD

CONDUIT TRENCH

90° SWEEP 24'' MINIMUM RADIUS

CONDUIT & SWEEP SHALL REST ON UNDISTURBED OR COMPACTED SOIL

FINAL GRADE

30'' MINIMUM TO TOP OF CONDUIT

WARNING TAPE

TO NOVEC SOURCE

MATERIALS:

NOVEC SUPPLIED:

1—METER SOCKET
1—7'' POST
1—WARNING TAPE

CUSTOMER SUPPLIED:

1—MALE CONDUIT ADAPTER
1—PLASTIC INSULATING BUSHING
1—METAL LOCKNUT FOR CONDUIT
1—MAIN DISCONNECT

AS REQ.—PVC CONDUIT (SIZE & LENGTH SPECIFIED BY NOVEC)

ALL MATERIAL LISTED TO BE INSTALLED BY CUSTOMER

INSTALLATION DRAWING FOR SINGLE PHASE METER FREE STANDING

ID-MFS
NOTES:
1. TEMPORARY SERVICE STRUCTURES MUST BE STRONGLY BUILT TO WITHSTAND THE STRAINS IMPOSED BY THE ATTACHED EQUIPMENT. BACKBOARD MUST BE BUILT USING A MINIMUM 3/4" RIGID MATERIAL AND MUST BE TREATED FOR OUTDOOR USE.
2. SERVICE STRUCTURES ARE TO BE A MINIMUM OF 6 FEET FROM THE SOURCE. THE EXACT LOCATION OF THE STRUCTURE SHALL BE APPROVED BY NOVEC.
3. THE STRUCTURE MUST BE INSPECTED BY THE COUNTY ELECTRICAL INSPECTOR OR WHERE APPLICABLE, OR A SIGNED "FARM" SERVICE AGREEMENT MUST BE ON FILE, PRIOR TO THE INSTALLATION OF A METER BY NOVEC.
4. THE POST SHALL BE A MINIMUM 4X4 OR A POLE WITH A MINIMUM DIA. OF 6" AND SHALL BE TREATED FOR OUTDOOR USE. POST SHALL BE SET A MINIMUM OF 3' DEEP.
5. GROUND WIRE SHALL BE INSTALLED PER COUNTY REQUIREMENTS AND SHALL BE SECURELY FASTENED TO POST.
6. GROUND RODS SHALL BE INSTALLED PER COUNTY REQUIREMENTS WITH THE TOP OF THE ROD BELOW GRADE.
7. METER RISER (SEE ID-RM1) AND ALL CONDUIT SHALL BE INSTALLED BY THE CUSTOMER UNLESS OTHERWISE APPROVED BY NOVEC. NOVEC TO PROVIDE CONDUIT REQUIREMENTS AND PLACEMENT DETAILS.
1. TEMPORARY SERVICE STRUCTURES MUST BE STRONGLY BUILT TO WITHSTAND THE STRAINS IMPOSED BY THE ATTACHED EQUIPMENT. BACKBOARD MUST BE BUILT USING A MINIMUM 3/4" RIGID MATERIAL (MUST BE TREATED FOR OUTSIDE USE).

2. SERVICE STRUCTURES MUST BE WITHIN 75 FEET OF THE TRANSFORMER POLE FROM WHICH THE SERVICE IS TO BE INSTALLED. THE EXACT LOCATION OF THE STRUCTURE WILL BE SPECIFIED BY NOVEC.

3. THIS STRUCTURE MUST BE INSPECTED BY THE COUNTY ELECTRICAL INSPECTOR OR WHERE APPLICABLE, A SIGNED "FARM" SERVICE AGREEMENT MUST BE ON FILE, PRIOR TO THE INSTALLATION OF A METER BY NOVEC.

4. THE HEIGHT OF ALL TEMPORARY STRUCTURES MUST BE SUCH THAT A MINIMUM CLEARANCE OF 18 FEET SHALL BE MAINTAINED OVER DRIVEWAYS, STREETS, ALLEYS AND AREAS ACCESSIBLE TO MOTOR VEHICLES, AND A MINIMUM CLEARANCE OF TWELVE (12) FEET SHALL BE MAINTAINED OVER SIDEWALKS AND LAWNS.
ROOF MOUNTED SERVICE MAST INSTALLATIONS

SERVICE ENTRANCE CONDUCTORS MUST BE AT LEAST 3' IN ANY DIRECTION FROM WINDOWS, DOORS, PORCHES, FIRE ESCAPES OR SIMILAR LOCATIONS. EXCEPTIONS APPLY TO THE TOP OF WINDOWS AND WINDOWS THAT DO NOT OPEN.

SERVICE HEAD OR WEATHER HEAD
(Customer owned)

NOT LESS THAN 12' FROM THE BOTTOM OF A SECONDARY SERVICE DRAIN LOOP TO THE GROUND.

SERVICE ENTRANCE (Customer owned)

EYEBOLT IS PROVIDED BY NOVEC AND IS INSTALLED BY THE CUSTOMER

EYEBOLT THRU WALL SERVICE ATTACHMENT

WALL MOUNTED SERVICE MAST INSTALLATION

PIECE MAST CONDUCTOR ATTACHMENT
(Provided by Customer)

SLIP FITTER SERVICE ENTRANCE CAP (WEATHER HEAD), Customer owned

SERVICE ENTRANCE CABLE, Customer owned

NOVEC TERMINATION

DRIP LOOP

2" GALVANIZED CONDUIT
Customer owned

METER SOCKET & METER

NOTE: FOR MORE INFORMATION ON THESE INSTALLATIONS SEE NESC SECTION 234C3 AND NEC SECTION 230.24

CENTRAL OF THE GLASS TO FINAL GRADE

SERVICE CONDUCTOR AWAY FROM ROOFLINE

SERVICE CONDUCTOR OVER ROOFLINE

NOTE: FOR MORE INFORMATION ON THIS INSTALLATION SEE NESC SECTION 232B, 234C, AND NEC SECTION 230.9

INSTALLATION DRAWING FOR OVERHEAD SERVICE
NOTES:
1. POLE SIZE WILL BE A MINIMUM 20’ CLASS 6.
2. EXISTING POLE SIZE AND CLASS MUST BE APPROVED BY NOVEC BEFORE UPGRADING SERVICE.
3. 4’ OF ENTRANCE CABLE SHALL BE LEFT EXTENDING OUT OF WEATHERHEAD TO ALLOW NOVEC TO MAKE CONNECTIONS TO SERVICE DROP.
4. CUSTOMER DISCONNECT SHALL BE BELOW, BEHIND OR ON AN ADJACENT STRUCTURE. ALL CONNECTIONS AT THE METERBASE SHALL BE WATERTIGHT.
5. CUSTOMER OWNED POLE SHALL BE LOCATED A MAXIMUM OF 50’ FROM NOVEC SERVICE POLE.

GENERAL NOTES
ALL NESC CLEARANCES SHALL BE MET.

INSTALLATION DRAWING FOR OVERHEAD SERVICE METER ON CUSTOMER OWNED POLE
NOTES:

1. ALL INSTALLATIONS SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE, THE NATIONAL ELECTRICAL SAFETY CODE, AND ANY STATE OR FEDERAL CODES OR REQUIREMENTS.


3. THE CUSTOMER IS RESPONSIBLE FOR OBTAINING ANY REQUIRED ELECTRICAL INSPECTIONS. NOVEC SHALL TERMINATE THE SERVICE CONDUCTOR ON THE LINE SIDE OF THE METERBASE.

4. CATV'S SERVICE ENTRANCE EQUIPMENT MUST BE GROUNDED TO A CATV DRIVEN GROUND ROD(S). CATV SHALL BOND CATV GROUND WIRE TO NOVEC POLE GROUND WIRE. GROUNDING CONDUCTOR MUST BE #6 COPPER OR LARGER.

5. BONDS SHALL BE MADE BETWEEN THE POLE GROUND WIRE AND THE CABINET (NOT NEUTRAL BUS) OF THE POWER SUPPLY, TELEPHONE MESSENER, AND CATV MESSENER. THESE CONNECTIONS ARE TO AVOID POTENTIAL DIFFERENCES BETWEEN DEVICES ON THE POLE. BOND TO THE POWER SUPPLY CABINET SHALL BE EXTERNAL AND VISIBLE FROM THE GROUND.

6. ALL CUSTOMER'S WIRING MUST BE IN METALLIC OR RIGID PVC CONDUIT.

7. LINE AND LOAD CONDUCTORS MUST BE IN SEPARATE CONDUITS.

8. CATV EQUIPMENT SHALL BE INSTALLED ON THE SAME QUADRANT OF THE POLE AS THE METER FOR CLIMBING SPACE PURPOSES AND TO MINIMIZE POLE REPLACEMENT DIFFICULTIES.

9. BONDING CONNECTORS SHALL BE SUITABLE FOR CONDUCTOR TYPE AND CAN BE EITHER COMPRESSION OR BOLTED TYPE.

10. BOLTS SHALL NOT EXTEND MORE THAN 2-1/2" FROM POLE.


INSTALLATION DRAWING FOR OVERHEAD JOINT USE POWER SUPPLY
WHEN INSTALLING CABLE, LEAVE 5 FEET OF CABLE FOR TERMINATIONS.

WHEN MAKING UP TERMINATIONS PROVIDE SUITABLE SLACK FOR SETTLEMENT.

NOTES:

1. NOVEC SHALL TERMINATE THE SERVICE CONDUCTOR ON THE LINE SIDE OF THE METER BASE AND THE ELECTRICIAN IS RESPONSIBLE FOR TERMINATING THE CONDUCTOR ON THE LOAD SIDE OF THE METER BASE.

2. THE LEFT BOTTOM OF UNDERGROUND METER BASES IS RESERVED FOR UTILITY USE ONLY. THE CUSTOMER’S SERVICE MUST EXIT THE METER BASE OUT THE RIGHT BOTTOM, SIDE OR BACK FOR UNDERGROUND METER BASES. THE CUSTOMER’S SERVICE CONDUCTOR CANNOT EXIT THE LEFT SIDE OF AN UNDERGROUND METER BASE AND SHALL NOT OBSTRUCT NOVEC’S LEFT BOTTOM ENTRY AREA INTO THE BASE.
WHEN INSTALLING CABLE, LEAVE 4 FEET OF CABLE FOR TERMINATIONS.

WHEN MAKING UP TERMINATIONS PROVIDE SUITABLE SLACK FOR SETTLEMENT.

#6 AL ground to neutral block for socket mechanical ground

LOAD NEUTRAL

LINE NEUTRAL

NOTES:
1. NOVEC SHALL TERMINATE THE SERVICE CONDUCTOR ON THE LINE SIDE OF THE METER BASE AND THE ELECTRICIAN IS RESPONSIBLE FOR TERMINATING THE CONDUCTOR ON THE LOAD SIDE OF THE METER BASE.

2. THE LEFT BOTTOM OF UNDERGROUND METER BASES IS RESERVED FOR UTILITY USE ONLY. THE CUSTOMER’S SERVICE MUST EXIT THE METER BASE OUT THE RIGHT BOTTOM, SIDE OR BACK FOR UNDERGROUND METER BASES. THE CUSTOMER’S SERVICE CONDUCTOR CANNOT EXIT THE LEFT SIDE OF AN UNDERGROUND METER BASE AND SHALL NOT OBSTRUCT NOVEC’S LEFT BOTTOM ENTRY AREA INTO THE BASE.

INSTALLATION DRAWING FOR TWO WIRE UNDERGROUND METER SOCKETS

ID-MB1.2W
1. NOVEC SHALL TERMINATE THE SERVICE CONDUCTOR ON THE LINE SIDE OF THE METER BASE AND THE ELECTRICIAN IS RESPONSIBLE FOR TERMINATING THE CONDUCTOR ON THE LOAD SIDE OF THE METER BASE.

2. THE LEFT BOTTOM OF UNDERGROUND METER BASES IS RESERVED FOR UTILITY USE ONLY. THE CUSTOMER’S SERVICE MUST EXIT THE METER BASE OUT THE RIGHT BOTTOM, SIDE OR BACK FOR UNDERGROUND METER BASES. THE CUSTOMER’S SERVICE CONDUCTOR CANNOT EXIT THE LEFT SIDE OF AN UNDERGROUND METER BASE AND SHALL NOT OBSTRUCT NOVEC’S LEFT BOTTOM ENTRY AREA INTO THE BASE.
WHEN INSTALLING CABLE, LEAVE 6 FEET OF CABLE FOR TERMINATIONS.

WHEN MAKING UP TERMINATIONS PROVIDE AS MUCH SLACK AS POSSIBLE IN METERBASE.

1. NOVEC SHALL TERMINATE THE SERVICE CONDUCTOR ON THE LINE SIDE OF THE METER BASE AND THE ELECTRICIAN IS RESPONSIBLE FOR TERMINATING THE CONDUCTOR ON THE LOAD SIDE OF THE METER BASE.

2. THE LEFT BOTTOM OF UNDERGROUND METER BASES IS RESERVED FOR UTILITY USE ONLY. THE CUSTOMER’S SERVICE MUST EXIT THE METER BASE OUT THE RIGHT BOTTOM, SIDE OR BACK FOR UNDERGROUND METER BASES. THE CUSTOMER’S SERVICE CONDUCTOR CANNOT EXIT THE LEFT SIDE OF AN UNDERGROUND METER BASE AND SHALL NOT OBSTRUCT NOVEC’S LEFT BOTTOM ENTRY AREA INTO THE BASE.

INSTALLATION DRAWING FOR 320 AMP UNDERGROUND METER SOCKETS
NOTE: CUSTOMER SHALL INSTALL 3" OR 4" PVC CONDUITS AND 90'/36" RADIUS SWEEPS. THE BOTTOM OF THE SWEEPS SHALL REST 36" BELOW FLOOR OR FINISH GRADE.

INSTALLATION DRAWING FOR 400–600 AMP UNDERGROUND K4 METER SOCKETS
NOVEC TERMINATES AT THIS LOCATION

3' OF TAIL OUT OF WEATHER HEAD

Hub Size:
- 1 1/4" - 100 Amp
- 1 1/2" - 150 Amp
- 2" - 200 Amp

Knockout Size:
- Up to 3

Load side exits

LOAD
CUSTOMER USE

1. NOVEC SHALL TERMINATE THE SERVICE CONDUCTOR AT THE WEATHER HEAD AND THE ELECTRICIAN IS RESPONSIBLE FOR TERMINATING THE CONDUCTORS INSIDE THE METER BASE.

2. THE TOP OF OVERHEAD METER BASES IS RESERVED FOR UTILITY USE ONLY WITH THE BOTTOM, BACK OR SIDES FOR THE CUSTOMER.

INSTALLATION DRAWING FOR OVERHEAD METER SOCKETS
NOTES:
1. NOVEC SHALL TERMINATE THE SERVICE CONDUCTOR AT THE WEATHER HEAD AND THE ELECTRICIAN IS RESPONSIBLE FOR TERMINATING THE CONDUCTORS INSIDE THE METER BASE.
2. THE TOP OF OVERHEAD METER BASES IS RESERVED FOR UTILITY USE ONLY WITH THE BOTTOM, BACK OR SIDES FOR THE CUSTOMER.
AREA REQUIREMENTS FOR NOVEC
METERING EQUIPMENT IN ELECTRICAL ROOMS

Each type of service is listed below with the minimum area of wall space required for Northern Virginia Electric Cooperative (NOVEC) metering equipment per each point to be metered. All equipment is to be mounted between 4’ and 6’ above finished grade.

Meter Sockets:

<table>
<thead>
<tr>
<th>Service Type</th>
<th>Feed Type</th>
<th>Area Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 amp service</td>
<td>top feed</td>
<td>18”w x 24”l</td>
</tr>
<tr>
<td>200 amp service</td>
<td>bottom feed</td>
<td>24”w x 32”l</td>
</tr>
<tr>
<td>320 amp service</td>
<td>top or bottom feed</td>
<td>24”w x 38”l</td>
</tr>
<tr>
<td>400-600 amp service</td>
<td>top feed socket type only</td>
<td>44”w x 54”l</td>
</tr>
</tbody>
</table>

CT Cabinets with Meter Trim:

<table>
<thead>
<tr>
<th>Amp Service</th>
<th>Area Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-600 amp</td>
<td>60”w x 36”l</td>
</tr>
<tr>
<td>800-1200 amp</td>
<td>70”w x 54”l</td>
</tr>
<tr>
<td>1400-2000 amp</td>
<td>82”w x 54”l</td>
</tr>
<tr>
<td>2500-4000 amp</td>
<td>96”w x 62”l</td>
</tr>
</tbody>
</table>

**NOTE:** All equipment, both socket and ct-rated, will project out 16”. Area requirements do not include disconnects and only reflect normal typical service requirements. Final approval for all meter rooms is reserved by NOVEC. Prior plan approval during design stages is strongly suggested. Please contact the Metering Supervisor for assistance.

Clare D. Bargerstock
Metering Supervisor
NOTES:
1. SERVICE TROUGH IS CONSTRUCTED OF 14 GA.
   GALVANIZED SHEET STEEL WITH ALL JOINTS AND
   SEAMS WELDED.
2. REMOVABLE COVER WITH STAINLESS STEEL
   SCREWS. GASKET UPON REQUEST.
3. EMBOSSED MOUNTING HOLES ON BACK OF
   TROUGH. NO KNOCKOUTS.
4. SERVICE TROUGH MUST BE SEALABLE.
5. DIMENSIONS AND KNOCKOUT LOCATIONS
   PROVIDED BY NOVEC METERING DEPARTMENT.
<table>
<thead>
<tr>
<th>TYPE</th>
<th>Current Range</th>
<th>H</th>
<th>W</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>200A to 800A</td>
<td>36&quot;</td>
<td>30&quot;</td>
<td>13&quot;</td>
</tr>
<tr>
<td>2</td>
<td>800A to 1200A</td>
<td>48&quot;</td>
<td>42&quot;</td>
<td>15&quot;</td>
</tr>
<tr>
<td>3</td>
<td>1200A to 2000A</td>
<td>48&quot;</td>
<td>54&quot;</td>
<td>15&quot;</td>
</tr>
<tr>
<td>4</td>
<td>2000A to 3000A</td>
<td>54&quot;</td>
<td>68&quot;</td>
<td>16&quot;</td>
</tr>
</tbody>
</table>

**NOTES:**

1. ALL WELDED CONSTRUCTION WITH CONTINUOUS PIANO HINGED DOUBLE DOORS AND HANSON THREE POINT VAULT HANDLE
2. MATERIAL TO BE 12GA GALVANEAL WITH PRIME AND FINISHED COAT OF ASA–61
3. CABINETS TO BE SUPPLIED IN NEMA–1,3R OR 12 AS REQUIRED
4. MOUNTING BRACKET TO BE CENTERED IN CABINET WITH 3/8" HOLES DRILLED ON 1–1/2" CENTERS ACROSS BRACKET LENGTH
MOUNTING EARS (TYP. OF 4"

<table>
<thead>
<tr>
<th>Type</th>
<th>Amp Range</th>
<th>H</th>
<th>W</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE 1</td>
<td>200A to 800A</td>
<td>44&quot;</td>
<td>30&quot;</td>
<td>13&quot;</td>
</tr>
<tr>
<td>TYPE 2</td>
<td>800A to 1200A</td>
<td>55&quot;</td>
<td>42&quot;</td>
<td>15&quot;</td>
</tr>
<tr>
<td>TYPE 3</td>
<td>1200A to 2000A</td>
<td>55&quot;</td>
<td>54&quot;</td>
<td>15&quot;</td>
</tr>
<tr>
<td>TYPE 4</td>
<td>2000A to 3000A</td>
<td>64&quot;</td>
<td>68&quot;</td>
<td>16&quot;</td>
</tr>
</tbody>
</table>

* LANDING PADS ABOVE 1200 AMP NEED TO BE 8 HOLE INSTEAD OF 4 AS SHOWN

NOTES:
1) ALL WELDED CONSTRUCTION WITH CONTINUOUS PIANO HINGED DOUBLE DOORS AND HANSON THREE POINT VAULT HANDLE
2) MATERIAL TO BE 12GA GALVINEAL WITH PRIME AND FINISHED COAT OF ASA-61
3) CABINETS TO BE SUPPLIED IN NEMA-1,3R OR 12 AS REQUIRED
4) MOUNTING BRACKET TO BE CENTERED IN CABINET WITH 3/8" HOLES DRILLED ON 1-1/2" CENTERS ACROSS BRACKET LENGTH

NORTHERN VIRGINIA ELECTRIC COOPERATIVE

INSTALLATION DRAWING FOR INSTRUMENT TRANSFORMER CABINET

ID-M-IC1
REQUIREMENTS FOR 277/480 VOLT, THREE PHASE, FOUR WIRE SERVICES.

A. SERVICES 200 AMPERES AND BELOW:
1. NOVEC WILL FURNISH 277/480 VOLT, SELF-CONTAINED METERS FOR 200 AMPERE SERVICES.
2. THE MAIN SWITCH WILL BE LOCATED AHEAD OF THE 200 AMPERE SELF CONTAINED METER AND INSTALLED PARALLEL TO THE METER SOCKET AS SHOWN ON THE ATTACHED DRAWING. (277/480 VOLT SELF-CONTAINED METER INSTALLATION) NOVEC WILL FURNISH NECESSARY METER SOCKETS.
3. THE CONTRACTOR/OWNER WILL INSTALL THE METER SOCKETS AND MAKE UP ALL CONDUCTORS WITHIN THE METER SOCKETS, SWITCHGEAR, TROUGHS, ETC.

B. SERVICES RATED ABOVE 200 AMPERES:
1. NOVEC WILL FURNISH AND INSTALL NECESSARY METERS, METERING CABLE, TEST SWITCHES AND INSTRUMENT TRANSFORMERS FOR SERVICES RATED ABOVE 200 AMPERES.
2. THE COOPERATIVE WILL FURNISH METER TRIMS FOR INSTALLATION BY THE CONTRACTOR/OWNER.
3. THE CONTRACTOR/OWNER WILL FURNISH AND INSTALL ALL INSTRUMENT TRANSFORMER CABINETS, SWITCHGEAR AND CONDUIT FOR METER TRIM AS DIRECTED BY THE COOPERATIVE.

C. CONTRACTORS/OWNERS MUST ASSUME FULL RESPONSIBILITY FOR THEIR PERSONNEL PERFORMING WORK IN THE AREA OF THE COOPERATIVE’S METERING EQUIPMENT AND TAKE APPROPRIATE SAFETY PRECAUTIONS REQUIRED BY HIGHER SERVICE VOLTAGES.

INSTALLATION DRAWING FOR 277/480 VOLT SELF-CONTAINED METER INSTALLATION 200 AMPERE SERVICE
INSTALLATION DRAWING FOR
NOVEC K-7 METER BASE
400 AMP – 600 AMP 3 PHASE

6' ± 6" TO FLOOR OR FINISHED GRADE
EACH SOCKET & DISCONNECT MUST HAVE PERMANENTLY AFFIXED ADDRESS.

FINISH GRADE

INSTALLATION DRAWING FOR CLUSTER MOUNTED METER SOCKETS
120/208 VOLT WYE NETWORK
800AMP TO 1500AMP

ID-M-CM
MATERIAL:
1. WATTHOUR METER, A-BASE, 3Ø
2. TEST SWITCH
3. METER CABINET, OUTDOORS, 1-POSITION (NOVEC SUPPLIED/CUSTOMER INSTALLED)
4. INSTRUMENT TRANSFORMERS, POTENTIAL AND CURRENT
5. CABLE, 12 CONDUCTOR #10 AWG (NOT SHOWN)
6. CUSTOMER SUPPLIED CT CABINET

INSTALLATION DRAWING FOR OUTDOOR TRANSFORMER-RATED 3Ø METER INSTALLATION
NOTES:

1) THE NATIONAL ELECTRIC CODE ALLOWS FOR INTERSYSTEM BONDING TERMINATIONS TO METER ENCLOSURES. HOWEVER, THEY MUST COMPLY WITH ALL CRITERIA LISTED IN SECTION 250.94 OF THE CODE. CONNECTIONS THAT ARE NOT IN COMPLIANCE WITH THE 2014 NATIONAL ELECTRIC CODE (NEC) SECTION 250.94 ARE CONSIDERED UNACCEPTABLE BY NOVEC.

2) (NEC) SECTION 250.94 SUBSECTION (3) INTERSYSTEM BONDING SHALL "NOT INTERFERE WITH OPENING THE ENCLOSURE FOR A SERVICE, BUILDING OR STRUCTURE DISCONNECTING MEANS, OR METERING EQUIPMENT."

3) GROUND CLAMPS THAT ATTACH TO, OBSTRUCT, OR OTHERWISE INTERFERE WITH REMOVAL OF THE METER BASE COVER SHALL NOT BE INSTALLED ON NOVEC METER BASES.

4) ANY METER BASE GROUND CLAMP THAT BY DESIGN OR PLACEMENT INTERFERES WITH THE ACCESSIBILITY OR WORKABILITY OF A NOVEC METER BASE WILL BE REMOVED.
This Page Intentionally Left Blank.
DIG SAFELY
BEFORE YOU DIG
CALL MISS UTILITY OF VIRGINIA

Dial 811 in VA, or 1-800-552-7001

http://www.va811.com