Metering And Customer Service Requirements

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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>120/240</td>
<td>3</td>
<td>200 Res / Comm 1</td>
<td>4</td>
</tr>
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<td>3</td>
<td>320 Res / Comm 1</td>
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</tr>
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<td>4</td>
</tr>
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<td><strong>Network</strong></td>
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</tr>
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<td>120/208</td>
<td>3</td>
<td>200</td>
<td>5</td>
</tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>208/120</td>
<td>4</td>
<td>200</td>
<td>7</td>
</tr>
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<td>4</td>
<td>200</td>
<td>7</td>
</tr>
<tr>
<td>240/480</td>
<td>4</td>
<td>200</td>
<td>7</td>
</tr>
<tr>
<td>480/277</td>
<td>4</td>
<td>200</td>
<td>7</td>
</tr>
</tbody>
</table>

### Notes:

1. Manual block by pass required on all 200 Amp non-residential installations, and all 320 Amp installations.
2. No automatic, plunger, or lever type by pass devices allowed.
3. Meters are required to be mounted external to the building. Exceptions will need to be approved by District Engineering and Metering Departments prior to construction.
4. Sockets A, B, D, will be provided by the customer.
5. Sockets C, E will be provided by the District for the customer to install.
6. The meter base for single phase, two wire service, shall be the same as a single phase, three wire service, with the upper right terminal tied to the neutral. Three phase, three wire service shall be metered as a three phase four wire service.
7. Socket B will have the 9 o'clock terminal position tied to the neutral.
8. For pedestal details see Q-4K and Q-4L.
9. Ringless meter base not allowed.
### Service Conduit & Requirements

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<td>Self Contained</td>
<td>3&quot; SCH 40</td>
<td>200 FT *</td>
</tr>
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<td>Self Contained</td>
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<td>Over 400A</td>
<td>CT Contained</td>
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<td>250 FT</td>
</tr>
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<table>
<thead>
<tr>
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</tr>
</thead>
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<td>Commercial UG Services</td>
</tr>
<tr>
<td>200A, 1Ø</td>
</tr>
<tr>
<td>400A, 1Ø (320A Class)</td>
</tr>
<tr>
<td>400A, 1Ø</td>
</tr>
<tr>
<td>Over 400A, 1Ø</td>
</tr>
<tr>
<td>200A, 3Ø</td>
</tr>
<tr>
<td>Over 200A, 3Ø</td>
</tr>
</tbody>
</table>

* Distances are based on measurements from the padmount transformer, subtract 50 feet from pole mount transformer installations.

### Notes:

1. Locate meter base so the conduit run does not exceed maximum allowable length per this standard where it applies, or have more than 3 bends totaling 270 degrees. (This 270 degrees shall include 1-90 degree sweep at the meter base and one at the transformer or pole).

2. Details shown are minimum District requirements and are not intended to depict the Washington State Labor and Industries requirements.

3. Customer owned and installed service wires shall not exceed 500 kcmil copper or 500 kcmil aluminum and shall not exceed 4 sets of conductors.

4. Customer owned and installed service wires on large 3 phase commercial projects shall not exceed 750 kcmil copper or 750 kcmil aluminum and shall not exceed 6 conductors per phase.
Manufactured Home Type

OR

Apartment / Multi-Family Buildings

Notes:

1.) Before permanent service is connected raised letters and numbers (1" min. height) or engraved placard as approved by the District must be permanently attached to the meter base, apartment door and apartment panel. No adhesive non-raised letters or numbers allowed.
Group Meter Base Installation
For Apartments, Strip Malls, etc.

Notes:

1. Permanent service will not be connected without proper meter base identification, refer to Q-1C for meter base identification requirements.
2. Access to supply conductors must be capable of being sealed by the utility.
3. District approval must be obtained in writing for any of the following:
   A. If any disconnect is installed on the delivery side of meters.
   B. If meter installation is over 4' from the front, on the side of the building.
   C. If other than outside installation.
4. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries Requirements.
Notes:

1. Reducer (supplied by customer) 3" x 2-1/2" x 8" shall not have sharp internal edges.
2. Carlon adapters are supplied by customer and must be pre-approved to meet District requirements.
TEMPORARY SERVICE

Q-2 Series

REV BY: JWV
REV DATE: 10/01/13

1 of 1

Q-2
Notes:

1. Application for temporary service is required by the District before service will be connected.
2. Metered temporary power installations **1 Year Maximum**.
3. Any service that exceeds the 50' maximum length must be reviewed by a District engineer on a case by case basis.
4. Customer's temporary service pole may be of 4" x 4" solid lumber or two 2" x 4".
5. Laminated together 4" x 4" overall will be the minimum acceptable.
6. Braces will consist of 2" x 4" lumber with stakes solidly driven into the ground and firmly attached to braces.
7. Temporary service arrangement and equipment to be "Approved For Service" by the state electrical inspector before the District will connect service.
8. The customer shall notify the District as to when service is requested.
9. Meter base may be required for 120 day temporary installations.
10. Meter base will be required for RV's, pumps, job shacks, and all commercial projects or similar applications.
11. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
12. Prior to any digging call UDIG or 811 for free cable locate prior to digging.
13. All clearances must meet or exceed the National Electrical Safety Code.
Notes:

1. Application for temporary service is required by the District before service will be connected.
2. Metered temporary power installations 1 year maximum.
3. Prior to any digging, call UDIG or 811 for free cable locate prior to digging.
4. The customer shall provide all trench and backfill to the transformer, pedestal or hand hole. Contact District representative prior to trenching, for coordination.
5. The customer shall provide sufficient conductor to reach transformer plus 6 feet.
6. Temporary service arrangement and equipment to be "Approved For Service" by the State Electrical Inspector before the District will connect service.
7. The customer shall notify the District a minimum of 2 weeks prior to when service is required.
8. The District will install customer owned wire in transformer box and make connection.
9. Temporary power connections shall not be made through permanent service stub-outs.
10. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
11. One year renewal limit without re-inspection and approval by State Labor and Industries.
Customer to purchase and install 3" Sch. 40, 36" radius sweeps to replace SPUD sewer elbow.

Hand hole box & all conduit from box to meter to be installed by customer.

Example of a temporary service install.
Hand hole and connecting conduit are required.
Temporary panel must be within 5 Ft. from hand hole.

Example of a stub-up.
The District installs 90° sewer elbow for stub-up.

Notes:
1. Hand hole may be picked up at the District's warehouse located at 1500 S. Ely St. or a purchased approved equivalent and installed, after permanent service application is received by engineering.
2. Hand hole and all sweeps to be installed by customer prior to energizing a temporary service.

Alternate Temporary Services
Installation Guidelines
Brace/roof connection will have sharp bend with no radius

1/4" x 4" x 4" Galvanized washer

Cyclone fence collars 3/8" min. bolt size or equal - 3/4" rigid galvanized conduit brace with ends flattened and drilled

Detail
Push Bracing (when required)

Secure conduit to rafter with u-bolt

Galvanized thimble and guy clamp

Dead end insulator supplied by customer

Weatherhead

45° Min.
26" Min.
48" Max.

Guying Req.

Mast

Service conductor pull

No. 6 Copperweld, Aircraft cable, or equal

Plan
Guying (when required)

Minimum 2" x 6" solid blocking between rafters (at service lead-in) and wallplates drilled for steel conduit

2" Dia., 5/16" u-bolts for all conduit fasteners length as required

2" x 4" installed solid between studs and rough siding

2" Rigid steel conduit

Notes:

2. Service drop must maintain 12 feet minimum clearance above grade at lowest point. See National Electrical Safety Code rule 232.
3. See WAC code regarding recessed Meter Base Installations.
Notes:

2. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
Notes:

1. Customer shall contact Customer Engineering before installation.
2. Customer shall supply and install meter base, mast, and conductors as shown above.
3. The meter base must be installed (plumb and solid) and bonded to customer neutral per the National Electrical Code, when required.
4. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
5. Ringless meter bases are not allowed.
6. For pre-approved meter bases, see document Standard Q-4M.

Overhead Feed
Single Phase Meter Base
200 Amp, 240/480 Volt 3 Wire
Non-Typical
Notes:

1. Customer shall supply and install meter base.
2. The meter base must be installed (plumb and solid) and bonded to customer neutral per the NEC, when required.
3. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
4. Ringless meter base not allowed.
5. For pre-approved meter bases, see document Standard Q-4M.
Conduit to be furnished and installed by customer per the NEC code

This lug is to be in 9 o'clock position only, and tied to neutral.

Notes:
1. Customer shall supply and install meter base.
2. Lever by-pass not allowed, manual block by-pass allowed on District Standards Q-3F, G, H & J.
3. The meter base must be installed plumb and solid, and bonded to customer neutral per the National Electric Code.
4. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
5. Ringless meter base not allowed.
6. For pre-approval or equivalent meter bases, see document Standard Q-4M.
Notes:

1. Meter base shall be supplied and installed (plumb & solid) by the customer.
3. The meter base must be bonded to the customer neutral per the National Electric Code.
4. No conduit type fittings allowed in conduit containing un-metered conductors.
5. Ringless meter base not allowed.
6. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
7. For pre-approval or equipment meter bases, see document Standard Q-4M.
Conduit to be furnished and installed by customer per the NEC code

The fifth jaw is required in the 9 o'clock position and tied to the neutral

Service entrance conductors furnished and installed by customer per the NEC code

Block type by-pass stud for by-pass clip (TYP.)

Notes:

1. Meter base shall be supplied and installed (plumb & solid) by the customer.
3. The meter base must be bonded to the customer neutral per the National Electric Code.
4. No conduit type fittings allowed in conduit containing un-metered conductors.
5. Ringless meter base not allowed.
6. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
7. For pre-approval or equipment meter bases, see document Standard Q-4M.
Notes:

1. Doubling of wires allowed in factory provided, UL approved connectors, only when conductor type and size are the same.
2. Meter base shall be supplied and installed (plumb & solid) by the customer.
3. No conduit type fittings allowed in conduit containing unmetered conductors.
4. Lever by-pass not allowed, block by-pass only.
5. The meter base must be bonded to the customer neutral per the National Electric Code.
6. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
7. Ringless meter base not allowed.
8. For pre-approval or equipment meter bases, see document Standard Q-4M

Overhead Feed
320 Amp Meter Base
Single Phase, 120/240 Volt
Notes:

1. Meter base shall be supplied and installed (plumb & solid) by the customer.
3. The meter base must be bonded to the customer neutral per the National Electric Code.
4. No conduit type fittings allowed in conduit containing un-metered conductors.
5. Lever by-pass not allowed, block by-pass only.
6. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
7. For pre-approval or equipment meter bases, see document Standard Q-4M.
8. Power conductor (wild leg, color coded orange).
9. Ringless meter base not allowed.
Overhead Feed To Underground Feed

Overhead Feed To Overhead Feed

Notes:
1. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements. Wiring must be approved for service by state inspector.
2. The meter base must be bonded to customer neutral per the National Electric Code.
3. Refer to standard Q-1C for numbering practice in mobile home and RV parks.
4. Ringless meter base not allowed
Conduit must be even with top of pole

Lead length
18" minimum

Deadend insulator supplied by customer. Service attachment must be below weatherhead.

Notes:
1. The meter base must be bonded to customer neutral per the National Electric Code.
2. Refer to District standard Q-1C for numbering practice in mobile home and RV parks.
3. Ringless meter base not allowed.
Socket Wiring Diagram

Provided And Installed By Customer

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Weatherhead</td>
</tr>
<tr>
<td>2</td>
<td>Conduit</td>
</tr>
<tr>
<td>3</td>
<td>Meter base</td>
</tr>
</tbody>
</table>

Provided And Installed By District

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Meter</td>
</tr>
<tr>
<td>5</td>
<td>Pole</td>
</tr>
</tbody>
</table>

Notes:
1. Line conductors, color code black.
2. Power conductor (wild leg), color coded orange.
3. Neutral conductor must be color coded white.
4. No conduit type fittings allowed in conduit containing un-metered conductors.
5. The meter base must be bonded to the customer neutral per the National Electric Code.
7. Lever by-pass or safety socket style not allowed.
8. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
9. Ringless meter base not allowed.
UNDERGROUND SERVICES

Q-4 Series
### Provided And Installed By Customer

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
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<tbody>
<tr>
<td>3</td>
<td>Meter Base</td>
</tr>
<tr>
<td>4</td>
<td>3&quot; Rigid PVC Conduit</td>
</tr>
<tr>
<td>5</td>
<td>Sweep 3&quot; sch. 40 PVC 36&quot; radius</td>
</tr>
<tr>
<td>6</td>
<td>Conduit-3&quot; Sch. 40 PVC</td>
</tr>
<tr>
<td>7</td>
<td>3&quot; to 2-1/2&quot; adapter for 200A meter base only</td>
</tr>
<tr>
<td>8</td>
<td>refer to Q-1E standard</td>
</tr>
<tr>
<td></td>
<td>Conduit Straps</td>
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</tbody>
</table>

### Provided And Installed By District

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Conductors</td>
</tr>
<tr>
<td>2</td>
<td>Meter</td>
</tr>
</tbody>
</table>

### Notes:

1. No conduit type fittings will be allowed in the conduit containing the District's un-metered conductors.
2. The District's service conductors will terminate at the meter socket line terminals.
3. The meter base must be bonded to customer neutral per the National Electric Code.
4. The 320 Amp meter base is for single phase installation only.
5. For trench details, see District standards Q-7A, Q-7B.
6. For meter base details, see District standards. Q-4C, D, E, F, G, H, and M.
7. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
8. Ringless meter base not allowed.

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**Service Entrance**

**Surface Mounted Underground**

**400 Amp or Less**

**Q-4A**
Notes:

1. No conduit type fittings will be allowed in the conduit containing the District’s un-metered conductors.
2. The District’s service conductors will terminate at the meter socket line terminals.
3. The meter base must be bonded to customer neutral per the National Electric Code.
4. The 320 Amp meter base is for single phase installation only.
5. For trench details, see district specification Q-7A.
6. For meter base details, see District standards Q-4C, D, E, F, G, H, and M.
7. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
8. Ringless meter base not allowed.
District service connectors

Do not use knock-outs on this side due to conflicts with District conductors.

3" conduit may require adapter see Q-1E

District service conductors

#4/0 AL furnished and installed by the District

2-1/2" Min Knock-Out

Notes:

1. Meter base shall be supplied and installed (plumb and solid) by the customer.
2. Lever by-pass not allowed, manual block by-pass allowed under District standard Q-4E.
3. The meter base must be bonded to the customer neutral per the National Electric Code.
4. The District requires that all services 200 Amp and below (self-contained) use meter sockets rated for 200 Amp continuous duty.
5. Meter base must have lugs which accept #4/0 aluminum conductors.
6. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
7. For pre-approval or equipment meter bases, see document Standard Q-4M.
8. Ringless meter base not allowed.
District service connectors

The fifth lug is required in the 9 o'clock position and tied to the neutral.

Do not use knock-outs on this side due to conflicts with District conductors.

3” conduit may require adapter see Q-1E

District service conductors #4/0 AL furnished and installed by the District.

Notes:

1. Meter base shall be supplied and installed (plumb and solid) by the customer.
2. Lever by-pass not allowed, manual block by-pass allowed under Q-4F.
3. The meter base must be bonded to the customer neutral per the National Electric Code.
4. The District requires that all services 200 Amp and below (self-contained) use meter sockets rated for 200 Amp continuous duty.
5. Meter base must have lugs which accept #4/0 aluminum conductors.
6. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
7. For pre-approval or equipment meter bases, see document Standard Q-4M.
8. Ringless meter base not allowed.
Block type by-pass stud for by-pass clip (TYP.)

Do not restrict access to this area

3" rigid conduit furnished and installed by the customer

District service conductors #4/0 AL furnished and installed by the District

3" Min. Knock-Out

Notes:

1. Meter base shall be supplied and installed (plumb and solid) by the customer.
3. Lever by-pass or Safety Socket Style Not Allowed.
4. The District requires that all services 200 Amp and below (self-contained) use meter sockets rated for 200 Amp continuous duty.
5. Meter base must have lugs which accept #4/0 aluminum conductors.
6. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
7. For pre-approval or equipment meter bases, see document Standard Q-4M.
8. Ringless meter base not allowed.
The fifth lug is required in the 9 o'clock position and tied to the neutral.

Block type by-pass stud for by-pass clip (TYP.)

Do not restrict access to this area

3" rigid conduit furnished and installed by the customer

District service conductors #4/0 AL furnished and installed by the District

2 1/2" Min. Knock-Out

Notes:

1. Meter base shall be supplied and installed (plumb and solid) by the customer.
3. Lever type by-pass or safety socket style not allowed.
4. The meter base must be bonded to the customer neutral per the National Electric Code.
5. The District requires that all services 200 Amp and below (self-contained) use meter sockets rated for 200 Amp continuous duty.
6. Meter base must have lugs which accept #4/0 aluminum conductors.
7. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
8. For pre-approval or equipment meter bases, see document Standard Q-4M.
9. Ringless meter base not allowed.
Notes:

1. Meter base shall be supplied and installed (plumb & solid) by the customer.
2. The meter base must be bonded to the customer neutral per the National Electric Code.
3. Lever by-pass not allowed, block by-pass only.
4. Details shown are minimum District requirements and are not intended to depict Washington State Department of Labor and Industries requirements.
5. For pre-approval or equipment meter bases, see document Standard Q-4M.
6. Ringless meter bases not allowed.

Underground Feed
320 Amp Meter Base
Single Phase, 120/240 Volt
Residential or Commercial
Notes:

1. Meter base shall be supplied and installed (plumb & solid) by the customer.
3. Lever by-pass not allowed.
4. The meter base must be bonded to the customer neutral per the NEC.
5. The District requires that all services 200 Amp and below (self-contained) use meter sockets rated for 200 Amp continuous duty.
6. Meter base must have lugs which accept 4/0 aluminum conductors.
7. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
8. For pre-approval or equipment meter bases, see document Standard Q-4M.
9. Ringless meter base not allowed.
10. Power conductor (wild leg), color coded orange.
Notes:

1. The disconnect distance between the manufactured (or mobile) home must meet the National Electric Code requirements.
2. Line termination lugs must accept #4/0 aluminum conductors.
3. Set pedestal plumb to finished grade. Set in concrete prior to District installation of service conductors.
4. Multi-unit mobile home parks and multi-unit buildings must have address identification permanently attached to the front of the meter base, per District standard Q-1C, before service will be connected.
5. The meter base must be bonded to the customer neutral per the National Electric Code.
6. Customer must provide all trench and backfill per District standard Q-7A or Q-7B.
7. Customer must provide all conduit per standard Q-1B.
8. Meter socket to be rated for 200 Amp continuous.
9. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
10. Ringless meter base not allowed.
Notes:
1. The minimum distance between the pedestal and mobile home must meet the National Electric Code requirements.
2. Set pedestal plumb to finished grade. Set in concrete prior to the District installing service conductors.
3. All vertical structural components must be adequately encased in concrete.
4. Multi-unit mobile home parks and multi-unit buildings must have address identification permanently attached to the front of the meter base, per District standard Q-1C, before service will be connected.
5. The meter base must be bonded to the customer neutral per the National Electric Code.
6. Customer must provide all trench and backfill per District standard Q-7A or Q-7B.
7. Customer must provide all conduit per standard Q-1B.
8. The meter socket will be rated for 200A continuous duty.
9. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
10. Ringless meter base not allowed.
Notes:

1. Line termination lugs must accept 350 kcm aluminum conductors.
2. Set pedestal plumb to finished grade set in concrete prior to District installation of service conductors.
3. All vertical structural components must be adequately encased in concrete.
4. The meter base must be bonded to the customer neutral per the National Electric Code.
5. Customer must provide all trench and backfill per District standard Q-7A or Q-7B.
6. Customer must provide all conduit per District standard Q-1B.
7. The meter socket will be rated for 320 Amp continuous per District standard Q-4G.
8. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
9. Ringless meter base not allowed
<table>
<thead>
<tr>
<th>Q-3D</th>
<th>Pre-Approved Meter Bases</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-Line 204 MS68 (OH ONLY)</td>
<td></td>
</tr>
<tr>
<td>Milbank U4517-DL-M4 (OH ONLY)</td>
<td></td>
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<tr>
<td>Milbank U4518-XL-W (OH/UG)</td>
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<table>
<thead>
<tr>
<th>Q-4C</th>
<th>Pre-Approved Meter Bases</th>
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<tbody>
<tr>
<td>B-Line U204 (UG ONLY)</td>
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</tr>
<tr>
<td>Milbank U4518-O-W (UG ONLY)</td>
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<td>Milbank U4518-XL-W (OH/UG)</td>
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<table>
<thead>
<tr>
<th>Q-3E</th>
<th>Pre-Approved meter bases and 5th jaw kits</th>
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<tbody>
<tr>
<td>B-Line 204 MS68 (OH ONLY)</td>
<td></td>
</tr>
<tr>
<td>5th jaw kit #50365</td>
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<tr>
<td>Milbank U4517-DL-M4 (OH ONLY)</td>
<td></td>
</tr>
<tr>
<td>W/ K5T (5th Jaw Kit)</td>
<td></td>
</tr>
<tr>
<td>Milbank U4518-XL-W (OH/UG)</td>
<td></td>
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<tr>
<td>W/ K5T (5th Jaw Kit)</td>
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<th>Pre-Approved Meter Bases</th>
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<tbody>
<tr>
<td>B-Line U204 W/50365 (5th Jaw Kit) (UG ONLY)</td>
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</tr>
<tr>
<td>Milbank U4518-O-W WK5T (5th Jaw Kit) (UG ONLY)</td>
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<tr>
<td>Milbank U4518-XL-W WK5T (5th Jaw Kit) (OH/UG)</td>
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<table>
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<tr>
<th>Q-3F</th>
<th>Pre-Approved Meter Bases</th>
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</thead>
<tbody>
<tr>
<td>B-Line U264 (OH/UG)</td>
<td></td>
</tr>
<tr>
<td>Milbank U3514-XL (OH/UG)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q-4E</th>
<th>Pre-Approved Meter Bases</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-Line U264 (OH/UG)</td>
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<tr>
<td>Milbank U3514-XL (OH/UG)</td>
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<th>Q-3G</th>
<th>Pre-Approved Meter Bases</th>
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</thead>
<tbody>
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<td></td>
</tr>
<tr>
<td>Milbank U3514-XL (OH/UG) W/#K5T (5TH Jaw Kit)</td>
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</tbody>
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<table>
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<tr>
<th>Q-4F</th>
<th>Pre-Approved Meter Bases</th>
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</thead>
<tbody>
<tr>
<td>B-Line U264 (OH/UG) W/#50365 (5TH Jaw Kit)</td>
<td></td>
</tr>
<tr>
<td>Milbank U3514-XL (OH/UG) W/#K5T (5TH Jaw Kit)</td>
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<table>
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<tr>
<th>Q-3H</th>
<th>Pre-Approved Meter Bases</th>
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<tbody>
<tr>
<td>B-Line 324N (OH/UG)</td>
<td></td>
</tr>
<tr>
<td>Milbank U3548-X (OH/UG)</td>
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<table>
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<th>Q-4G</th>
<th>Pre-Approved Meter Bases</th>
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<tbody>
<tr>
<td>B-Line 324N (OH/UG)</td>
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<tr>
<td>Milbank U3548-X (OH/UG)</td>
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</table>

<table>
<thead>
<tr>
<th>Q-3J</th>
<th>Pre-Approved Meter Bases</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-Line U267 (OH/UG)</td>
<td></td>
</tr>
<tr>
<td>Milbank U3517-XL (OH/UG)</td>
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<table>
<thead>
<tr>
<th>Q-4H</th>
<th>Pre-Approved Meter Bases</th>
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<tr>
<td>Milbank 3517-XL (OH/UG)</td>
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<table>
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<th>Pre-Approved Meter Bases</th>
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</tr>
<tr>
<td>Milbank 3517-XL (OH/UG)</td>
<td></td>
</tr>
</tbody>
</table>
Hinges on CT cabinet must be on the side opposite the meter base.

Mounting base for current transformers (by customer, see table on Sht. 2)

Conduit(s) to transformer

Final Grade
Pre-approved Single Phase Current Transformer Cabinet & Mounting Bases

<table>
<thead>
<tr>
<th>Service Size</th>
<th>Number of Load Conductors</th>
<th>Width (in)</th>
<th>Height (in)</th>
<th>Depth (in)</th>
<th>Cooper B-Line Part #</th>
<th>Milbank Part #</th>
<th>Cooper B-Line Part #</th>
<th>Milbank Part #</th>
<th>EUSERC Drawing #</th>
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<tbody>
<tr>
<td>201-400A</td>
<td>1-2</td>
<td>24&quot; min</td>
<td>48&quot;</td>
<td>11&quot;</td>
<td>244811 HRTCT</td>
<td></td>
<td>CT244811HC</td>
<td></td>
<td>6019HA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>or 304811 HRTCT</td>
<td></td>
<td>or CT304811HC</td>
<td></td>
<td>K4797</td>
</tr>
<tr>
<td>201-800A</td>
<td>1-4</td>
<td>36&quot;</td>
<td>48&quot;</td>
<td>11&quot;</td>
<td>364811 HRTCT</td>
<td></td>
<td>CT364811HC</td>
<td></td>
<td>6019HE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>or 6019HEL</td>
<td></td>
<td>or K4729</td>
<td></td>
<td>or K4797</td>
</tr>
</tbody>
</table>

Notes:

1. Current transformer cabinet and CT mounting base to be supplied by the customer.
2. Current transformers to be supplied and installed by District.
3. Estimated Load must be at least 25 KVA for CT metering to facilitate additional load growth and the customers request appears reasonable, customer must install Current Transformer Enclosure for the CT metering equipment.
4. The CT mounting base shall have a 50,000 Amp minimum fault current rating.
5. The cabinet will be raintight, with a sealable, hinged, cover.
6. District provides the service conductors to transformer on residential services.
7. The maximum number of load conductors per phase will be limited to four without prior District approval.
8. Customer shall ensure the load conductors are compatible with the connectors on the EUSERC 328B style CT mounting base. All mechanical cable termination blocks shall be provided by the customer.
9. The customer shall make up and terminate the load side connections in the CT compartment.
10. The customer service entrance conduits must exit the enclosure on the load side of the CT mounting base. The District will not allow customer conductors or conduit in the District’s terminating and pull space.
11. The meter base shall be provided by District and installed by customer.
12. Bonding must be in accordance with the current National Electric Code requirements.
13. Meter sockets shall be installed within 24” of Non-Hinge side of CT compartment and not be located above CT cans due to safety of working in front of the energized equipment.
14. Maximum conductor size allowed is 500 kcm copper or aluminum.
15. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
Current Transformer (CT) Compartment Requirements for Three Phase Services 201-800 Amps

- Hinges on CT cabinet must be on the side opposite the meter base.
- Mounting base for current transformers (by customer, see table on sht. 2).
- Conduit(s) to transformer.

Finished Grade

8" Min.
2' Max.

1" Conduit

4' Min.
6' Max.

2' Min.
# Pre-approved Three Phase Current Transformer Cabinet & Mounting Bases

<table>
<thead>
<tr>
<th>Service Size</th>
<th>Number of Load Conductors</th>
<th>Cabinet Dimensions</th>
<th>CT Cabinets</th>
<th>CT Mounting Bases</th>
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<tbody>
<tr>
<td>201-400A</td>
<td>1-2</td>
<td>30&quot;</td>
<td>48&quot;</td>
<td>11&quot;</td>
</tr>
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<td></td>
<td></td>
<td>304811HRTCT</td>
<td>CT304811-HC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cooper B-Line Part #</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>201-800A</td>
<td>1-4</td>
<td>36&quot;</td>
<td>48&quot;</td>
<td>11&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>364811HRTCT</td>
<td>CT364811-HC</td>
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<td></td>
<td></td>
<td></td>
<td>Cooper B-Line Part #</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

1. Current transformer cabinet and CT mounting base to be supplied and installed by the customer.
2. Current transformers to be supplied and installed by District.
3. Estimated load must be at least 50 KVA for secondary compartment CT metering, specifically services which are fed by a District 45 KVA transformer must be metered within a Current Transformer Enclosure.
4. Estimated load must be at least 100 KVA to be metered in the secondary compartment of the transformer. CT metering, specifically for services which are fed by a District 75 KVA or smaller transformer shall be metered within a Current Transformer Enclosure.
5. The CT mounting base shall have a minimum 50,000A fault current rating.
6. The cabinet will be raintight, with a sealable, hinged, cover.
7. The customer shall provide and install the service conductors to the District transformer.
8. The maximum number of conductors per phase will be limited to four without prior District approval.
9. Customer shall ensure all the conductors are compatible with the connectors on the EUSERC 329B style CT mounting base. All mechanical cable termination blocks shall be provided by the customer.
10. The customer shall make up and terminate all connections in the CT compartment.
11. The customer service entrance conduits must exit the enclosure on the load side of the CT mounting base. The District will not allow customer conductors or conduit in the District's terminating and pull space.
12. The meter base shall be provided by the District and installed by the customer.
14. Meter sockets shall be installed within 24" of Non-Hinged side of CT compartment and not be located above CT cans due to safety of working in front of the energized equipment.
15. Maximum conductor size allowed is 750 kcm copper or aluminum.
16. Details shown are minimum district requirements and are not intended to depict Washington State Labor and Industries requirements.
Three Phase Source

Bus Bar Kit to be installed by customer

District supplied Ct's

Conduit(s) to transformer

Final Grade

Conduit(s) 1' Min.

1' Min.

4' Min. 6' Max.

8' Max. to top of CT compartment

1" Conduit

8" Min. 2' Max.

Current Transformer (CT)

Compartment Requirements for Commercial Three Phase Services

1200-2500 Amps

Q-5F
### Pre-approved Three Phase Commercial Current Transformer Cabinet & Mounting Bases

<table>
<thead>
<tr>
<th>CT Service Type</th>
<th>Number of Load Conductors</th>
<th>Cabinet Dimensions</th>
<th>CT Cabinets with Mounting Bases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Size</td>
<td></td>
<td>Width</td>
<td>Height</td>
</tr>
<tr>
<td>1200A</td>
<td>3</td>
<td>55&quot;</td>
<td>64&quot;</td>
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<tr>
<td>1600A</td>
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<td>61&quot;</td>
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<tr>
<td>2000A</td>
<td>5</td>
<td>65&quot;</td>
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</tr>
<tr>
<td>2500A</td>
<td>7</td>
<td>65&quot;</td>
<td>64&quot;</td>
</tr>
</tbody>
</table>

* INCLUDES SIDE GUTTER
** MUST CONTACT BENTON PUD PRIOR TO PURCHASE (NON-STANDARD)

### Notes:
1. Current transformer cabinet and CT mounting base to be supplied and installed by the customer.
2. Current transformers to be supplied and installed by the District.
3. The CT mounting base shall have a 85,000A minimum fault current rating.
4. The cabinet will be rain tight, with a sealable, hinged, cover.
5. The customer shall provide and install the service conductors to the District transformer.
6. The maximum number of source conductors per phase will be limited to six without prior District approval.
7. Customer shall ensure all load conductors are compatible with the connectors on the EUSERC 328B Style CT mounting base. All mechanical cable termination blocks shall be provided by the customer.
8. The customer shall make up and terminate all connections in the CT compartment.
9. The customer service entrance conduits must exit the enclosure on the load side of the CT mounting base, unless written permission is obtained from Engineering and the Meter Shop. The District will not allow customer conductors or conduit in terminating and pull space.
10. The meter base shall be provided by the District and installed by the customer.
11. Bonding must be in accordance with latest issue of the National Electric Code (Article 250 grounding). The code enforcing agency requires bonding connection to be visible when electrical inspection is made.
12. Meter sockets shall be installed within 2' of CT compartment and not be located above CT cans due to safety of working in front of the energized equipment.
13. Maximum conductor size allowed is 750 kcm copper or aluminum.
14. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
15. Customer will install bus bar and CT perch for window style CT.
**Notes:**

1. The District will provide the pre-fabricated meter base and frame. Contractor install pedestal in concrete, plumb and sound, and to finished grade as shown.
2. Refer to transformer pad detail, UG6-C, or UG6-C2.
3. All vertical structural components must be adequately encased in concrete.
4. Customer will supply and install the 1" conduit for the meter.
5. The meter must be located so the metering circuit conduit run does not exceed 25' in length or contain more than 4 bends totaling 360 degrees.
6. No conduits or junctions are allowed in metering circuit conduit.
7. Secondary circuit conductors: maximum number of wire-6 sets of 750 kcm copper or aluminum. Contact the District if in need of additional sets.
8. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.
Notes:

1. Contact Engineering regarding all switchgear installations for prior approval.
2. Busways must remain in position when the removable bus link "B" is removed.
3. Set the direction of feed from the top. No other customer conductors shall pass through this compartment.
4. Bus clearance dimension measured to inside edge of the compartment access opening.
5. Reference EUSERC 320 and 322.
6. Customer to install and terminate all conductors.
7. Current transformers to be supplied and wired by the District.
8. Customer shall remove bus links to facilitate CT installation and shall re-torque following completion.
TRANSFORMER PADS AND CLEARANCES

Q-6 Series

DRAWN BY: JAD
DRAW DATE: 03/05/04

REV BY: JWV
REV DATE: 10/01/2013
REV NO: 1
DIR. ENG. DATE: 11/14

BENTON PUD
TRANSMR PADS & CLEARANCES
Q-6 Series

Q-6
Installation Clearances for Commercial & Residential Transformers

Notes:

1. All dimensions are minimum
2. No obstructions are allowed over transformer.
3. Refer to District planting guide for landscaping.
4. Installation must not violate WAC-296-468-450 transformers.
Plan View
Concrete Transformer Pad by Customer

(2) Required
District supplied
customer installed
(See Note 5)

Primary compartment

Secondary compartment

Transformer Pad

#3 Rebar @ 6" on center Both ways

(2) Required
District supplied
customer installed
(See Note 5)

*Primary cable area.
Conduit and ground wire District supplied, customer installed
(see note 5).

1/2" Radius on all Exposed pad edges

Finished Grade
Top of ground rod
6"

4" 36" Radius PVC sweep
District supplied, customer installed. (See Note 5)

Section A-A

Refer to Q-5G for 1" conduit installed by customer

Ground loop
See Note 5

(Secondary cable area) Conduit and wire customer supplied and installed by District when required by District, set CT's in secondary compartment of transformer.
Transformer Pad Details
500 kVA & Below
Three Phase Pad

UG6-C

Notes:

1. Ground under pad must be 95% minimum compaction.
2. Concrete shall be Portland Cement concrete, 5 sack mix, attaining 3000 P.S.I. at 28 days.
3. Top of pad shall be level and finished smooth. Surface shall not contain honeycomb or segregation.
4. Barricade traffic bollards provided and installed by customer - contact District engineering to determine location of posts. When required, bollards must not interfere with swing of transformer doors.
5. Customer to pick up 4" primary conduit sweep, 2 ground rods, and #4 Str. bare CU. ground wire from the District warehouse located at 1500 S. Ely street, Kennewick.
6. Maximum number of wire-6 sets of 750 kcm copper or aluminum. Contact the District if in need of additional sets.
7. For pad location, reference District standard Q-6C for clearance to existing structures.
(2) Required
district supplied
customer installed
(see note 6)

#3 Rebar @ 6" on
center both ways

Primary cable area.
Conduit and ground
wire district supplied,
customer installed
(see note 6).

Plan View
Concrete Transformer
Pad by Customer

1/2" Radius on all
Exposed pad edges

Section A-A

4" 36" Radius PVC sweep
District supplied, customer
installed. (See Note 6)

Transformer Pad Details
750 kVA & Above
Three Phase Pad
### Transformer Pad Details
**750 kVA & Below**
Three Phase Pad

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty.</th>
<th>Description</th>
<th>Item Code</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>5/8&quot; x 8&quot; Ground Rod</td>
<td>337381</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>4&quot; Diameter PVC Sch. 40 36&quot; Radius Sweep</td>
<td>633651</td>
</tr>
<tr>
<td>3</td>
<td>50&quot;</td>
<td>Wire #4 MHDB 7 Str.</td>
<td>400300</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>5/8&quot; Ground Rod Clamp</td>
<td>327100</td>
</tr>
</tbody>
</table>

**Notes:**

1. Ground under pad must be 95% minimum compaction.
2. Concrete shall be Portland cement concrete, 5 sack mix, attaining 3000 P.S.I. at 28 days.
3. Top of pad shall be level and finished smooth. Surface shall not contain honeycomb or segregation.
4. Barricade traffic bollards provided and installed by customer - contact District engineering to determine location of posts.
5. When required, bollards must not interfere with swing of transformer doors.
6. Customer to pick up 4" primary conduit sweep, 2 ground rods, and #4 Str. bare CU. ground wire from the District warehouse located at 1500 S. Ely street, Kennewick.
7. Maximum number of wire-6 sets of 750 kcm copper or aluminum. Contact the District if in need of additional sets.
8. For pad location, reference District standard Q-6C for clearance to existing structures.
Customer to install 6 - 6" Sch 40 PVC conduits and 6 - 6" Sch 40 PVC sweeps. District to install wire between transformer and secondary cabinet.

Plan
Concrete pads by customer

Notes:
1. Terminations of customer owned wire in secondary cabinet by customer.
2. Reference transformer pad details, District standard UG6-C or UG6-C2.
3. Reference CT meter base construction, District standard Q-5G.
4. Primary cable area conduit and ground wire District supplied, customer installed.
5. When required by District set CT’s in secondary compartment of transformer.
6. Termination cabinet grounds shall be bonded with transformer pad grounds.
7. See UG6-C or UG6-C2 for XFMR pad details.
When no stub-out exists, customer to dig a 3'W x 3'L x 3'D work pit for District use and supply a 36" radius sweep to be installed by the District.

Plan

- Power cable in conduit
- Phone/TV
- Gas/Water
- Spoil Pile
- 12" min. separation required between power and water lines

Section A-A

- 6" Min. Selective backfill
- Finished Grade
- District supplied and installed sweep

When a stub-out exists, customer will remove temporary sewer 90° and connect to existing District stub-out. If no stub-out exists see plan view diagram above.

Elevation

- District supplied transformer or pedestal
- District furnished and installed meter
- Customer provided trenching, backfill, and conduit
- Conduit per District standard Q-1B

Notes:

1. Cover open conduit with conduit cap or cloth to seal out dirt.
2. The District will inspect and approve all trenches prior to backfill.
3. When required, customer shall trench 2' away from power pole at time of trench inspection. Additional excavation maybe required prior to final connection.
4. Always call U-DIG before digging UDIG or 811.
5. Locate meter base so the conduit run does not exceed maximum allowed length per District standard Q-1B, or have more than 3 bends totaling 270 degrees including sweep at transformer.
6. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries Requirements.

Trenching & Conduit Details
for Typical Underground Service Installation
from Pad Mount Transformer
When no stub-out exists, customer to dig a 3'W x 3'L x 3'D work pit for District use. District will dig final 36" of trench and install District supplied sweep.

By District

By Customer

Plan

Self contained meter base furnished and installed by customer.

District furnished and installed meter

Customer provided trenching and backfill

Conduit Per Standard Q-1B

Customer Supplied 36" Radius PVC Sweep

Notes:

1. The District will inspect and approve all trenches prior to backfill.
2. Cover open conduit with conduit cap or cloth to seal out dirt.
3. Always call U-DIG before digging UDIG or 811.
4. Locate meter base so the conduit run does not exceed maximum allowed length per District Standard Q-1B, or have more than 3 bends totaling 270 degrees.
5. Details shown are minimum District requirements and are not intended to depict Washington State Labor and Industries requirements.

TITLE:
Trenching & Conduit Details for Typical Underground, Service Installation from Overhead Transformer
NET METERING SERVICES
Notes:

1. Connecting customer generation equipment to the Benton PUD (BPUD) distribution system requires completion of a Net Metering Application and signing of a Net Metering Interconnection Agreement.

2. This standard represents a typical arrangement for a net metering installation. The details shown are not intended to depict Washington State Department of Labor and Industries (L&I) requirements. L&I approval of installation is required prior to customer receiving approval from BPUD for final interconnection of generator to the BPUD distribution system. Customer shall provide BPUD with a copy of the documentation of L&I approval.

3. Customer’s must provide a one-line electrical schematic drawing to BPUD which is specific to the proposed installation.

4. BPUD does not require a utility disconnect switch for customer generation equipment utilizing Underwriter’s Laboratory (UL) 1741 listed inverter equipment. Contact the BPUD engineering department for review and approval of other interconnection methods.

5. Upon receiving L&I approval, BPUD will complete a field inspection of the customer’s net metering installation. Approved installations will be documented by BPUD’s completion of a Generating Facility Certificate of Completion. This certificate represents the customer’s authorization to energize their generation equipment and interconnect their net metering installation to the BPUD distribution system.

6. AC production meter base shall be labeled, “CUSTOMER GENERATOR, PRODUCTION METER”, with engraved phenolic placards; 3/8” white capitalized lettering on a red background.

7. Main electric service (Net Meter) meter base shall be labeled “NET METER, CUSTOMER GENERATOR CONNECTED TO THIS SERVICE”, with engraved phenolic placards; 3/8” white capitalized lettering on a red background.
Notes:

1. All dimensions are minimum.
2. No obstructions are allowed over transformer or fiber hand hole.
3. Refer to District planting guide for landscaping.

Transformer

Customer to install 2" sch 40 PVC from communications room and connect to 2" stub-out or hand hole as provided by the District.

District to install 2" Sch 40 PVC and stub-up

12' Clear Zone

10' Min Clear Zone

District grid numbers

Installation Practices for Customer Fiber Services
Title: Work Area Clearance

Typical Overhead

Typical Underground