Requirements for Secondary Voltage Revenue Metering (750 V and less)

March 2025

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1. Overview

This document contains BC Hydro's requirements for revenue metering installations operating at 750 V and less. These requirements also apply to revenue metering installations in the City of New Westminster, if any.

If needed, any BC Hydro related information and/or Standards referred to in this Requirement should be inquired upon from local BC Hydro Design.

Comments are written in italics.

New additions and changes from previous version are denoted with a vertical line preceding the sentence.

2. Disclaimer

This document is not intended as a design specification or as an instruction manual for the Customer and this document shall not be used by the Customer for those purposes. Persons using information included in this document do so at no risk to BC Hydro, and they rely solely upon themselves to ensure that their use of all or any part of this document is appropriate in the particular circumstances.

The Customer, its employees or agents must recognize that they are, at all times, solely responsible for the plant design, construction and operation. Neither BC Hydro nor any of their employees or agents shall be nor become the agents of the Customer in any manner howsoever arising.

BC Hydro's review of the specifications and detailed plans shall not be construed as confirming or endorsing the design or as warranting the safety, durability or reliability of the Customer's facilities. BC Hydro, by reason of such review or lack of review, shall be responsible for neither the strength, adequacy of design or capacity of equipment built pursuant to such specifications, nor shall BC Hydro, or any of their employees or agents, be responsible for any injury to the public or workers resulting from the failure of the Customer facilities.

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The information contained in this document is subject to change and may be revised at any time. Any user of this document is advised to confirm the current version and consult with BC Hydro on the applicability of its provisions. Without limiting BC Hydro may refuse service, and energization of the metering installation, if in its view the Customer's facilities, including the service entrance and metering equipment, are unsafe, hazardous, or otherwise does not comply with the Requirements set out in this document.

3. General

3.1 Approval

a) The proposed metering equipment locations and voltage shall be approved by BC Hydro prior to installation. If the design is subsequently changed, re-approval is required prior to energization.

b) The metering equipment shall be certified and installed in accordance with the latest edition of the Canadian Electrical Code. If special permission for a deviation from the Canadian Electrical Code, that impacts metering, is requested from the provincial or municipal inspection authority, special written approval shall first be obtained from BC Hydro.

3.2 Location

3.2.1 General

1. Shall be installed in a clean readily accessible location free from severe or continual vibration.

For rural applications, meter location shall be readily accessible by vehicles at all times.

2. Shall not be installed in locations which may be hazardous to persons installing, testing, reading, or maintaining the equipment.
3. Shall be protected from damage due to vandalism, vehicles etc.
4. Shall not be installed in garages or carports.
5. Shall not be installed in a location which requires ladder or manhole access.
6. Grouped Sub Service Metering and multiple meters shall be installed inside a designated electrical/meter room, and at least one meter socket shall be mounted as per section 6.16.
7. Exterior meter(s), not mounted inside a metal enclosure, no conduit arrangement is required for the purpose of meter communication.
8. Meter(s) inside wood frame construction above grade, no conduit arrangement is required for the purpose of meter communication.
9. Per CEC, part I and local Building Codes, termination boxes shall be suitable for the environment in which they are placed.
10. There has to be minimum 0.3 m separation distance between the meter base and closest obstruction/equipment.
11. Each termination/pull box located inside the building shall be securely fastened to the wall with sufficient room for an additional termination box.
12. A minimum of 1 m working space by 2.2 m headroom shall be provided and maintained in front of all metering equipment, and to the sides and back, where access is required.

13. If an existing metering location going through a service upgrade and/or meter alteration does not meet the above criteria, the Customer shall relocate the metering equipment to a location that meets the above criteria.
14. Single phase detached single family residential metering equipment shall not be located indoors except in the case of power shed or service closet as approved in advance by BC Hydro.
15. Buildings requiring conduit(s) and termination box(es) for Meter Communications shall be defined as per Section 3.2.2.

See section 5.1.1.1 and section 5.1.1.2 for 1 phase services over 200 A and section 5.1.2.1 for a possible exception for 3 phase services over 200 A.

3.2.2 Meter Communications

BC Hydro revenue meters must be able to transmit data to and from the BC Hydro communication network. The data is transmitted by radio frequency like cell phones. Radio frequency waves cannot fully transmit through concrete, metal, or earth; therefore, some buildings will require electrical conduit(s) and termination box(es) to enable meter communication through wires.

A. General Requirements for ensuring Meter Communications

- Meter(s) located below grade require conduit(s) and termination box(es);
- Meter(s) located within concrete and/or metal clad buildings require conduit(s) and termination box(es).
- Meter(s) located within wood constructed buildings at or above grade do not require conduit(s) and termination box(es).
- Structural alterations involving new / re-located meter rooms require conduits added in the alteration areas and tied into existing meter communication conduits where present.
- Mixed wood/concrete and any other structure not covered above, requires consultation with BC Hydro Design prior to any design work.
- As per section 3.6, soft copy, dimensioned PDF drawing(s) showing conduit configurations, Conduit Schedule and physical locations of terminations and pull boxes are required by BC Hydro and shall be provided by the Customer prior to construction. BC Hydro Meter Communications conduits shall be clearly labelled on the drawing(s).

B. Routing Configuration Requirements for Conduits and Termination Boxes.

1. Single Meter Room at or below grade:
   - For concrete buildings having a single meter room at or below grade, or wood frame buildings having a single meter room below grade, the conduit and termination boxes shall be run from the meter room to an exterior wall as per section 6.17.
   - For a building with a parkade, the exterior termination box shall be mounted under the parkade entrance overhang:
     i. within two meters of the parkade entrance opening; and
     ii. outside of the parkade entrance gate; and
     iii. a minimum of two meters from any planned parkade entrance gate controller or sensor.
   - For a building with no parkade, the exterior termination box shall be mounted on the exterior wall which has line of sight to the neighboring buildings across the street or alley. If there is no neighbor across the street or alley, then it is the customer's preference whether to face the street or alley.

   - The conduit termination on the exterior of the building shall be no less than 2.75 m or no more than 4 m above finished grade unless mounted under the parkade entrance overhang, with a minimum number of bends as per section 6.17.

2. Multiple Meter Rooms at or below grade:
   - If a concrete building contains more than one meter room at or below grade, conduits and termination boxes shall be run to connect each meter room in a star or daisy chain configuration to the main meter room as per section 6.18. This would include across parkade and floor levels at or below grade. The main meter room shall also include the conduit and termination box to the exterior of the building as per section 6.17.
   - The main meter room is the meter room closest to ground level with the service entrance and containing one or more transformer-type meters and/or house meter.

3. For concrete structures having Multiple Meter Rooms above grade:
   - Conduits and termination boxes are required in addition to the requirements specified in preceding sections B(1) and B(2), by connecting both vertically aligned and non-vertically aligned meter

rooms to the main meter room in a star, daisy chain or combination thereof, configuration as per section 6.19.

Vertically aligned meter rooms / closets are those that are at or above grade and have the same spatial footprint and position horizontally in the building but are separated vertically by one or more floors. For example, the left Meter Closet on 3rd Floor (X3) and 5th Floor(X5) in section 6.19 are both vertically aligned; that is, they are above grade and for this simple drawing, assumed to have an identical footprint and horizontal position within the building. If any of these are not true, they are non-vertically aligned.

- The two lowest vertically aligned Meter Closets shall be interconnected via a conduit between them and terminating in each Meter Closet as per section 6.19.
- Additional conduits are not required above the two lowest vertically aligned meter closets unless there is a vertical gap of 4 or more floors in between the closets OR the next Meter Closet above is not aligned vertically with the Meter Closet below it.
- If there is a vertical gap of 4 or more floors in between vertically aligned Meter Closets, provide conduit to bridge the gap between these Meter Closets (i.e. provide conduit from the topmost Meter Closet in the lower floor, to the bottommost Meter Closet in the next-higher meter closet). Provide conduit in this manner for every gap of 4 or more floors.
- If any floor has more than one Meter Closet on that floor, conduit shall be run horizontally from the additional Meter Closet(s) to the Meter Closet containing the vertical daisy chained conduits as per section 6.19 (see 3rd Floor for example).

C. Specifications for Conduit and Termination Boxes

1. All material requirements for installation of conduits and termination boxes are the responsibility of the customer. Each termination box and conduit shall be permanently marked/labelled for exclusive use of BC Hydro Meter Communications. Intermediate junction/pull boxes shall be clearly identified and shall be clear of visual encumbrances (e.g. “sticky” insulation blown onto the ceiling of a parkade shall be cleaned off), allowing the junction box and associated conduits to be easily found and identified. All termination and intermediate junction boxes shall be clearly labelled as per section 6.20.

2. Conduits entering each Meter Closet and meter room shall be terminated in a termination box. Multiple conduits into the room or closet can be terminated in the same box (maximum 4 conduits per box) as per section 6.17.

3. All material and connections from termination box to the meter(s) is the responsibility of BCH per section 6.17.

4. Conduit(s) shall be metallic or rigid PVC, with an inside diameter not less than 35.00 mm (or 1¼ inch trade size) installed per CEC and local Building Code. If the conduit(s) will be run within a concrete slab, it must be either rigid PVC or metallic with the maximum degree of bends between termination / pull boxes not exceeding 270°. *Non-metallic Coreline (ENT) must not be used.*

5. The conduit from the meter room shall be run from a location within 0.3 - 2 m of the Transformer-Type Meter Socket used as house meter. If no such meter socket is present in the meter room, the conduit shall be run from a location within 0.3 - 2 m of another meter socket present at that location in the following order of preference:

    i. Any transformer-type Meter Socket.
    ii. Meter socket used as house meter.
    iii. Any meter socket.

    The above meter socket shall be mounted on a 19 mm (¾") plywood backing as per section 6.17 or metal support channels. The plywood backing or metal support channels shall be securely fastened to the wall. Shooting, or otherwise mounting this meter socket directly to the wall, is not permitted.

6. The maximum degree of bends between termination / pull boxes shall not exceed 270°, and if the maximum length between termination boxes exceeds 30m, an additional pull box is required. Each end of the conduit shall terminate in a 150x150x150 mm (minimum) metallic or PVC enclosure with a cover for future use by BC Hydro to install signaling cables. Termination / pull boxes shall be surface mounted, not flush with the slab. All metallic enclosures shall be bonded, and all PVC enclosures shall come with bonding conductor (with min #10 Cu). A maximum of 4 conduits can terminate in one termination box.

7. Each conduit shall have a permanent label attached to each end and shall be labelled at each end with a unique identifier to distinguish that conduit from all others as per section 6.20 Naming Convention and Sample Conduit Schedule.

8. Each conduit shall be equipped with a continuous length of Hydro Twine (BC Hydro Specification 106-0420R2) pull string and every termination / pull box shall be identified as for use by "BC Hydro Meter Communications."

3.3 Access

a) BC Hydro shall have reasonable access to the metering equipment to permit its installation, testing and maintenance.

b) Where the meter socket is not accessible due to locked doors or alarm systems, keys shall be provided to BC Hydro.

c) Where it is proposed to locate metering equipment indoors, or within other secure areas, the accessibility arrangements, systems, equipment etc. shall be agreed upon by BC Hydro prior to approval of the proposed location.

Equipment and systems may include keys, lock boxes, key fobs, smart cards etc.

d) Electrical rooms on ground floor or parkade level containing metering equipment shall be accessible by a vertically hinged, lockable door leading directly to the exterior or the parkade level of the building (roll-up or overhead garage doors are not acceptable as access doors);

e) Where building does not come with parkade, meter(s) shall be located in the main electrical room where the supply service is terminated. The main electrical room shall be at ground level and come with a door leading directly to the exterior of the building as per 6.16.

By special written approval from BC Hydro the main electrical room can be at ground level and without a door leading directly to the exterior. Where the meter socket is not accessible due to locked doors or alarm systems, keys shall be provided to BC Hydro.

f) Indoor Meter Closet(s) are only allowed in Multiple Unit Residential Buildings (MURBs) and Commercial Retail Units (CRUs) where building comes with a main electrical room. The house meter or meters shall be located inside this electrical room per d) and e) above.

g) Where a Premises come with multiple buildings with main and sub-electrical rooms, meters are allowed to be installed in each of the electrical rooms.

3.4 Illumination

When metering equipment are installed indoors, i.e. meter room, power shed, service closet, Indoor Meter Closet, etc., lighting fixture(s) shall be installed:

a) in the same space containing the metering equipment and shall be controlled by a wall switch at the room entrance; and

b) with a minimum illumination of:
   - 100 to 200 lux horizontal at 750 mm above grade; and
   - 100 lux vertical at the front face of the meter.

Hallway lighting, motion sensor-controlled light, and pull chains on light is not acceptable.

3.5 Existing Installations

a) Any existing installations undergoing service upgrade or meter related work as a result of an alteration shall comply with the latest version of this requirement and Measurement Canada Bulletin E-24-E.
b) Alterations shall not be made to existing metering installations without the prior written approval of BC Hydro.
c) Load increases shall be per BC Hydro Electric Tariff section 7.1. Any load increases greater than what is allowed shall not be made without prior written approval of BC Hydro.

This is to ensure the supply service and metering equipment has adequate capacity for the new load.

d) Any civil work and/or electrical changes affecting metering and billing, e.g., one meter per unit, on a Premises shall not take place without BC Hydro's approval. Any alteration work is the responsibility of the customer.
e) Procedures are available from BC Hydro for the temporary and emergency disconnection of Self-Contained meters. This may only be carried out by qualified electrical contractors to permit alterations or repairs. Approval from BC Hydro shall be obtained in advance on an individual job-by-job basis.

3.6 Drawings

When drawings, specifications and site plans are submitted to BC Hydro, details of the proposed metering equipment and locations shall be included.

Electrical room layout drawings, specifications and site plans shall be submitted to BC Hydro for approval. The electrical room layout drawing shall include the location, dimension, plan and front elevation for the following equipment:

- Main service box, wireway, pillbox, and sub-service disconnect devices
- Meter sockets and/or Transformer-Type Meter Sockets

- Instrument transformer enclosures and/or switchgear instrument transformer compartment, including CT and VT locations.
- Meter centres (Meter closets)
- Conduit(s) and termination box(es) for meter communication
- Metering Communications Conduit Schedule as per section 6.20

3.7 Underground and Overhead Main Services

Underground main service meter sockets shall be in accordance with section 6.1. Contact BC Hydro and refer to the ES53 Series Underground Electrical standards and the ES54 Underground Civil standards for underground main service conduit, wireway and pull box requirements.

Overhead service meter socket dimensions are not specified since BC Hydro does not install or terminate the service conductors at the meter socket.

3.8 Net Metering

For net metering tariff applications, refer to the BC Hydro requirements published under Generating Your Own Electricity at:
https://www.bchydro.com/work-with-us/selling-clean-energy/net-metering.html.

3.9 Metering Type and Sequence

Metering Type and Location Summary Table

Phase	Voltage	Current	Meter Type	Service	Fault Current	Metering Location (Note 1)	Neutral (Note 2)
1-ph	120/240V	≤ 320A	Self-Contained	Main	Any	Line (Hot)	Bonded or Isolated
				Sub	Any	Load (Cold)	Isolated
		> 320A	Instrument	See Schematic Drawings, section 4.6 and 5.2			
3-ph	(120/208V Y, 120/240V Δ)	≤ 200A	Self-Contained	Main	≤ 10kA	Line (Hot)	Isolated
					> 10kA	Load (Cold)	Isolated
				Sub	Any	Load (Cold)	Isolated
	277/480V Y, 347/600V Y 3-ph, 4-wire			Main or Sub	Any Level	Load (Cold)	Isolated
	480V, 600V Δ 3-ph, 3-wire		Instrument	Main or Sub	Any Level	Load (Cold)	N/A
	All	> 200A		See Schematic Drawings, section 4.6 and 5.2			

1. The metering location is relative to the main service box or sub service disconnect device. Line side metering is referred to as “hot” metering. Load side metering is referred to as “cold” metering.

2. In accordance with Canadian Electrical Code and depending on the configuration, the neutral shall be bonded or isolated to the meter enclosure.

3. Where a 3 phase, 4 wire power system supply, serves a 3 phase, 3 wire load, the neutral shall be part of the metering circuit and shall be extended to the point-of-metering (POM).

4. Where the metering installation is cold style, the main breaker shall be located adjacent to the meter base. Adjacent means side-by-side in the same physical location.

4. Self-Contained Metering

Self-Contained Metering is required for the following services:

- 120/240V, 1PH, 3W:
  - 200A or Less (main service offering for most residential customers).
  - 200A to 320A (for larger residential customers).

  Note: Over 320A, 1 phase service is using transformer rated metering socket, refer to Section 5.1.1.
- 120/208V and 347/600V, 3PH, 4W:
  - 200A or less.

  Note: All three phase services with a load over 200A including any loads on 480V and 600V delta are using transformer rated metering socket, refer to Section 5.1.2.

4.1 General

a) The Customer shall supply the meter socket and sealing ring. They shall be certified in accordance with CSA Standard C22.2 No. 115, *Meter Mounting Devices* and they shall be approved by BC Hydro.

b) The sealing ring shall be a screw type in accordance with section 6.2.

Ringless meter sockets are not permitted.

c) The neutral terminal on 5 jaw meter sockets shall be in the 9 o'clock position.

Prior to 2005 the neutral terminal on some 5 jaw meter sockets was required to be in the 6 o'clock position. When adding a new 5 jaw sub service meter socket to an existing installation, the new meter socket neutral terminal shall be in the 9 o'clock position, even if the existing neutral terminals are in the 6 o'clock position.

d) The meter tilt shall not exceed 3° from vertical.

e) Metered and unmetered conductors shall not be installed in the same raceway, pull box or distribution gutter box.

f) The supply service conductor conduit shall be continuous and without access fittings or junction boxes on the line side of a meter socket, except where a sealable LB fitting is used beside the Meter Socket.

g) Line and load side conductors shall not be crossed in the meter socket.

h) Where a 3 phase, 4 wire supply, serves a 3 phase, 3 wire load, a 7 jaw, 3 phase, 4 wire meter socket shall be installed and the neutral shall be extended

to the meter socket.

The neutral conductor:

- Shall be white and insulated; and
- Shall carry the same ampacity of the line conductor; and
- Shall not be smaller than No. 6 AWG and meet the minimum conductor size rating of the meter socket neutral terminal.

i) Any "collar-type" devices, including surge arrestors, generator transfer and/or hook ups, transfer switches, etc. shall not be installed within the meter socket or between the meter socket and the BC Hydro meter.

j) Prior to the installation of the meter, the Customer shall provide a durable temporary weather resistant cover over the meter socket opening.

k) When the service is to be temporarily energized prior to the installation of the meter, CSA approved jumper bars shall be installed in the meter socket. Proper electrical and mechanical contact must be maintained between the meter socket jaws and the meter terminal blades after the removal of the jumpers.

l) Underground service meter sockets shall be in accordance with section 6.1. *Overhead service meter socket dimensions are not specified since BC Hydro does not install the conductors.*

m) Accepted Meter Sockets:
https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/distribution/standards/meter-sockets-list.pdf

4.2 Individual Meter Sockets

4.2.1 Meter Socket Cover Removal

Removal of the meter socket cover shall not be possible unless the following sequence is followed:

- Removal of the sealing ring.
- 200A service - removal of the 200A meter
  320A service - meter shall be removed manually when the switch is in “By-Pass Mode”.
- Operation of the meter socket cover latch.
- Removal of the meter socket cover.

Configurations that rely on seals, in addition to the BC Hydro sealing ring seal, or padlocks to prevent removal of the meter socket cover are not permitted.

4.2.2 Mounting Height

a) The meter’s centre line shall be 1500 mm to 1800 mm above finished grade in accordance with section 6.3 and 6.4.

   Municipal kiosks, Meter Centres, Grouped Sub Service Metering, Service Pedestals mounting heights are per section 4.2.3, 6.6, 6.7 and 4.5 respectively.

b) If the Customer intends to build up the grade after the meter has been installed, a platform or ramp shall be provided during the interim period. The platform shall not be less than 900 mm by 900 mm.

4.2.3 Enclosures for Permanent Meter Sockets (Kiosk)

a) Installation of permanent meter socket within enclosure is atypical and used where the meter may be subject to vandalism and accidental damage where it reasonably cannot be alleviated. Enclosures are subject to the following requirements:
   - The enclosure has a hinged door; and,
   - The enclosure and door do not interfere with the installation, reading or removal of the meter; and
   - The enclosure and door do not interfere with the installation or removal of the meter socket cover; and,
   - The clearance of 254-305 mm (10-12 inch) is provided between the inside of the closed enclosure door and the meter socket cover; and,
   - The enclosure has a 152-178 mm (6-7 inch) round or square Lexan or

equivalent Polycarbonate viewing window installed on the enclosure door directly in-line with the front of the meter; and,

- For enclosures containing multiple meters, the viewing window should be located approx. 1/3 of the way down from the top of meter stack inside, geometrically centered across the stack. If this does not place the window in front of the meter cluster, then re-center the window in front of the meter cluster; and,
- The enclosure shall have a 16 mm (5/8 inch) hole which is,
  - complete with tamperproof and weatherproof knockout plug on the enclosure roof; and,
  - located as close as possible to the front of the enclosure and within 24-inch radius of the meter; and,
  - at least 6 inches away from all edges.

b) If it is proposed to lock the enclosure, the details of the locking should include double padlocking provision as approved by local BC Hydro design.

c) Kiosk meter center line is allowed to be 915 mm to 1800 mm above finished grade.

Temporary construction power meter sockets may be installed within enclosure, but the enclosure shall have a 16 mm (5/8 inch) hole which is complete with a tamperproof and weatherproof knockout plug on the enclosure roof at least 6 inches away from all edges.

4.2.4 Recessed Mounting

Meter sockets may be recessed within exterior walls provided:

- The associated underground supply service conductors are permitted to be installed within the exterior wall per BC Hydro Distribution Standards drawings:
  - The recess depth is less than the depth of the meter socket, i.e., the meter socket cover shall project a minimum of 25 mm beyond the finished exterior wall surface; and
  - A minimum of 25 mm wide by 25 mm depth spacing shall be provided between the finished exterior wall surface and on two sides and bottom side of the meter socket.
- Recessing does not interfere with the installation, reading or removal of the meter; and
- Recessing does not interfere with the installation or removal of the meter socket cover.

The overhead service mast and conductors are consumer service conductors.

Section 6-208 of the Canadian Electrical Code restricts the installation of consumer service conductors within an exterior wall. The meter shall be installed on the outside of the finished exterior wall for detached single family residential services.

4.2.5 Ground Connections

Where permitted by the Canadian Electrical Code, grounding connections for other systems, such as telephone, cable TV, or etc., shall:

- Not terminate within the meter socket; and
- Not terminate or routed through BC Hydro's wireway/pillbox; and
- Not interfere with the installation, reading or removal of the meter; and
- Not interfere with the installation or removal of the meter socket cover.

4.2.6 Meters Mounted on Poles

Meter sockets shall be located on the side of the pole that is not subject to vehicle damage. If this is not practicable, protection posts shall be installed 600 mm in front of the meter socket in accordance with section 6.3

4.2.7 Gas and Propane devices

Meter clearance from vent line and bleed vent terminations shall be in accordance with table 5.3 from Natural gas and propane installation code (CSA B149.1:25). See section 6.4.

4.2.8 Multiple Main Meter Sockets

When, in accordance with section 6-104 of the Canadian Electrical Code multiple meter sockets connected to one supply service are installed on the exterior of a building; BC Hydro only permits a maximum of four (for five or six services the customer shall obtain acceptance from the local authority having jurisdiction), 1 phase meter sockets. The multiple main meter sockets:

a) Shall be part of a certified manufactured assembly; and

Site fabricated assemblies are not permitted.

b) Shall be installed in accordance with section 6.5; and

c) Shall meet the requirements of individual meter sockets in section 4.2; and

d) Shall not have spare meter sockets except the spare meter socket is assigned to a unit that is in construction and to be completed within 6 – 12 months; A

clear polycarbonate cover plate (e.g. Lexan) with tabs that plugs into meter socket jaws and a meter sealing ring shall be supplied and installed; and

e) If they have a separate supply service compartment, removal of the supply service compartment cover, shall require operation of a latch that can only be accessed by the removal of the adjacent meter.

Assemblies that require the installation of a padlock or non-meter ring seal to secure the supply service compartment cover are not permitted.

f) Prior to the installation of the meters by BC Hydro:

- Each Customer suite address or suite number shall be permanently and legibly marked on the interior of each meter socket and the exterior of each meter socket cover; and
- All suite doors, complete with their permanent address or suite numbers, shall be installed.

4.3 Meter Centres

a) Meter centres shall be installed in accordance with section 6.6; and

b) Meter centres shall be certified in accordance with CSA Standard C22.2 No. 229 *Switching and Metering Centres* and shall be approved by BC Hydro; and

c) Meter Centre shall be cold style with the meter socket located on the load side of the associated circuit breaker; and

d) The circuit breaker shall have provision for locking in the open position; and

e) The centre-to-centre dimension of adjacent meter sockets shall not be less than 220 mm and the centre to any adjacent equipment, structure or obstruction shall be not less than 220 mm and;

f) Prior to the installation of the meters by BC Hydro:

- Each Customer suite address or suite number shall be permanently and legibly marked on the interior of each meter socket and the exterior of each meter socket cover; and
- All suite doors, complete with their permanent address or suite numbers, shall be installed.

g) Meter centres may be located behind a hallway door provided the door frame does not restrict the required 1 m clearance, or access to any of the meter sockets. The following clearance shall be provided between the closed door and each meter socket cover:

- 250 mm for all meter types.

4.3.1 Surplus Meter Positions

Meter positions that exceed the required number for the completed project are defined as surplus meter positions, (i.e. 47 total units but 48 meter positions supplied because meter centres/stacks come in fixed numbers). New meter centre(s) must have the surplus positions removed/disabled and manufacturer-installed metal blanking plate to cover socket opening and breaker section.

4.3.2 Spare Meter Positions

Meter positions that are required for future additional loads or EV Chargers, whereas already assigned to complete a project are defined as spare meter positions. Meter Centres shall not have spare meter sockets except where the spare meter socket is assigned to a unit that is in construction and to be completed within 6 – 12 months; or where the spare meter socket is assigned to a parking stall.

Contractors are required to supply and install the following:

- A clear polycarbonate cover plate (e.g., Lexan) with tabs that plug into meter socket jaws and a meter sealing ring.

4.4 Grouped Sub Service Metering

a) Grouped, field constructed sub service meter assemblies shall be in accordance with section 6.7; and

b) The individual meter sockets shall be in accordance with section 4.2. Except that the meter sockets may be from 700 mm to 1800 mm above finished grade; and

c) Instrument Transformer Metering shall be in accordance with section 5; and

d) The grouped sub service metering shall be cold style with each meter socket located on the load side of a sub service disconnect device; and

The main service box is not an acceptable means for isolating a sub service meter socket. Each sub service meter socket therefore requires its own disconnect device.

Additions to existing non-conforming installations shall be in accordance with this requirement.

e) The sub service disconnect device shall have provision for locking in the open position; and

f) In accordance with section 4.1, metered and unmetered conductors shall not be installed in the same raceway or distribution gutter box; and

g) The distribution gutter box shall have provision for the installation of BC Hydro seals; and

h) The centre-to-centre dimension of adjacent meter sockets shall not be less than 220 mm and the centre to any adjacent equipment, structure, or obstruction dimension, shall be not less than 220 mm; and

i) Each meter socket shall be:
- Adjacent to, and as close as practicable to, the controlling sub service disconnect device; and
- In the same room as the controlling sub service disconnect device; and

It shall be immediately obvious from the conduit configuration which sub service disconnect device is controlling each meter socket. It is unacceptable to supply the meter sockets from circuit breakers located in a panelboard.

j) Each sub service disconnect device shall be:

- Adjacent to, and as close as practicable to, the distribution gutter box; and
- In the same room as the distribution gutter box; and

k) Prior the installation of the meters by BC Hydro:

- Each Customer suite address or suite number shall be permanently and legibly marked on the interior of each meter socket, the exterior of each meter socket cover, and the sub service disconnect device; and
- All suite doors, complete with their permanent address or suite numbers, shall be installed; and

l) Where a 3 phase, 4 wire supply, serves a 3 phase, 3 wire load, a 7 jaw, 3 phase, 4 wire meter socket shall be installed and the neutral shall be extended from the distribution gutter box to the meter socket.

The neutral conductor:

- Shall be white and insulated; and
- Shall carry the same ampacity of the line conductor; and
- Shall not be smaller than No. 6 AWG and meet the minimum conductor size rating of the meter socket neutral terminal.

4.5 Service Pedestals

Service Pedestal is a free-standing meter socket permanently mounted on a concrete platform, rated for outdoor use, and come with separate line and load side wireways per BC Hydro Distribution Standards drawings and the followings:

a) Service Pedestals shall not be subject to vehicle or vandalism damage; and
b) Meter socket shall be in accordance with section 4.2 and section 6.8; and
c) Shall have a continuous barrier between the unmetered supply conductors and the metered load conductors; and
d) Shall permit access to the unmetered supply conductors only after performing the following removal sequence:

   - Meter sealing ring; then
   - Meter; then
   - Meter socket cover; then
   - Unmetered supply conductor cover.

Pedestals that require the installation of a padlock or non-meter ring seal to secure the unmetered conductor cover are not permitted.

e) The Service Pedestal unmetered supply conductors shall be installed in a continuous conduit between the BC Hydro point of supply and the service pedestals. Intermediate underground enclosures, or other potential points of access, are not permitted.

f) Service Pedestal with meter's centre line shall be between 915 mm and 1800 mm above finished grade.

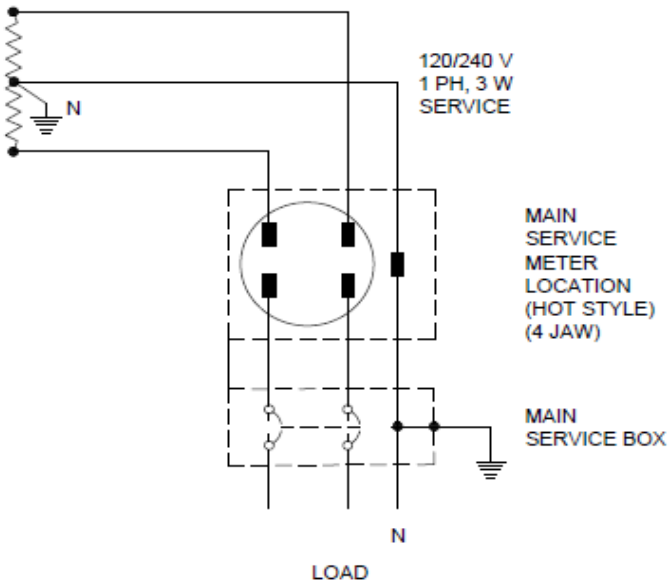
4.6 Schematic Drawings

Self-Contained meter sockets shall be in accordance with the schematic drawings in this section. The drawings illustrate a "main service box". In accordance with ES54, the protective device in the main service box shall be a breaker.

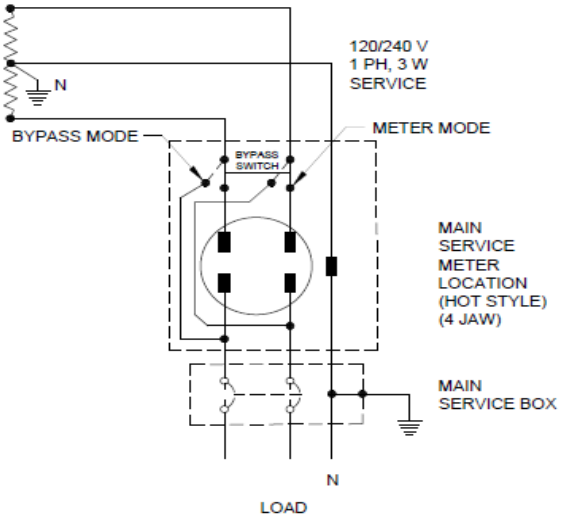
Metering style (hot/cold) shall be in accordance with section 3.9.

4.6.1 120/240 V, 1 Phase, 3 Wire, Main Service

- 200A and less:



- 200A to 320A:

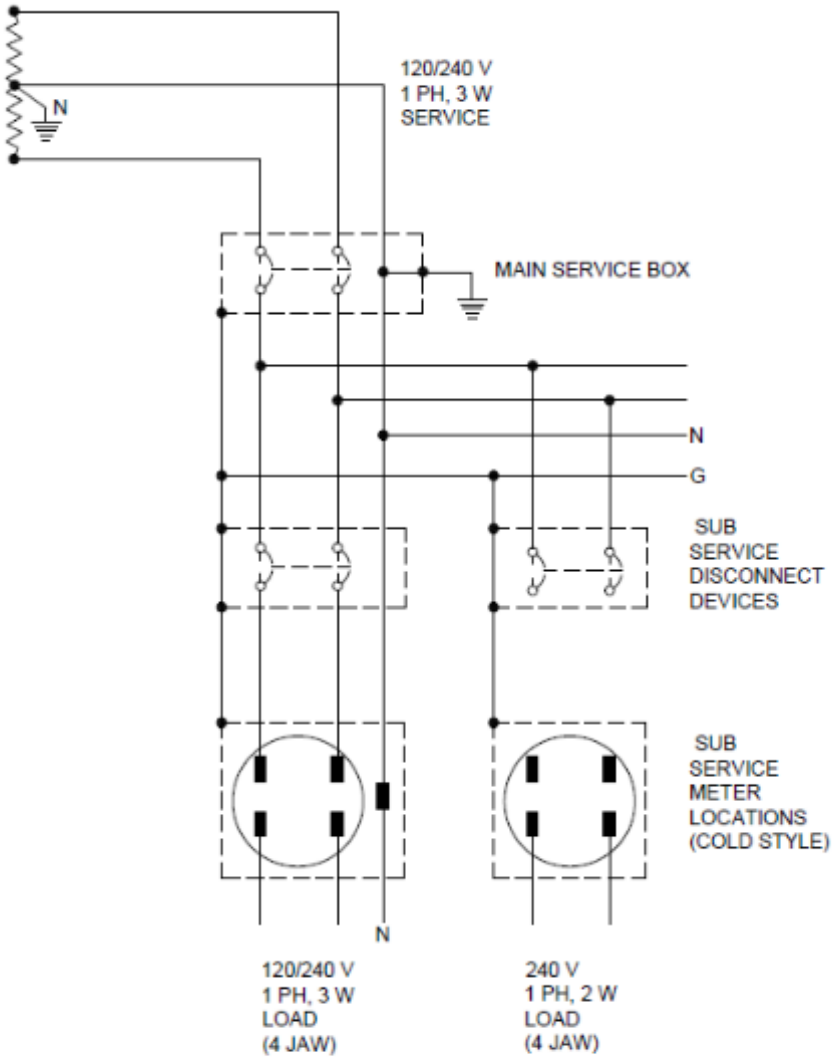


Notes:

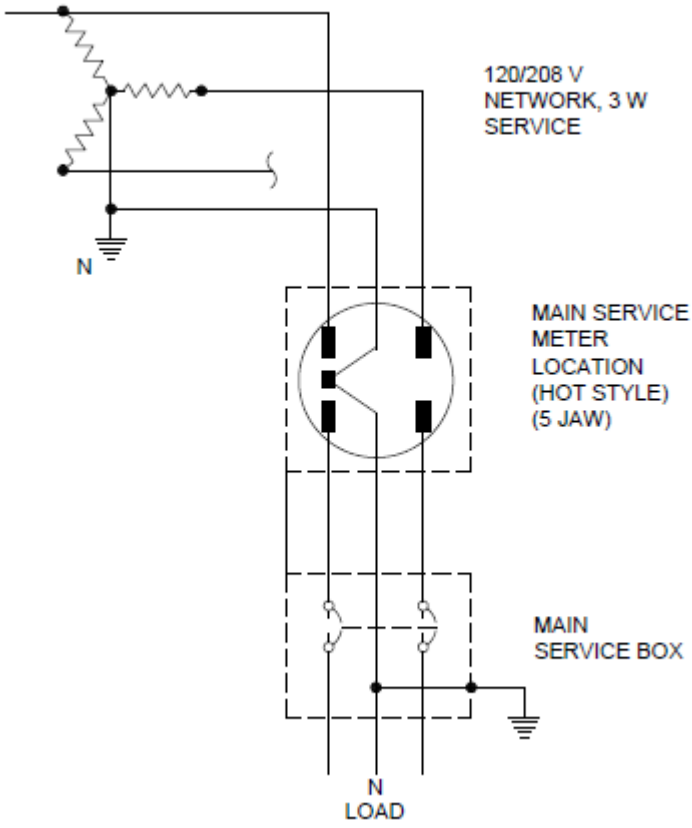
1. This is a typical residential service. In accordance with section 3.2, for detached single family residential services, the meter socket shall not be located indoors.

2. For grounding options refer to BCEC Rule 10-210, figures B10-4 and B10-5.

4.6.2 120/240 V, 1 Phase, 3 Wire, Sub Services



4.6.3 120/208 V, Network, Main Service



Notes:

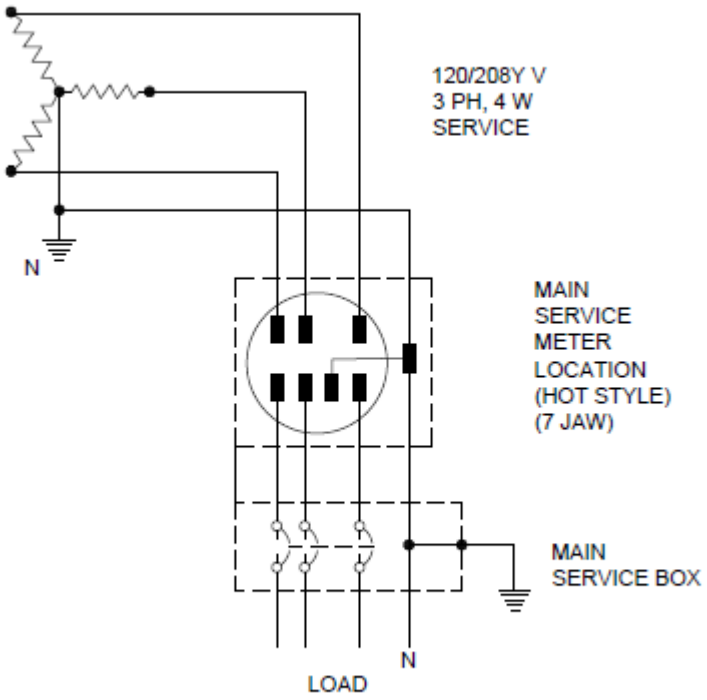
1. A 120/208 V, network service consists of two phase conductors plus a neutral conductor supplied from a 120/208Y V, 3 phase, 4 wire power system.

2. 120/208 V network main services are restricted to downtown Victoria and a very limited number of other locations.

3. The above hot style configuration is applicable if the service fault current is 10,000 A or less. **If the service fault current is greater than 10,000 A**:

   - The meter shall be on the load side of the main service box (cold style)

4.6.4 120/208Y V, 3 Phase, 4 Wire, Main Service

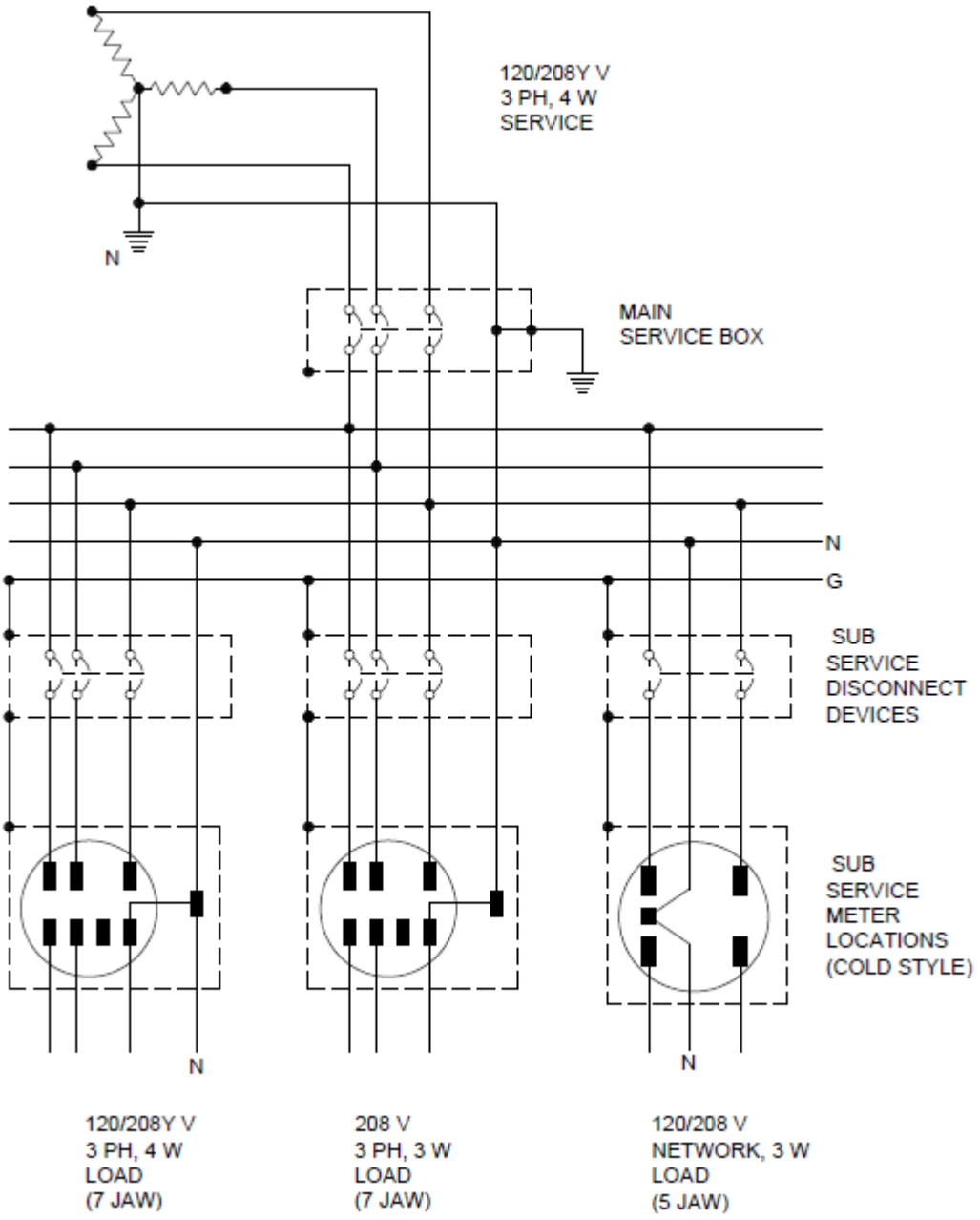


Notes:

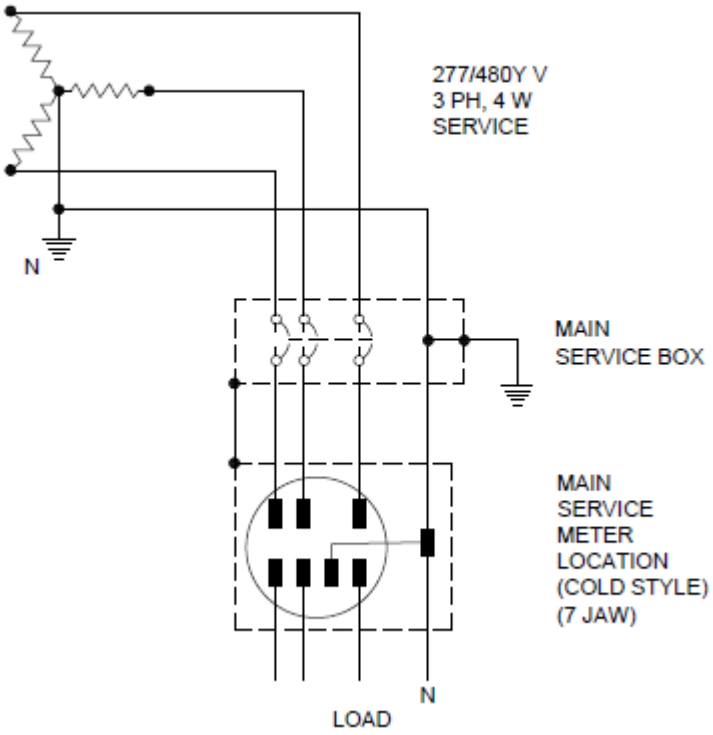
1. The above hot style configuration is applicable if the service fault current is 10,000 A or less. **If the service fault current is greater than 10,000 A**:

   - The meter shall be on the load side of the main service box (cold style)

4.6.5 120/208Y V, 3 Phase, 4 Wire, Sub Services



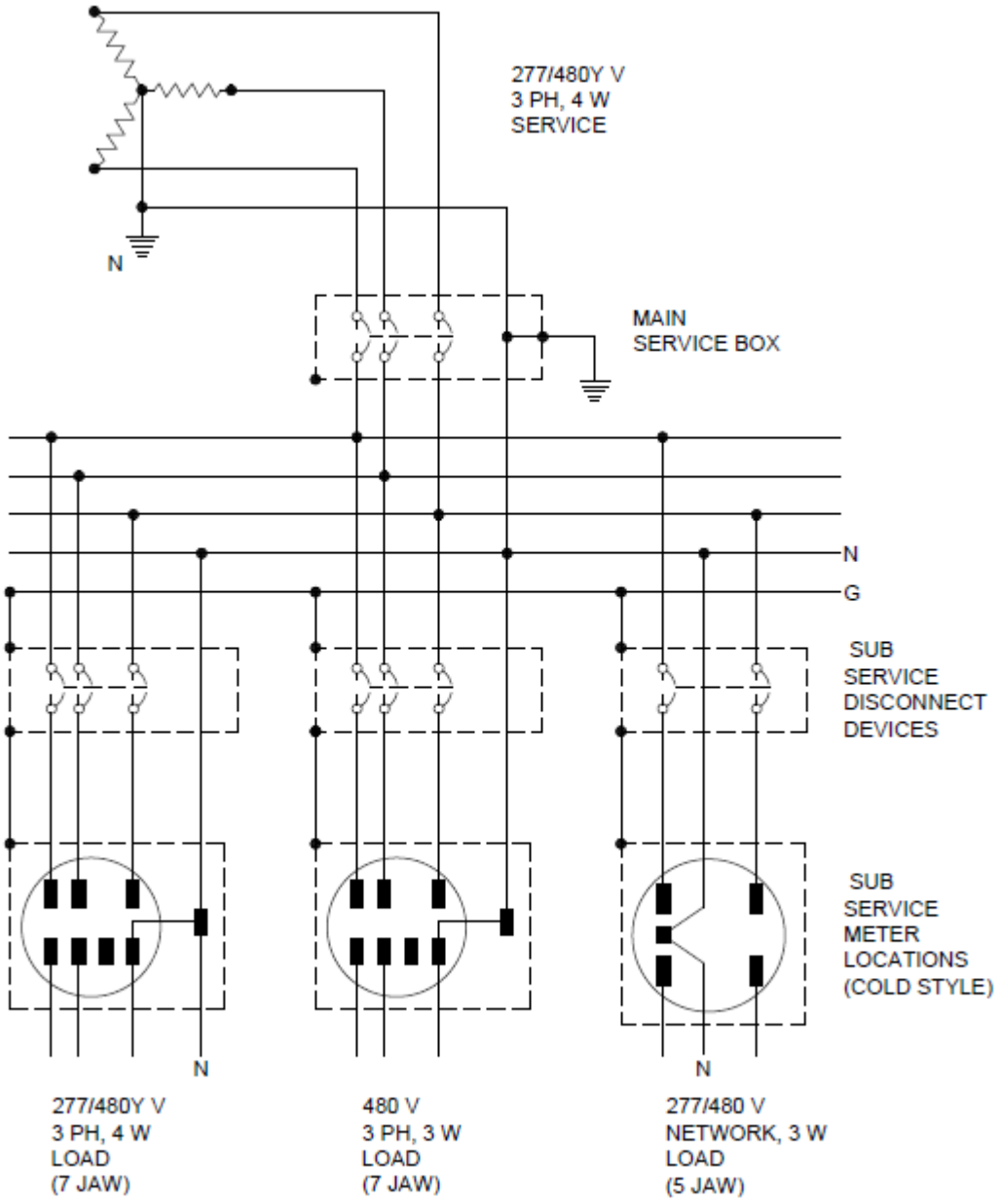
4.6.6 277/480Y V, 3 Phase, 4 Wire, Main Service



Notes:

1. This is not a standard BC Hydro service voltage. However, if the Customer provides the power transformers, BC Hydro will provide the meter.

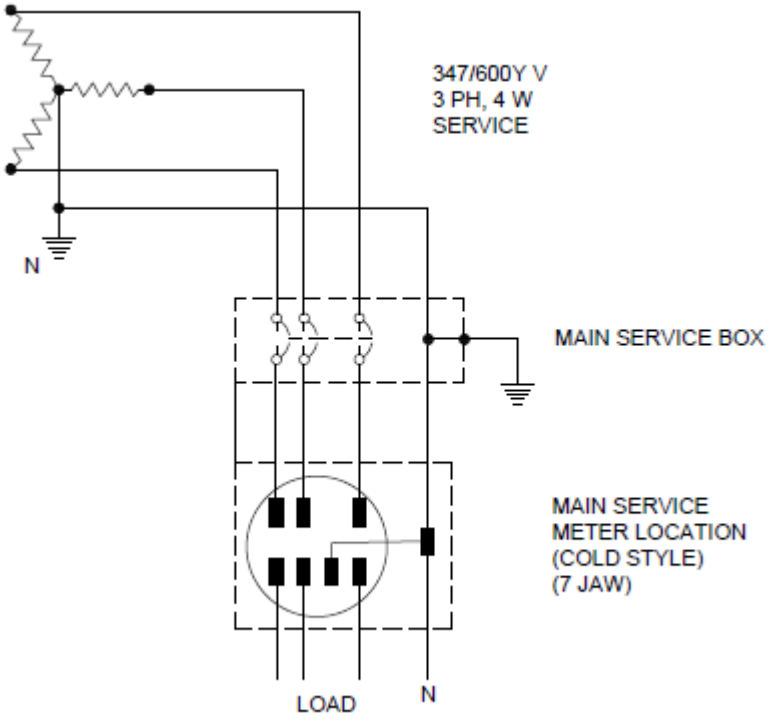
4.6.7 277/480Y V, 3 Phase, 4 Wire, Sub Services



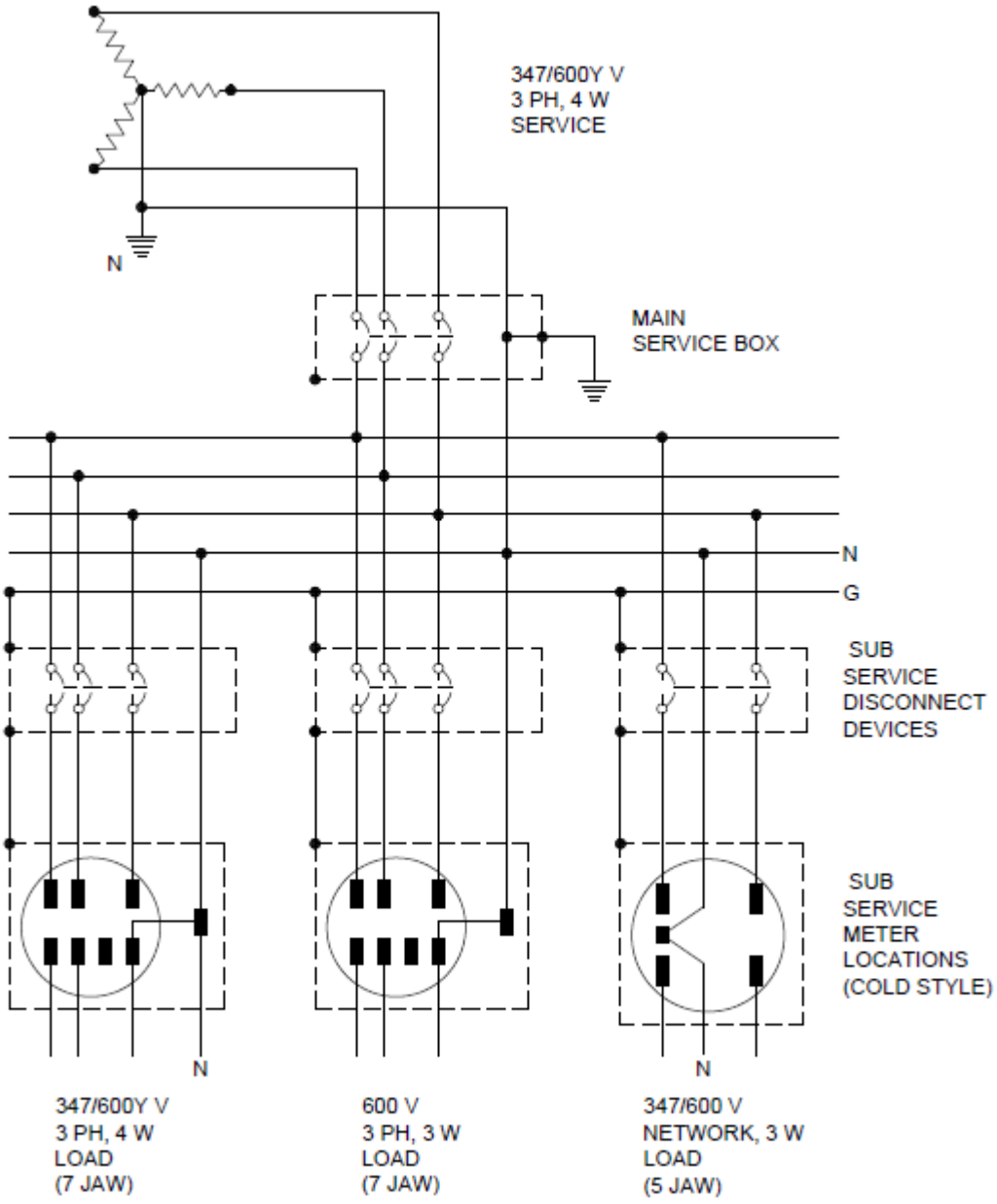
Notes:

This is not a standard BC Hydro service voltage. However, if the Customer provides the power transformers, BC Hydro will provide the meter.

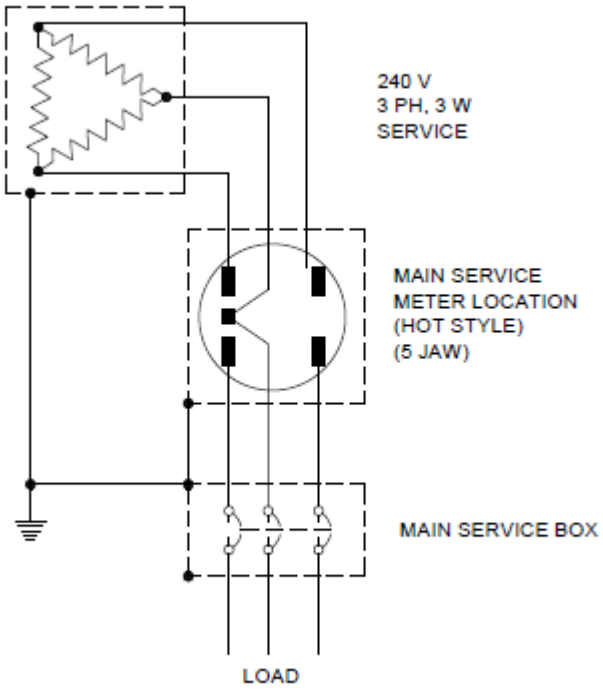
4.6.8 347/600Y V, 3 Phase, 4 Wire, Main Service



4.6.9 347/600Y V, 3 Phase, 4 Wire, Sub Services



4.6.10 240 V, 3 Phase, 3 Wire Delta, Main Service



Notes:

1. This is not a standard BC Hydro service voltage. However, if the Customer provides the power transformers, BC Hydro will provide the meter.

2. The above hot style configuration is applicable if the service fault current is 10,000 A or less. **If the service fault current is greater than 10,000 A**, the meter shall be on the load side of the main service box (cold style).

4.6.11 480 V and 600 V, 3 Phase, 3 Wire Delta, Main Service

600 V, 3 Phase, 3 Wire Delta is not a standard BC Hydro service voltage and BC Hydro does not provide Self-Contained 600 V, 3 Phase, 3 Wire Delta meters for new services. However, if the Customer provides the power transformers, BC Hydro will supply 600 V, 3 Phase, 3 Wire Delta Instrument Transformer Metering. See section 5.2.6.

5. Instrument Transformer Metering

Instrument Transformer Metering is required for:

- 120/240V, 1PH, 3W with loads over 320 A; and
- Any other voltages with loads over 200 A;
- 600 V, 3 Phase, 3 Wire, Delta services 200 A or less,
- 480 V, 3 Phase, 3 Wire, Delta services 200 A or less,
- Fire pump services >67h.p. (50 kW) – use 'donut' or window type CTs only (See drawings 6.14 and 6.15)

5.1 General

a) Metered and unmetered conductors shall not be installed in the same raceway, pull box or distribution gutter box.

b) The unmetered service conductor after main switch shall be continuous and without access fittings or junction boxes up to the point of metering. This precludes distribution gutter box as depicted in section 6.7.

c) Customer devices shall not be connected to BC Hydro VT and CT secondary winding circuits and installed in designated BC Hydro compartment.

d) The switchgear panel shall not have spare breakers except designated for future metering of an area under construction and to be completed within 6 – 12 months.

e) Accepted Meter Sockets: https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/distribution/standards/meter-sockets-list.pdf

For any spare breaker not meeting above, it shall be removed and covered by manufacturer supplied metal blanking plate.

5.1.1 1 Phase

5.1.1.1 Residential 1 Phase Services – Over 320A

400A Meter socket has CTs embedded and the meter by itself is a standard transformer rated meter with max 5A current.

Detached single family residential 1 phase services, over 320 A, shall only be metered in an outdoor location using the following options:

- 120/240V 1 phase 400A meter socket assembly with an integral CT in accordance with section 5.5; or
- Instrument transformer enclosure and **Transformer-Type Meter Socket** in accordance with section 5.3 and 5.7; or
- Switchgear instrument transformer compartment and **Transformer-Type Meter Socket** in accordance with section 5.4.

The above are preferred point of metering arrangements. However, other arrangements such as, located inside power shed or service closet on customer's property may be acceptable subject to approval from BC Hydro.

The above installations must be installed on the load side of customer owned service equipment and as such must meet the latest requirements of BC Hydro, the local electrical inspection authority, and the BC Electrical Code Regulation. Approval from BC Hydro and the local inspection authority should be obtained prior to finalizing plans for these services.

5.1.1.2 Other 1 Phase Services Over 320A

1 phase services, other than detached single family residential, shall be metered in an indoor or outdoor location using the following options:

- Instrument transformer enclosure and **Transformer-Type Meter Socket** in accordance with section 5.3 and 5.7; or
- Switchgear instrument transformer compartment and **Transformer-Type Meter Socket** in accordance with section 5.4; or
- 120/240V 1 phase 400A meter socket assembly with an integral CT in accordance with section 5.5.

Other arrangements such as, located inside a power shed or service closet on customer's property may be acceptable subject to approval from BC Hydro.

The above installations must be installed on the load side of customer owned service equipment and as such must meet the latest requirements of BC Hydro, the local electrical inspection authority and the BC Electrical Code Regulation. Approval from BC Hydro and the local inspection authority should be obtained prior to finalizing plans for these services.

In accordance with section 5.8, where the instrument transformer enclosure/compartment is located indoors, the Transformer-Type Meter Socket or the meter cabinet shall be located indoors in the same electrical/meter room as the instrument transformer enclosure/compartment.

The instrument transformer enclosure/compartment and Transformer-Type Meter Socket may be located indoors provided:

- They are located in an electrical/meter room with a vertically hinged, lockable door leading directly to the exterior of the building (roll-up or overhead garage doors are not acceptable as access doors);
- The accessibility arrangements for the exterior hinged door are agreed upon by BC Hydro prior to approval.

5.1.2 3 Phase

5.1.2.1 Residential 3 Phase Services Over 200A, including any 480V and 600V, 3 Phase, 3 Wire, Delta services

Detached single family residential 3 phase services shall be metered in an indoor or outdoor location using the following options:

- Instrument transformer enclosure and **Transformer-Type Meter Socket** in accordance with section 5.3.1; or
- Switchgear instrument transformer compartment and meter **Transformer-Type Meter Socket** in accordance with section 5.4;

Indoor detached single family residential metering is not preferred, however if agreed to be inside an electrical/meter room, direct access shall be arranged with BC Hydro prior to approving proposed location. Other arrangements such as, located inside a power shed or service closet on customer's property may be acceptable subject to approval from BC Hydro.

The above installations must be installed on the load side of customer owned service equipment and as such must meet the latest requirements of BC Hydro, the local electrical inspection authority and the BC Electrical Code Regulation. Get approval from BC Hydro and the local inspection authority prior to finalizing plans for these services.

The instrument transformer enclosure/compartment and Transformer-Type Meter Socket may be located indoors provided:

- They are located in an electrical/meter room with a vertically hinged, lockable door leading directly to the exterior of the building (roll-up or overhead garage doors are not acceptable as access doors);
- The accessibility arrangements for the exterior hinged door are agreed upon by BC Hydro prior to approval.

In accordance with section 5.8, where the instrument transformer enclosure/compartment is located indoors, the Transformer-Type Meter Socket shall

be located indoors in the same electrical/meter room and within 3m of the instrument transformer enclosure/compartment.

5.1.2.2 Other 3 Phase Services Over 200A, including any 480V and 600V, 3 Phase, 3 Wire, Delta services

3 phase services, other than detached single family residential, shall be metered in an indoor or outdoor location using the following options:

- Instrument transformer enclosure and **Transformer-Type Meter Socket** in accordance with section 5.3 and 5.7; or
- Switchgear instrument transformer compartment and **Transformer-Type Meter Socket** in accordance with section 5.4; or

Other arrangements such as, located inside a power shed or service closet on customer's property may be acceptable subject to approval from BC Hydro.

The above installations must be installed on the load side of customer owned service equipment and as such must meet the latest requirements of BC Hydro, the local electrical inspection authority and the BC Electrical Code Regulation. Get approval from BC Hydro and the local inspection authority prior to finalizing plans for these services.

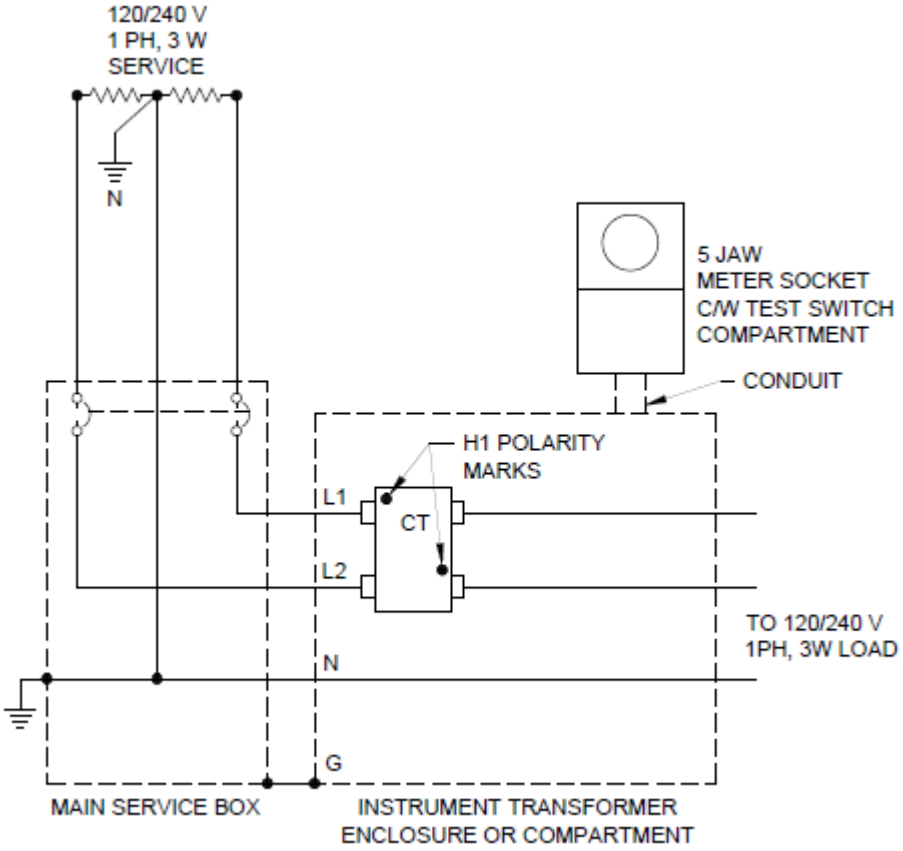
The instrument transformer enclosure/compartment and Transformer-Type Meter Socket may be located indoors provided:

- They are located in an electrical/meter room with a vertically hinged, lockable door leading directly to the exterior of the building (roll-up or overhead garage doors are not acceptable as access doors);
- The accessibility arrangements for the exterior hinged door are agreed upon by BC Hydro prior to approval.

5.2 Schematic Drawings

Instrument Transformer Metering shall be installed in accordance with the schematic drawings in this section. The drawings illustrate a "main service box". In accordance with ES54, the protective device in the main service box shall be a breaker.

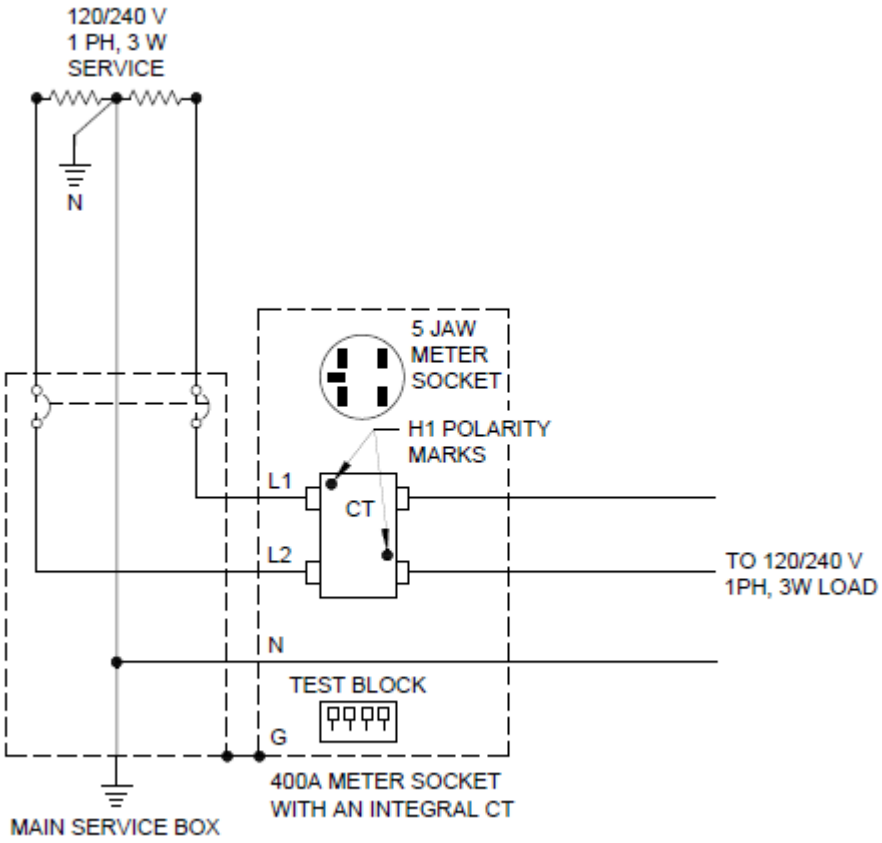
5.2.1 120/240 V, 1 Phase, 3 Wire Service – Instrument Transformer Enclosure or Compartment



Notes:

1. See section 5.3.1.1 and 5.3.2.1.

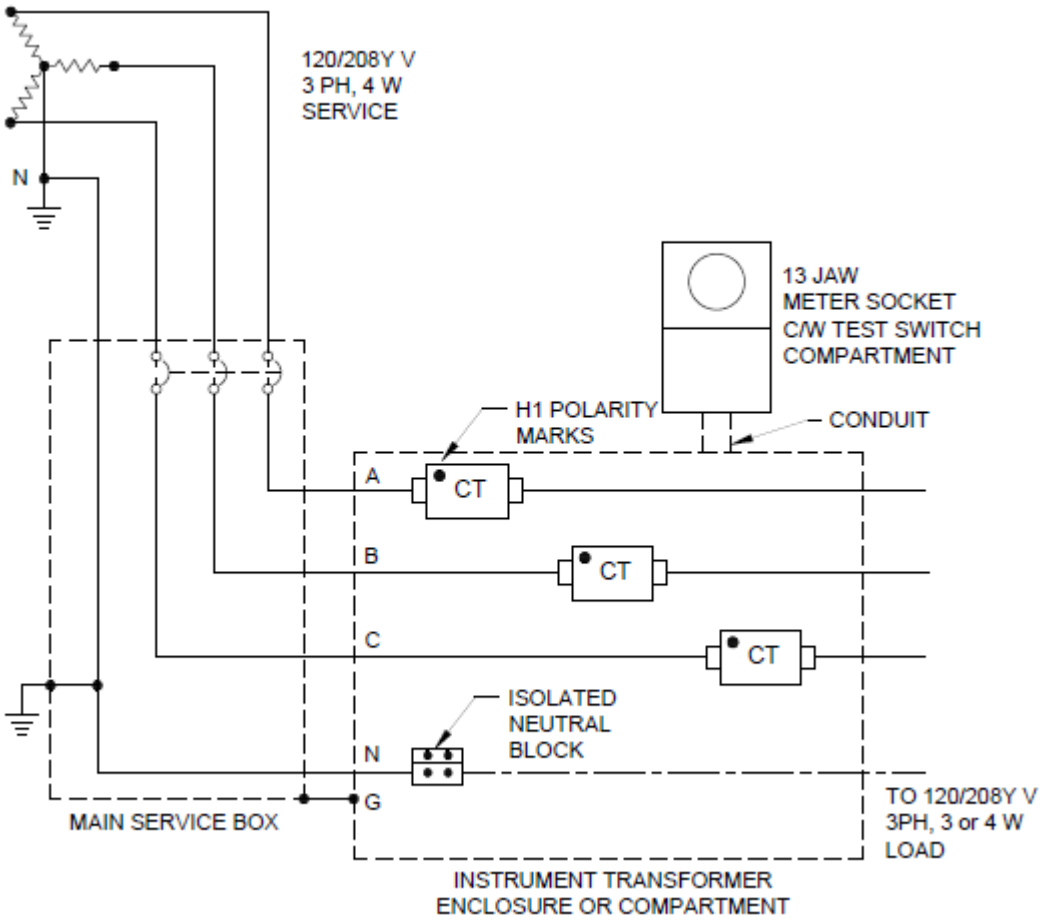
5.2.2 120/240 V, 1 Phase, 3 Wire Service – 400 A Meter Socket Assembly with an Integral CT



Notes:

1. See section 5.5 and 5.3.2.1.

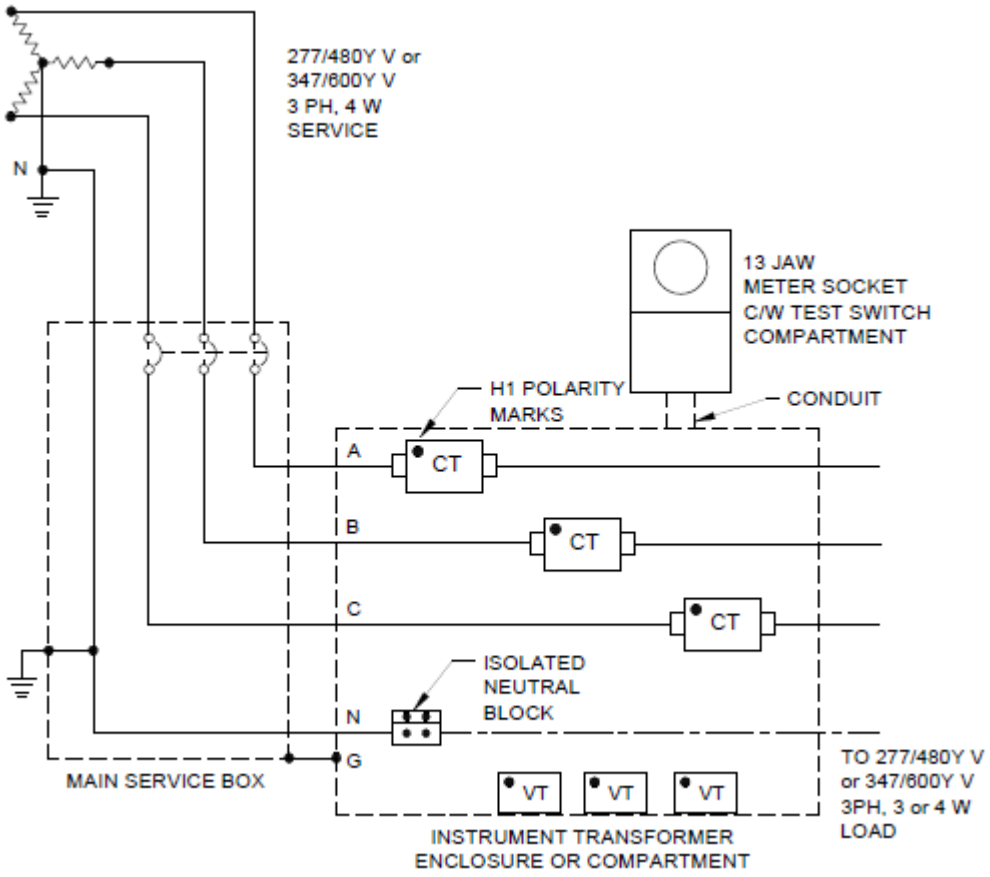
5.2.3 120/208Y V, 3 Phase, 4 Wire Service



Notes:

1. See section See section 5.3.1.2, 5.3.2.2, 5.4.1.2, or 5.4.2.2.

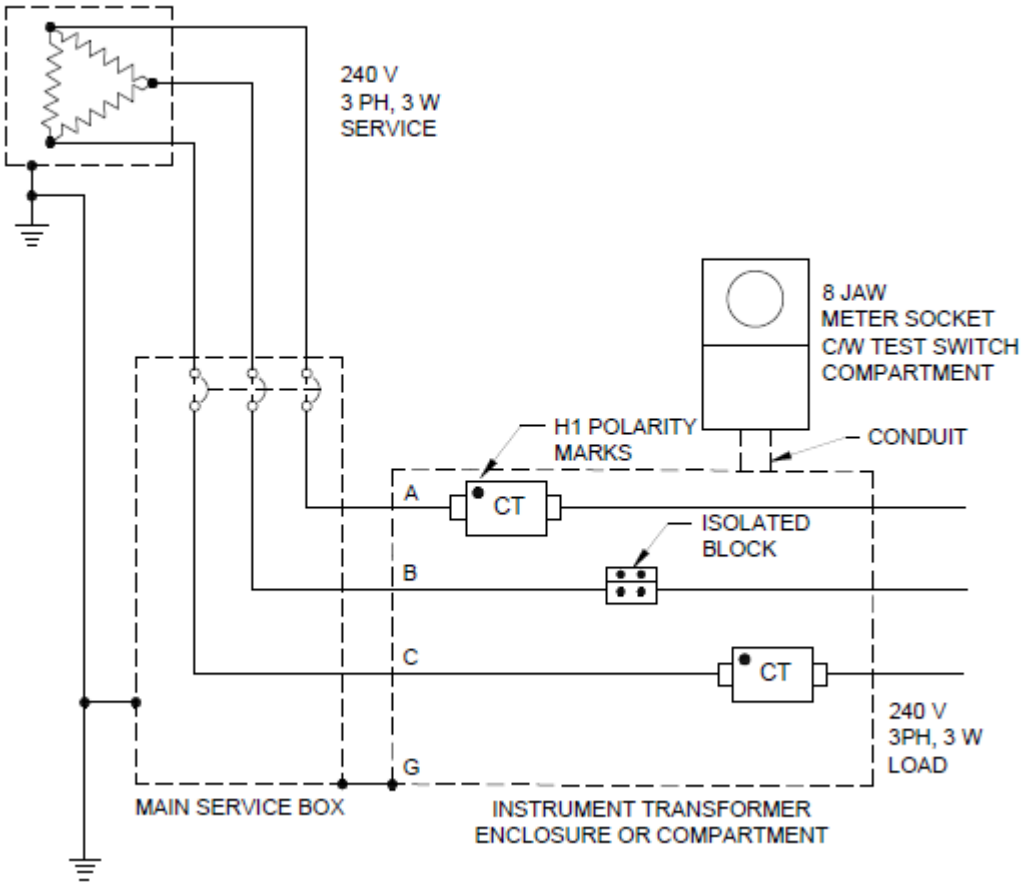
5.2.4 277/480Y V or 347/600Y V, 3 Phase, 4 Wire Service



Notes:

1. See section 5.3.1.2, 5.3.2.2, 5.4.1.2, or 5.4.2.2.
2. BC Hydro will supply the VTs, CTs, and test switch for either a 277/480Y V or a 347/600Y V 3 phase, 4 wire service. However, BC Hydro does not supply the power transformer for a 277/480Y V, 3 phase, 4 wire service.
3. VTs to be installed at the bottom of the Instrument Transformer Enclosure.

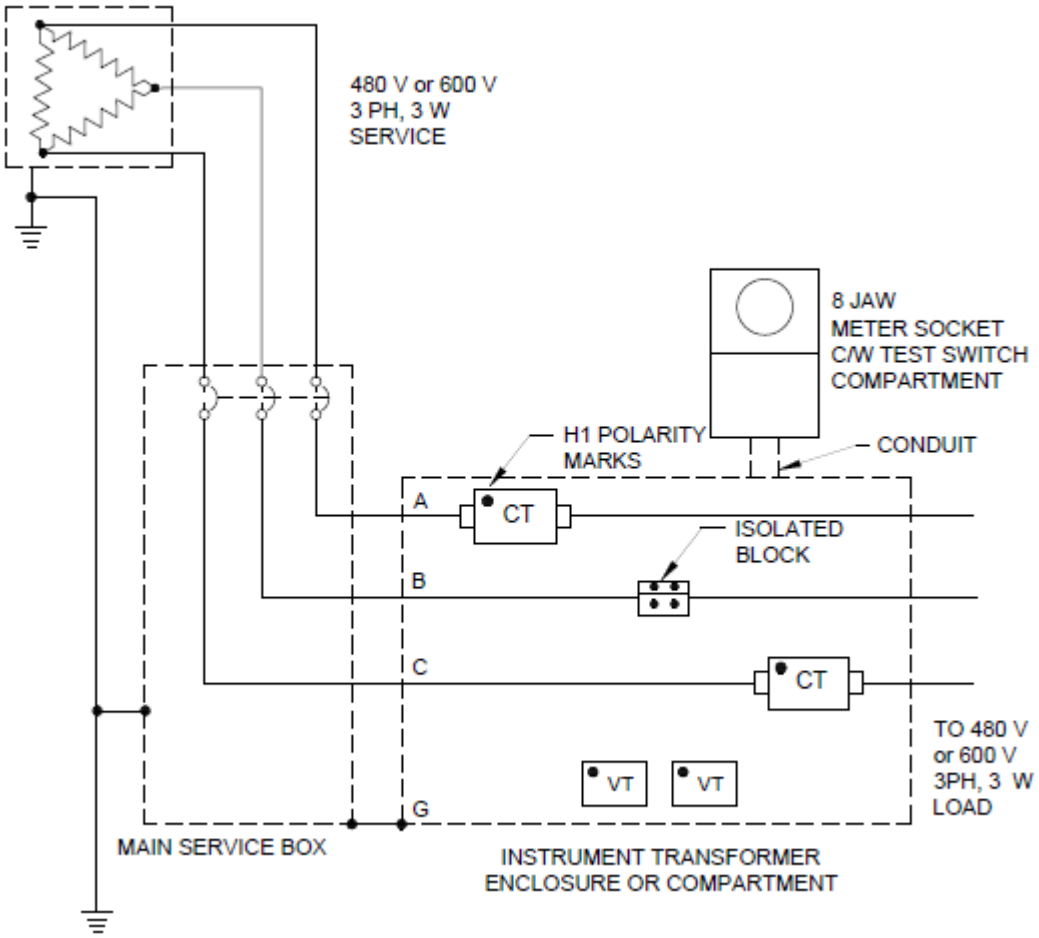
5.2.5 240 V, 3 Phase, 3 Wire Delta Service



Notes:

1. See section 5.3.2.3, 5.3.2.4, 5.4.2.3, or 5.4.2.4.
2. BC Hydro does not supply the power transformers for this service. However, if the Customer provides the power transformers, BC Hydro will supply the CTs and meter.

5.2.6 480 V or 600 V, 3 Phase, 3 Wire Delta Service



Notes:

1. See section 5.3.2.3, 5.3.2.4, 5.4.2.3, or 5.4.2.4.
2. BC Hydro does not supply the power transformers for either of these services. However, if the Customer provides the power transformers, BC Hydro will supply the VTs, CTs and meter.
3. VTs to be installed at the bottom of the Instrument Transformer Enclosure.

The above drawing applies to 200A and less services as well. Self-Contained metering is not provided regardless of size of service.

5.3 Instrument Transformer Enclosure

5.3.1 Responsibility

5.3.1.1 1 Phase

a) The **customer** shall:

- Supply an instrument transformer enclosure
- Instrument transformer enclosure shall be installed in horizontal position in accordance with section 5.1.1.1, 5.1.1.2, and 6.9; and
- Supply and install 5 jaw Transformer-Type Meter Socket in accordance with section 5.7.1; and
- Supply and install a conduit between the instrument transformer enclosure and the meter socket in accordance with section 5.8; and
- Supply and install communication conduit and termination boxes as required in section 3.2; and
- Install the CT(s) in accordance with section 5.6; and
- Make the CT primary connections in accordance with section 5.6

b) The **BC Hydro** will:

- Supply the CT(s); and BC Hydro standard mechanical connectors; and
- Supply and install the test block, meter, and metering wiring.

5.3.1.2 3 Phase

a) The **customer** shall:

- Supply an instrument transformer enclosure and an isolated neutral block
- Instrument transformer enclosure shall be installed in horizontal position in accordance with section 5.1.2.1, 5.1.2.2, and 6.10.
- Supply and install 8 jaw or 13 jaw Transformer-Type Meter Socket in accordance with section 5.7.1; and
- Supply and install a conduit between the instrument transformer enclosure and the meter socket in accordance with section 5.8; and
- Supply and install communication conduit and termination boxes as required in section 3.2 and 6.17; and
- Install the CTs and VTs in accordance with section 5.6; and
- Make the CT primary connections in accordance with section 5.6

b) The **BC Hydro** will:

- Supply the CTs; and BC Hydro standard mechanical connectors; and
- Where the phase-to-phase voltage is over 300 V:

- Supply the VTs; and
- Make the VT primary connections; and
- Supply and install the test switch, meter, and metering wiring.

5.3.2 Equipment

a) The instrument transformer enclosure shall:

- Not be used as a splitter; and
- Shall be installed in horizontal position in accordance with section 6.9 and 6.10 with line entering and load exiting from the opposite ends. Where the enclosure has to be installed in vertical position due to space constraint in an existing installation, written approval shall be obtained from BC Hydro prior to installation.
- Not contain devices or connections other than the BC Hydro metering equipment; and
- Be on the load side of the main service box or sub service disconnect device; and
- Be adjacent to the main service box or sub service disconnect device; and
- CTs and VTs are to be arranged and installed such that most efficient use of space inside the enclosure is accomplished; and
- Where located indoors, be in the same room as the main service box or sub service disconnect device; and
- Where located outdoors, be weatherproof, padlockable, adjacent to the meter socket, and at least 900 mm from finished grade; and
- Be as close as practicable to the meter socket/cabinet *(See section 5.8 for the maximum separation distance)*; and
- Where located indoors, be in the same room as the meter socket/cabinet; and
- For 1 phase installations, be in accordance with the dimensional and other requirements of section 6.9; and
- For 3 phase installations, be in accordance with the dimensional and other requirements of section 6.10; and
- Have flanged sides or hinged cover with provision for installation of BC Hydro wire seals; and
- Be permanently labelled as “BC Hydro Metering”; and
- Have provision for terminating a bonding conductor, within the enclosure, with either:
- A 10-32 bonding screw and washer; or
- A mechanical connector suitable for a No.12 to No. 8 AWG conductor.

The location of an instrument transformer enclosure for detached single family residential services is restricted, See section 5.1.

b) The main service box or sub service disconnect device shall have provision for being locked open with 8 mm (5/16”) shank padlock.
c) For each point-of-metering, the same unique identifier shall be permanently and legibly marked on each of the following:

- Main service box or sub service disconnect; and
- Instrument transformer enclosure; and
- Meter socket/cabinet.

In accordance with WorkSafe BC regulations, it is essential that each instrument transformer enclosure point-of-isolation and meter socket/cabinet is explicitly and unambiguously identified to ensure that it can be safely disconnected and locked out.

d) Where there is a potential for back energization from the load side of the instrument transformer enclosure:

- Written approval shall be obtained from BC Hydro; and
- A CSA approved lockable disconnect device supplied by the switchgear manufacturer shall be provided on the load side of the instrument transformer enclosure; and
- The load side disconnect device shall meet the same requirements as the line side main service box or the line side sub service disconnect device; and
- A warning notice shall be installed in a conspicuous place near the instrument transformer enclosure; and
- A permanent, legible single-line diagram shall be installed in a conspicuous place near the instrument transformer enclosure.

Examples of the potential for back energization include:

- *Where, by special permission from BC Hydro, there are multiple services and/or points of metering and there is the potential for switching loads between them.*
- *Where, by special permission from BC Hydro, the Customer has power generation that may be synchronized and/or closed transition momentarily connected to BC Hydro.*

However, where the Customer has generation connected via a CSA approved transfer switch and/or distributed resources such as photovoltaic systems connected through interactive inverters that are equipped with anti-islanding protection in accordance with Rule 84-008, no potential for back energization is deemed to exist and only a line side disconnect device is required.

5.3.2.1 120/240 V, 1 Phase, 3 Wire

a) For 120/240 V, 1 phase, 3 wire installations, the neutral is not part of the metering circuit.

b) Where a single 3 wire bar type CT is supplied, it shall be installed in accordance with section 6.11. Where two 2 wire bar type CTs are supplied, they shall be installed in accordance with section 6.12.

See also the table in section 5.6.

5.3.2.2 3 Phase, 4 Wire Supply – 3 Phase 4 Wire Load

a) Where a 3 phase, 4 wire supply serves a 3 phase, 4 wire load, all neutral conductor(s) shall be routed through (i.e., in and out) the instrument transformer enclosure. A neutral tap is not acceptable.

b) An isolated neutral block shall be supplied. Where multiple neutral cables are used, only one of the cables is required to be connected to the isolated neutral block. The isolated neutral block shall have either a 10-32 screw and washer or it shall have a mechanical connector suitable for terminating three No. 12 AWG conductors. See section 6.13.

5.3.2.3 3 Phase, 4 Wire Supply – 3 Phase 3 Wire Load

a) Where a 3 phase, 4 wire supply serves a 3 phase, 3 wire load, the neutral shall be extended to the instrument transformer enclosure. The minimum size of the neutral extension shall be 2/0 AWG copper.

b) The neutral extension shall terminate at an isolated neutral block. The isolated neutral block shall have either a 10-32 screw and washer or it shall have a mechanical connector suitable for terminating three No. 12 AWG conductors. See section 6.13.

5.3.2.4 3 Phase, 3 Wire Supply and Load

An isolated block shall be supplied for B phase. Where multiple cables are used, only one of the B phase cables is required to be connected to the isolated block. The isolated block shall have either a 10-32 screw and washer or a mechanical connector suitable for terminating two No. 12 AWG conductors.

5.4 Switchgear Instrument Transformer Compartment

5.4.1 Responsibility

5.4.1.1 1 Phase

a) The **customer** shall:

- Supply and install an instrument transformer enclosure in accordance with section 5.1.1.1 and 5.1.1.2; and
- Supply and install 5 jaw Transformer-Type Meter Socket in accordance with section 5.7.1; and
- Supply and install a conduit between the instrument transformer enclosure and the Transformer-Type Meter Socket in accordance with section 5.8; and
- Install the CT(s) in accordance with section 5.6; and
- Make the CT primary connections in accordance with section 5.6

b) The **BC Hydro** will:

- Supply the CTs; and
- Supply and install the test block, meter, and metering wiring.

5.4.1.2 3 Phase

a) The **customer** shall:

- Supply and install an instrument transformer enclosure in accordance with section 5.1.2.1 and 5.1.2.2; and
- Supply and install Supply and install 8 jaw or 13 jaw Transformer-Type Meter Socket in accordance with section 5.7.1; and
- Supply and install a conduit between the instrument transformer enclosure and the Transformer-Type Meter Socket in accordance with section 5.8; and
- Install the CTs in accordance with section 5.6; and
- Make the CT primary connections in accordance with section 5.6

b) **BC Hydro** will:

- Supply the CTs; and
- Where the phase-to-phase voltage is over 300 V:
  - Supply the VTs; and
  - Make the VT primary connections; and
- Supply and install the test switch, meter, and metering wiring.

5.4.2 Equipment

a) The switchgear instrument transformer compartment shall:

- Be barriered off from other compartments; and
- Not be used as a splitter; and
- Not contain devices or connections other than the BC Hydro metering equipment; and
- Be on the load side of the main service box or sub service disconnect device; and
- Be as close as practicable to the main service box or sub service disconnect device; and
- Where located indoors, be in the same room as the main service box or sub service disconnect device; and
- Be as close as practicable to the meter socket/cabinet *(See section 5.8 for the maximum separation distance)*; and
- Where located indoors, be in the same room as the meter socket/cabinet; and
- Be of sufficient size to provide acceptable access for the installation, wiring, and removal of the instrument transformers; and
- Minimum clearance of VT above surface (floor, ground) shall be 250mm; and
- Provide a minimum of 155 mm clearance between the top of the VTs and any barrier or obstruction, and 50 mm from any side of VT to any part of the enclosure or live conductors; and
- Not have a depth greater than 610 mm; and
- Not required access through other compartments; and
- Have a hinged cover with provision for the installation of a BC Hydro wire seal; and
- Be permanently labelled as “BC Hydro Metering”; and
- Have a provision for terminating a bonding conductor, within the compartment, with either:
  - A 10-32 bonding screw and washer; or
  - A mechanical connector suitable for a No. 12 to No. 8 AWG conductor

Where the BC Hydro service is at a primary voltage level (4kV – 35kV), the main service box or sub service disconnect device may be on the primary of the Customer power transformer.
The overall dimension of the instrument transformer compartment is not specified.

The use and location of an instrument transformer compartment for detached single family residential services is restricted, See section 5.1.

b) The CTs shall be 600 to 1800 mm above the floor level.

This only applies to the mounting height of the CTs within the switchgear instrument transformer compartment. The bottom and top of the switchgear instrument transformer compartment may be lower or higher.

c) The main service box or sub service disconnect device shall have provision for being locked open with an 8 mm (5/16”) shank padlock.

d) For each point-of-metering, the same unique identifier shall be permanently and legibly marked on each of the following:

- Main service box or sub service disconnect; and
- Instrument transformer compartment; and
- Meter socket.

In accordance with WorkSafe BC regulations, it is essential that each instrument transformer compartment point-of-isolation and meter socket/cabinet is explicitly and unambiguously identified to ensure that it can be safely disconnected and locked out.

e) Where there is a potential for back energization from the load side of the instrument transformer compartment:

- Written approval shall be obtained from BC Hydro; and
- A CSA approved lockable disconnect device supplied by the switchgear manufacturer shall be provided on the load side of the instrument transformer compartment; and
- The load side disconnect device shall meet the same requirements as the line side main service box or the line side sub service disconnect device; and
- A warning label shall be installed in a conspicuous place near the instrument transformer compartment; and
- A permanent, legible single-line diagram shall be installed in a conspicuous place near the instrument transformer compartment; and

Examples of the potential for back energization include:

- *where, by special permission from BC Hydro, there are multiple services and/or points of metering and there is the potential for switching loads between them.*
- *Where, by special permission from BC Hydro, the Customer has power generation that may be synchronized, and/or closed transition momentarily connected to BC Hydro.*

However, where the Customer has generation connected via a CSA approved transfer switch and/or distributed resources such as photovoltaic systems connected through interactive inverters that are equipped with anti-islanding protection in accordance with Rule 84-008, no potential for back energization is deemed to exist and only a line side disconnect device is required.

5.4.2.1 120/240 V, 1 Phase, 3 Wire

a) For 120/240 V, 1 phase, 3 wire installations, the neutral is not part of the metering circuit.

b) Where a single 3 wire bar type CT is supplied, it shall be installed in accordance with section 6.11. Where two 2 wire bar type CTs are supplied, they shall be installed in accordance with section 6.12.

See also the table in section 5.6.

5.4.2.2 3 Phase, 4 Wire Supply – 3 Phase 4 Wire Load

a) Where a 3 phase, 4 wire supply serves a 3 phase, 4 wire load;

- The neutral bus shall be routed through (i.e., in and out) the instrument transformer compartment; or
- A rigid neutral bus tap shall be provided from the neutral bus to the instrument transformer compartment. The rigid neutral bus tap shall not be less than 25 mm x 6 mm (1" x 1/4").

b) A 10-32 screw and washer shall be supplied at the following points:

- Line side of the A phase CT; and
- Line side of the B phase CT; and
- Line side of the C phase CT; and
- Neutral bus or neutral tap.

5.4.2.3 3 Phase, 4 Wire Supply – 3 Phase 3 Wire Load

a) Where a 3 phase, 4 wire supply serves a 3 phase, 3 wire load, the neutral bus shall be extended to the instrument transformer compartment. The rigid neutral bus extension shall not be less than 25 mm x 6 mm (1" x 1/4").

b) A 10-32 screw and washer shall be supplied at the following points:

- Line side of the A phase CT; and
- Line side of the B phase CT; and
- Line side of the C phase CT; and
- Neutral bus extension.

5.4.2.4 3 Phase, 3 Wire Supply and Load

A 10-32 screw and washer shall be supplied at the following points:

- Line side of the A phase CT; and
- B phase (2 x 10-32 screws); and
- Line side of the C phase CT.

5.5 120/240 V, 1 Phase, 400 A Meter Socket Assembly with an Integral CT

BC Hydro will allow the use of;

- 400A meter socket assembly with integral CT provided there is customer service equipment with the means of disconnect installed adjacent and on the line side of metering; or
- 400A meter socket assembly with an integral CT c/w main disconnect.

5.5.1 Responsibility

a) The **Customer** shall:

- Supply and install a 120/240V, 1 Phase, 5 jaw, outdoor meter socket assembly with an integral CT in a location acceptable to the BC Hydro's Designer and the local electrical inspection authority; or
- Supply and install a 120/240V,1 phase, 5 jaw outdoor rated meter socket assembly with an integral CT come with main min 22kA circuit breaker; and
- Install the CT and primary connections in accordance with section 5.6.

b) The **BC Hydro** will:

- Supply the CT; and
- Supply and install the meter, test block and metering wiring.

5.5.2 Equipment

a) The 400 A meter socket shall be installed outdoors for residential services as permitted on the load side of the service box with the neutral insulated.

- The 400 A meter socket is wall or pole mounted, and the installation shall be in accordance with Distribution Standards ES53 Section S.

Any unused mounting holes shall be closed to prevent moisture or insect ingress.

The manufacturer supplied pole mounting kit ensures that the 400 A meter socket is securely attached to the pole. Attaching "wall mount" 400 A meter sockets directly to a pole with lag bolts or using a site fabricated bracket is prohibited.

b) The 400 A meter socket shall be mounted with the centre of the meter between 1500 mm and 1800 mm above finished grade.

c) The 400 A meter socket bottom panel shall be secured with screws that require a tool for removal.

Access to energized conductors, in the bottom panel, shall not rely only on the presence of the BC Hydro seal and/or padlock.
Contact BC Hydro local design to get information on Distribution Standards Equipment Advisory for more information.

5.6 Instrument Transformers

a) At 300 V phase-to-phase and less, current transformers (CTs) are required. At voltages greater than 300 V phase-to-phase, CTs and voltage transformers (VTs) are required.
b) 600V and 480V 200A 3 phase 3 wire delta services will be metered using two VTs and two bar type CTs.

BC Hydro typically supplies the following CTs for permanent installations.

Location	*Supply System*	*Min Current*	*Max Current*	*Qty*	*Type*	*Section*
Indoor	*120/240 V 1 Phase 3 Wire*	*300 A*	*600 A*	*1*	*3 Wire Bar*	6.11
		800 A	*1200 A*	*2*	*2 Wire Bar*	6.12
	3 Phase 3 Wire	*300 A*	*1200 A*	*2*	*2 Wire Bar*	-
		1000 A	*6000 A*	*2*	*Window*	6.14
	3 Phase 4 Wire	*300 A*	*1200 A*	*3*	*2 Wire Bar*	6.13
		1000 A	*6000 A*	*3*	*Window*	6.14
Outdoor	*120/240 V 1 Phase 3 Wire*	*300 A*	*800 A*	*2*	*Donut*	6.15 6.16
	3 Phase 3 Wire	*300 A*	*800 A*	*2*	*Donut*	6.15 6.16
	3 Phase 4 Wire	*300 A*	*800 A*	*3*	*Donut*	6.15 6.16

Donut or Window CTs may be available for Temporary Construction indoor installations (see drawings 6.14 and 6.15)
Normally these Temporary Construction CTs are removed when permanent revenue meters are installed.
Window CTs are only allowed in switchgear instrument transformer compartment, except for fire pump service.

However, the Customer should check with BC Hydro to determine exactly which CTs will be supplied for their installation.

When BC Hydro supplies bar-type CTs for instrument transformer enclosures, they typically also supply the primary conductor connectors. However, for multi-service line and load conductors where BC Hydro supplied mechanical connectors are not sufficient, a splitter box is required per BC Electrical Code.

A 3 Wire Bar CT has 4 primary connections. (See section 6.11)

c) The CT H1 primary terminal polarity marks shall be on the line side (towards BC Hydro) in accordance with the schematic drawings in section 6.11.

d) The CT shall be mounted against the rear panel of the instrument transformer enclosure/compartment using the provided CT base holes.

"Hanging" window style CTs from the conductor or using the primary terminals to support bar style CTs, is not permitted. Mounting CTs to the side, top or bottom walls of the instrument transformer enclosure/compartment is not permitted.

e) The conductors shall be shaped and supported in such a way to minimize the mechanical stress applied to the CTs.

f) The VT and CT primary winding terminals and secondary winding terminals shall remain accessible, and the nameplates shall remain visible. The installation shall facilitate the easy replacement of the VTs and CTs.

While nameplates must remain visible, terminal accessibility and polarity orientation may position the nameplate upside-down or sideways. This is acceptable.

5.6.1 Metered fire pump service Loads >67h.p. (50kW)

Services for fire pumps equal or greater to 67 h.p. (50 kW) shall be metered with instrument transformer metering using 'donut' or window style CTs only. (See sections 6.14 and 6.15)

(Fire pumps rated 66 h.p. (49 kW) or less will be unmetered and billed on a flat rated monthly consumption charge.)

5.7 Transformer-Type Meter Socket

5.7.1 Indoor/Outdoor Installations

a) The customer supplied Transformer-Type Meter Socket and the sealing ring shall be certified in accordance with CSA Standard C22.2 No. 115, *Meter*

Mounting Devices and they shall be approved by BC Hydro.

b) The Transformer-Type Meter Socket shall be installed, in a readily accessible location approved by BC Hydro, in accordance with sections 3 and 5.1.

The sealing ring shall be a screw type in accordance with section 6.2.

The Transformer-Type Meter Socket shall be as close as practicable to the instrument transformer enclosure/compartment and in the same room as the instrument transformer enclosure/compartment, see section 5.8 for the maximum separation distance. For detached single family residential 1 phase services, section 5.1.1.1, requires that both the instrument transformer enclosure/compartment and the Transformer-Type Meter Socket be located outdoors.

c) One Transformer-Type Meter Socket is required for each 3-phase instrument transformer point-of-metering.

d) The Transformer-Type Meter Socket tilt shall not exceed 3° from vertical.

e) All Transformer-Type Meter Socket in indoor location shall be mounted, using all four predrilled holes meeting CEC, Part 1, Rule 6-408, on a 19 mm (¾") plywood backing or metal support channels.

All Transformer-Type Meter Sockets in outdoor location shall be wall mounted on metal support channels.

The plywood or metal support channels shall be securely fastened to the wall. Shooting, or otherwise mounting the meter socket, directly to the wall is not permitted. Plywood backing for outdoor application will not be accepted.

f) The center of the meter shall be mounted between 1,500 mm to 1,800 mm above the finished grade.

A mounting height of 1,650 mm above finished grade is preferred.

g) Grounding lug(s) to be provided inside the Transformer-Type meter socket.

h) For pole mounted applications:

- The Transformer-Type Meter Socket shall be secured to the pole using the manufacturer's purpose-built pole mounting bracket (e.g., Microlectric PMB200) with lag screws; and
- The Transformer-Type Meter Socket shall be located on the side of the pole

that is not subject to vehicle damage. If this is not practicable, protection posts shall be installed 600 mm in front of the Transformer-Type Meter Socket similar to those required under section 6.3.

i) The conduit shall enter the Transformer-Type Meter Socket from the bottom or side where knockouts provided.
j) The conduit shall not be entered from the back of the Transformer-Type Meter Socket.

5.7.2 Grounding

a) In accordance with section 36 of the Canadian Electrical Code, an external ground conductor shall be provided for the Transformer-Type Meter Socket if:

- The associated instrument transformer compartment is within a unit substation with a high voltage (greater than 750 V) section; or
- The Transformer-Type Meter Socket is within the same room as high voltage equipment.

b) Where required, the external Transformer-Type Meter Socket ground conductor shall not be less than No. 2/0 AWG copper and shall be connected to the station ground grid electrode.

A No. 2/0 AWG copper conductor is required since, due to skin effect, its large surface area provides a low impedance path for high frequency electrical noise.

5.7.3 Optional Meter Compartment

The optional meter compartment shall use the Transformer-Type Meter Socket in accordance with the following:

a) Be separate from the instrument transformer enclosure.
b) The meter socket is permitted to be installed within the exterior side of switchgear.
c) The recessed depth is less than the depth of the Transformer-Type Meter Socket, i.e., the cover shall project beyond the finished exterior wall surface; and
d) Recessing does not interfere with the installation, reading or removal of the meter; and
e) Recessing does not interfere with the installation or removal of the Transformer-Type Meter Socket cover.
f) The Transformer-Type Meter Socket may be installed on the exterior of the switchgear provided there are adequate measures taken to protect against damages.

g) The Customer shall provide a continuous Metal or Rigid PVC conduit, without access fittings, between the optional meter compartment and the instrument transformer compartment as per section 5.8.
h) The conduit shall enter from the bottom of the meter socket.

Seek prior approval from BC Hydro designer prior to considering this option.

5.8 Conduit

a) The Customer shall supply and install a conduit between the Transformer-Type meter socket and the instrument transformer enclosure/compartment.

The Transformer-Type meter socket shall be as close as practicable to the instrument transformer enclosure/compartment and in the same room as the instrument transformer enclosure/compartment.

Where the instrument transformer enclosure is located outdoor, conduit shall exit from the bottom of the instrument transformer enclosure to the Transformer- Type meter socket.

b) The conduit shall be either rigid metal, EMT or rigid PVC.

ENT (electrical non-metallic tubing) is not permitted.

c) The conduit shall not have more than the equivalent of three 90° bends.

d) For 1 phase installations, the conduit length shall not exceed 3 m (10') and the minimum trade size shall be 21 (3/4").

e) For 3 phase installations, the conduit length shall not exceed 10 m (33') and the minimum trade size shall be 35 (1 ¼"). Except that, where special written approval is first obtained from BC Hydro, a 41 (1 ½") conduit with a length of between 10 m (33') and 25 m (82') may be installed.

f) The conduit shall be continuous and without access fittings. Except that, an "(LB, LL, and LR) style" fitting may be installed immediately adjacent to the meter socket providing the fitting's cover:

- Remains clearly visible; and
- Has provision for the installation of a BC Hydro wire seal.

Or as an alternative,

- Elbow 90 with minimum trade size 41 (1 ½”) shall be installed immediately adjacent to the meter socket.

g) The conduit shall remain visible for its entire length except where it is embedded in a concrete floor or ceiling within the same room.

Conduits shall not be installed through walls or underground.

h) For switchgear applications, where it is necessary to route the conduit through other switchgear compartments, Customer shall provide a continuous metal or rigid PVC conduit, without access fittings, within the switchgear. Given this, if it is necessary to route through the service entry (wireway) compartment, the conduit shall enter and exit from either side all the way towards the back of the compartment in order not to obstruct any cable pulling and/or termination.

i) The Customer shall leave a pull string in the conduit.

5.9 Metering Pulses

BC Hydro can provide pulses to the Customer for load management systems. The pulse output signals will be brought to a terminal block installed in a junction box. The customer will terminate their wires from there to the terminal block of their monitoring equipment. Both, KWh (real energy) and KVARh (reactive) energy pulses are provided.

The Customer shall pay all associated costs for the provision of metering signals and maintenance of the related equipment.

6. Reference Drawings

6.1 Underground Secondary Single-Phase Services and Meter Sockets

For dimensional and construction requirements refer to ES54 Section S1 as follows:

S1-01 - 200 A Single and 400 A Multiple Self-Contained Meter Installation

S1-02 - 320 A Self-Contained Meter Installation

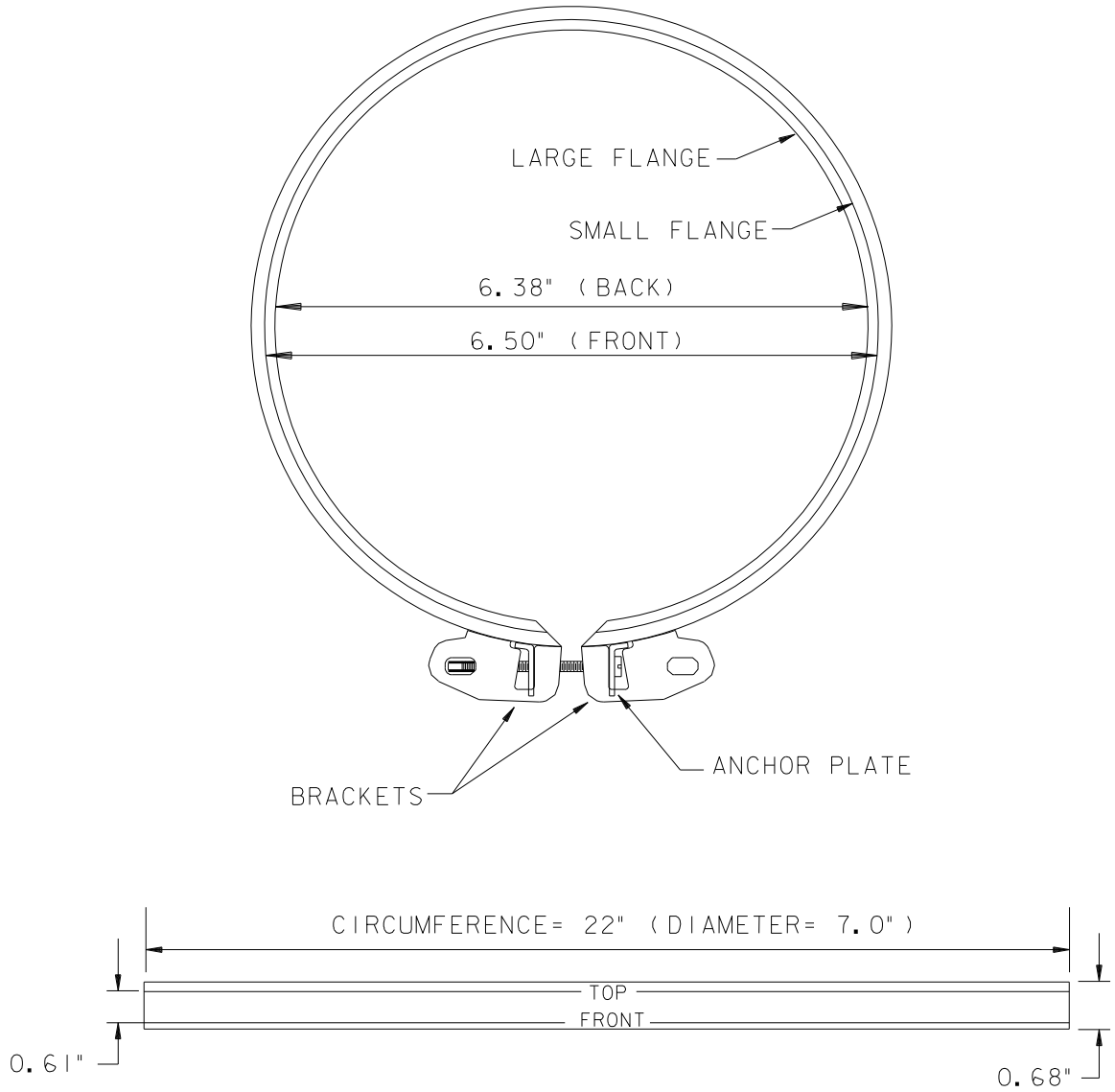
S1-03 - 400 A and 600 A CT-Based Meter Installation

S1-04 - 200 A to 600 A Pad-Mounted Kiosk and Pedestal, Self-Contained and CT Based Meter Installation

Notes:

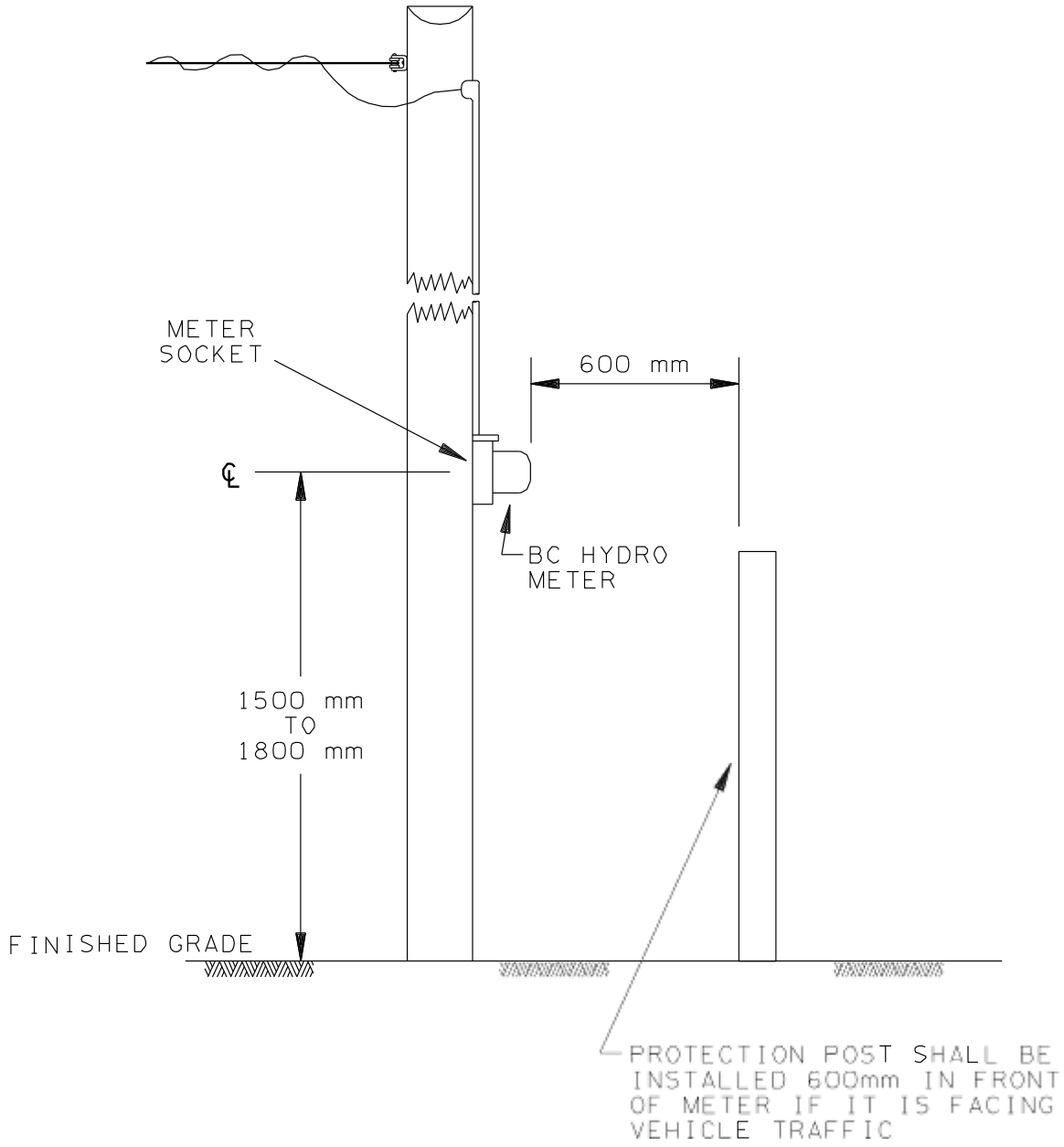
1. See section 3.7.

6.2 Sealing Ring



Notes:
See section 4.1.

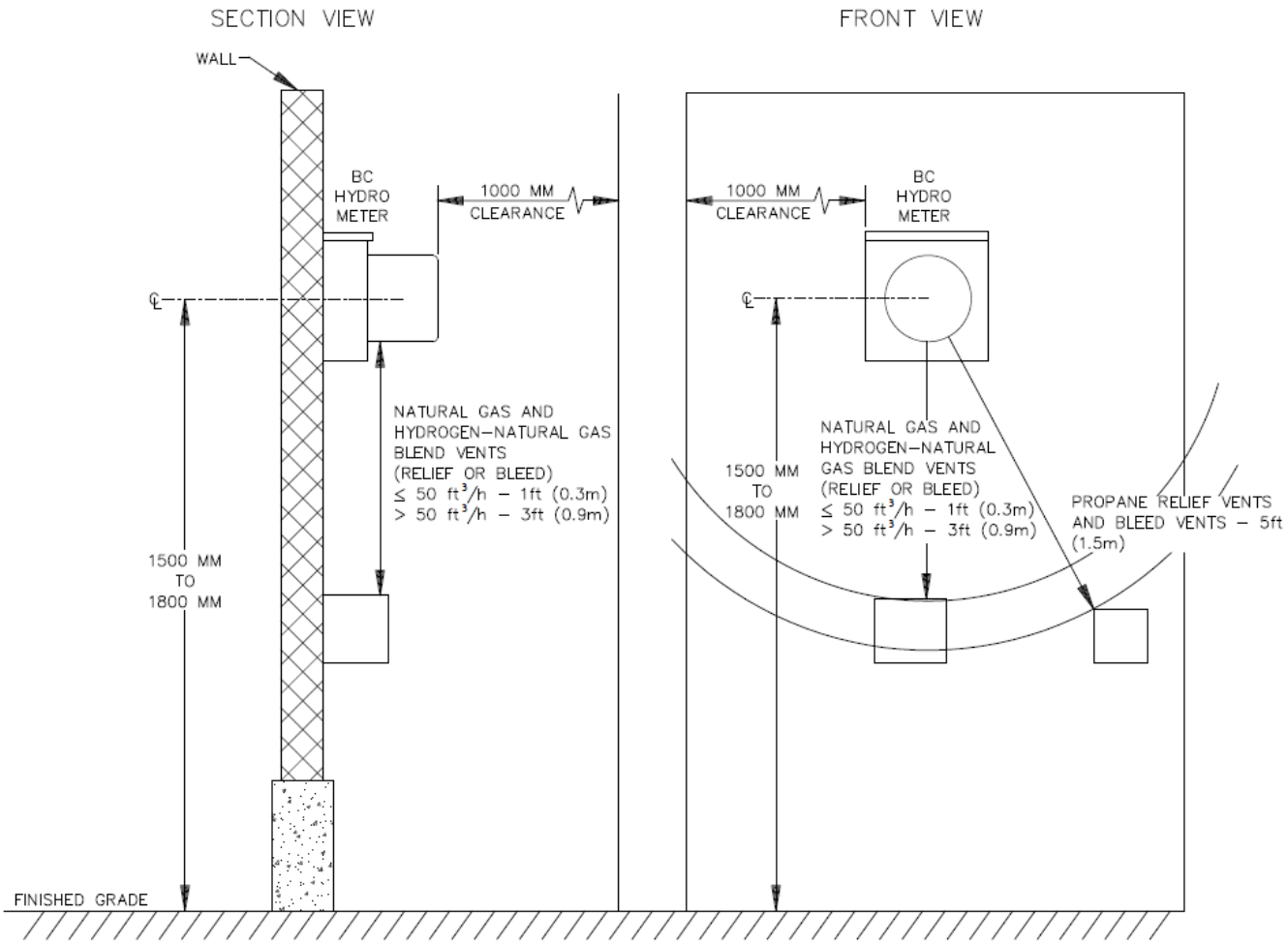
6.3 Individual Pole Mounted Meter Socket



Notes:

1. See section 4.2.6.
2. Mast shall remain visible throughout its entire length.

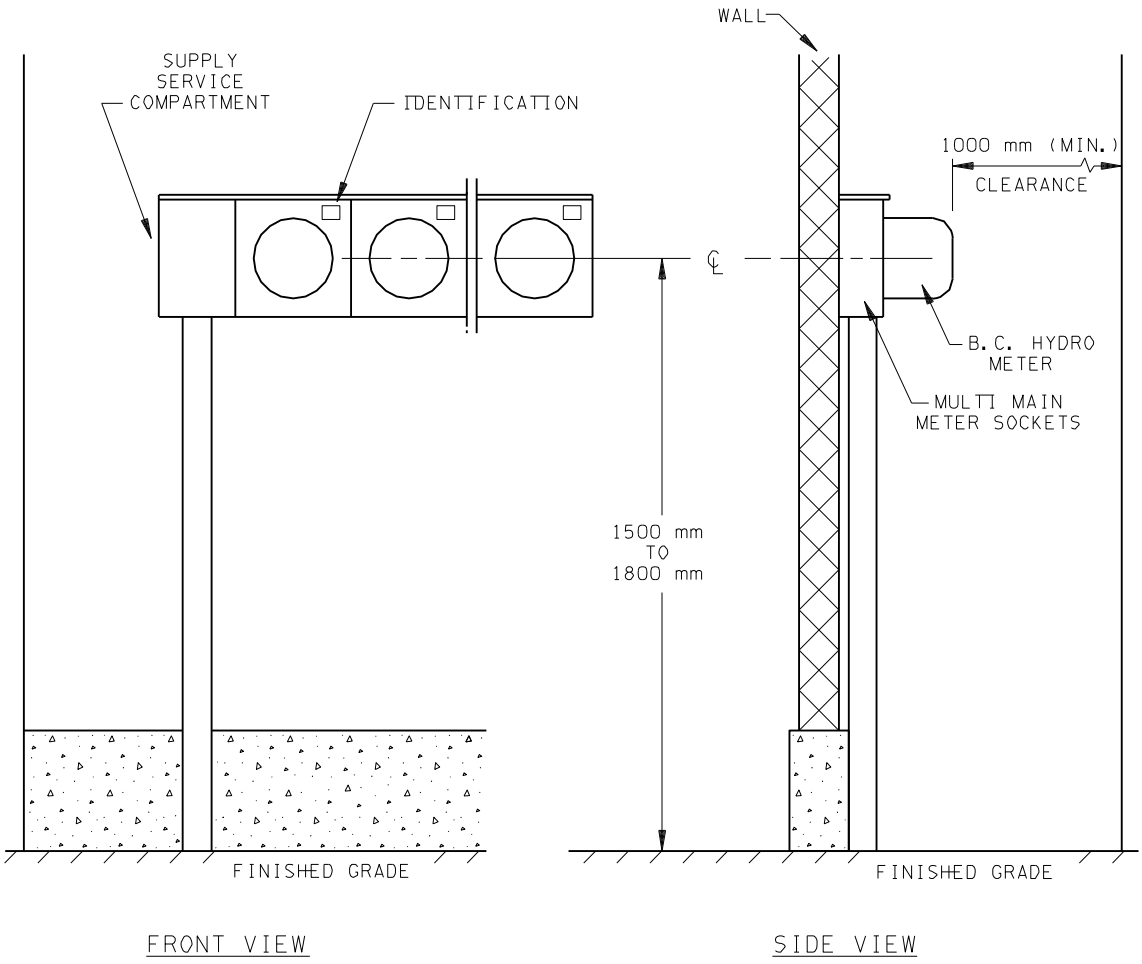
6.4 Individual Wall Mounted Meter Socket Near a Gas or Propane Meter



Notes:

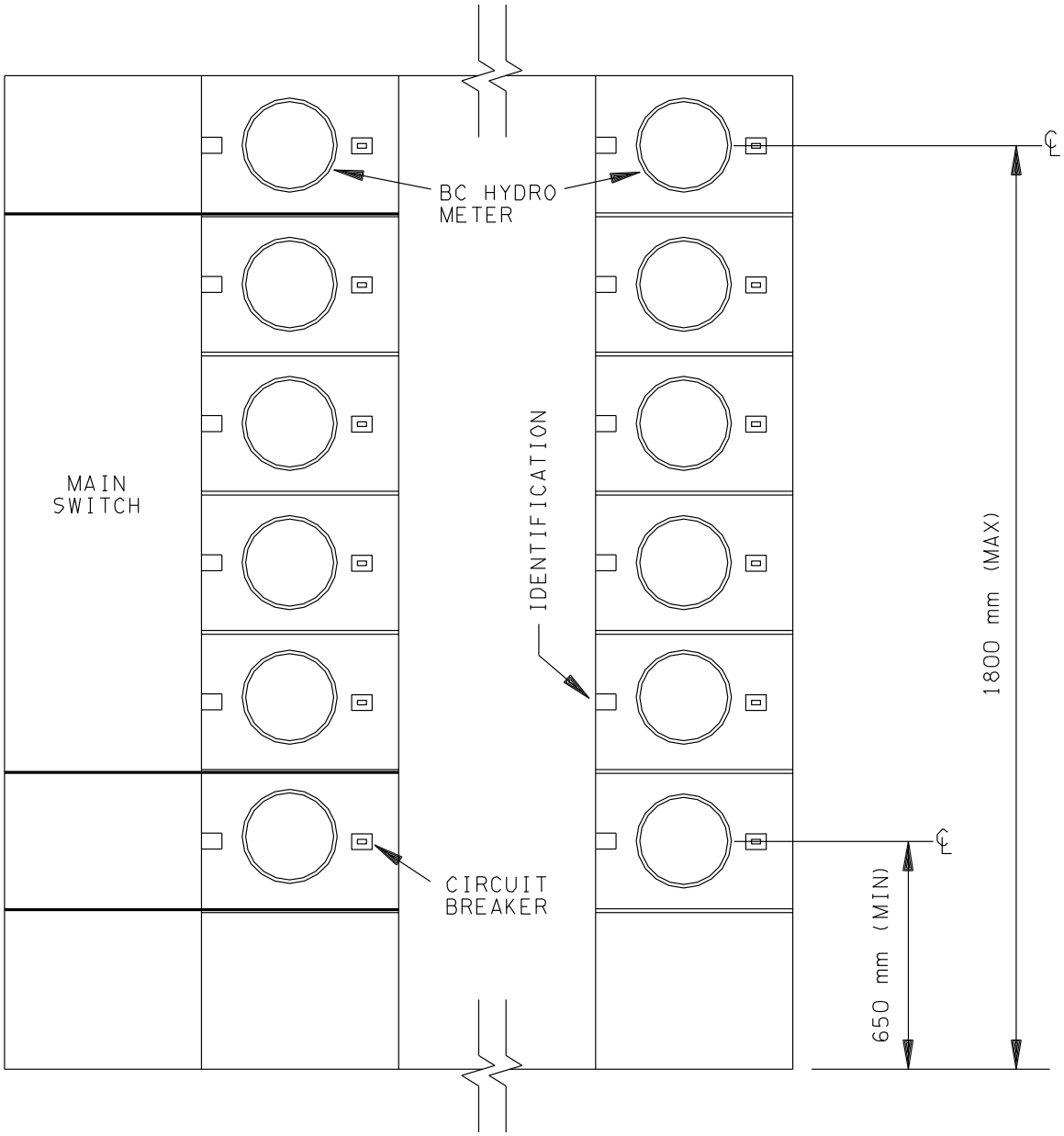
1. See section 4.2.7.
2. Not to scale drawings.

6.5 Multiple Main Meter Socket



Notes:
1. See section 4.3.
2. Underground service illustrated.

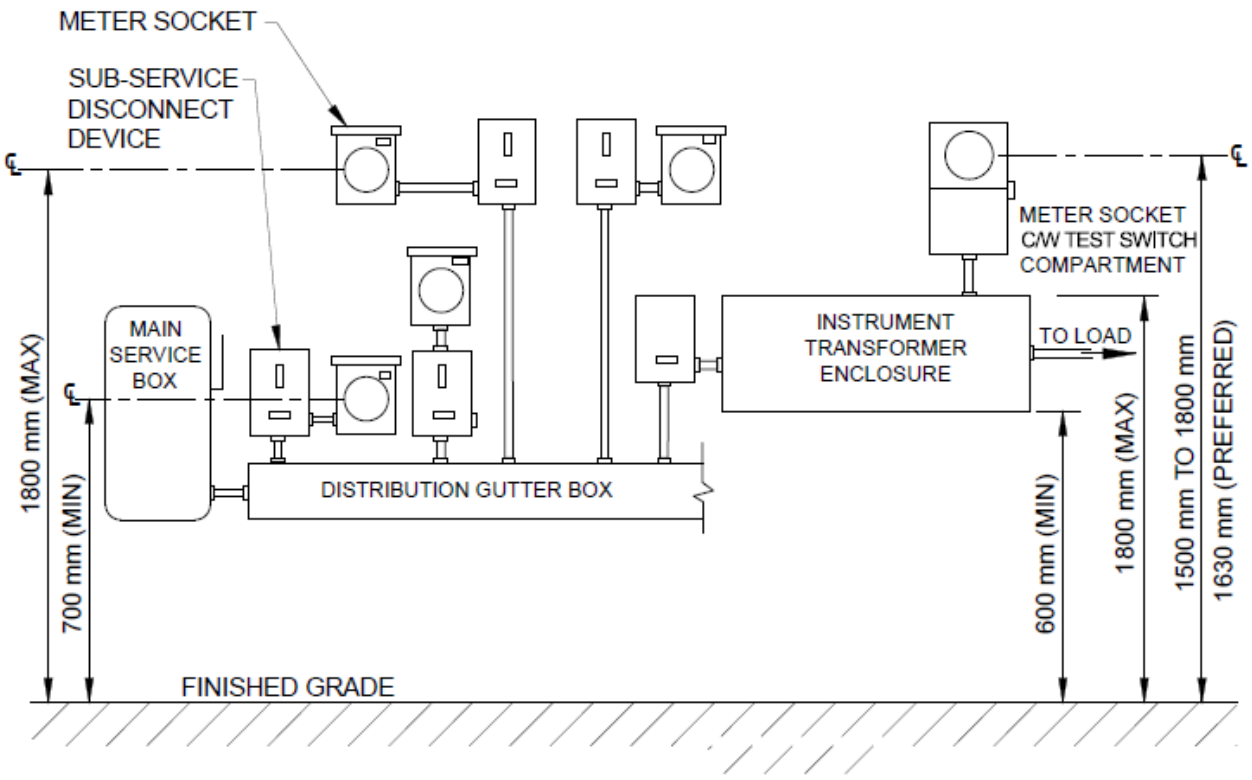
6.6 Meter Centre



Notes:

1. See section 4.4.

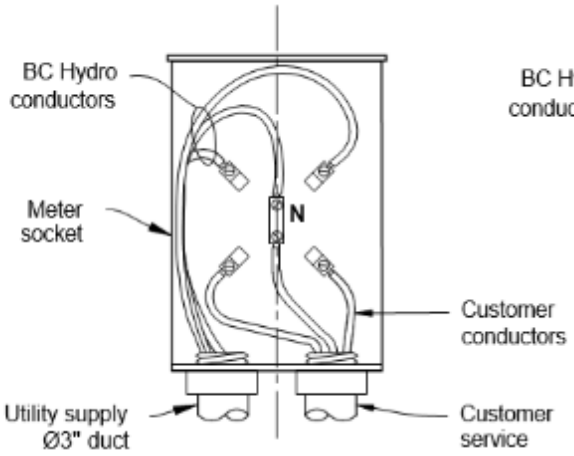
6.7 Grouped Sub Service Metering



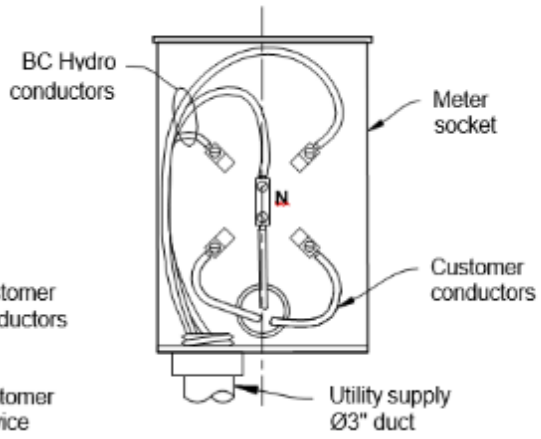
Notes:

1. See section 4.4.
2. Cold style metering with the meter socket on the load side of the sub service disconnect device and with the neutral isolated at the meter socket is required.
3. Each meter socket shall be adjacent to, and as close as practicable to, the controlling sub service disconnect device and in the same room as the controlling sub service disconnect device.
4. Contact BC Hydro and refer to the ES53 Series Underground Electrical standards and the ES54 Underground Civil standards for underground main service conduit, wireway and pull box requirements.
5. Multiple Self-Contained Metering and multiple Instrument Transformer Metering are allowed.

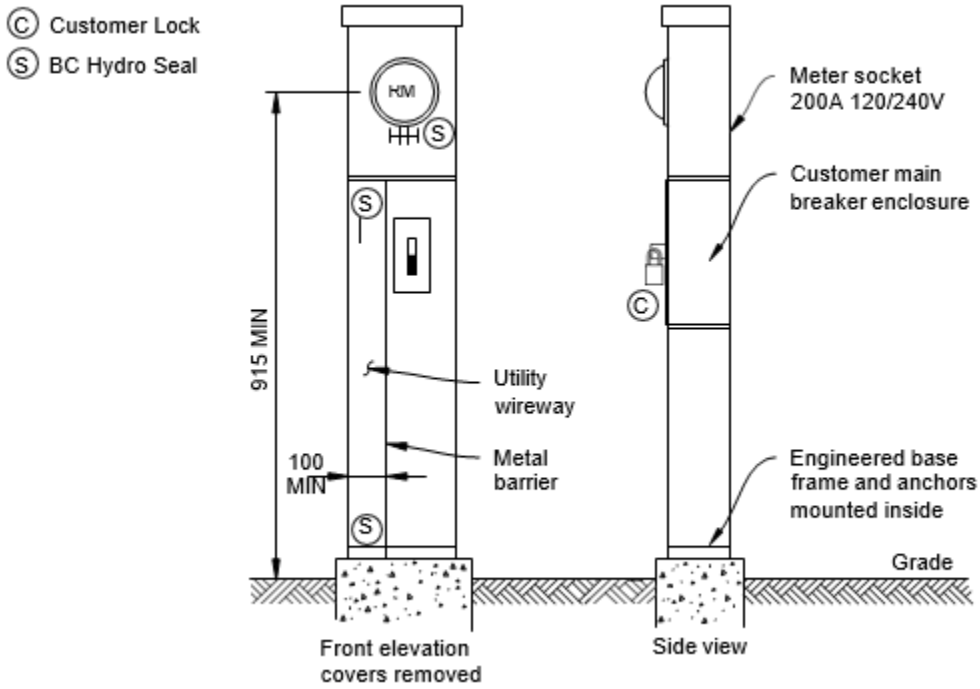
6.8 Service Pedestal



200 A meter socket hot style customer bottom exit



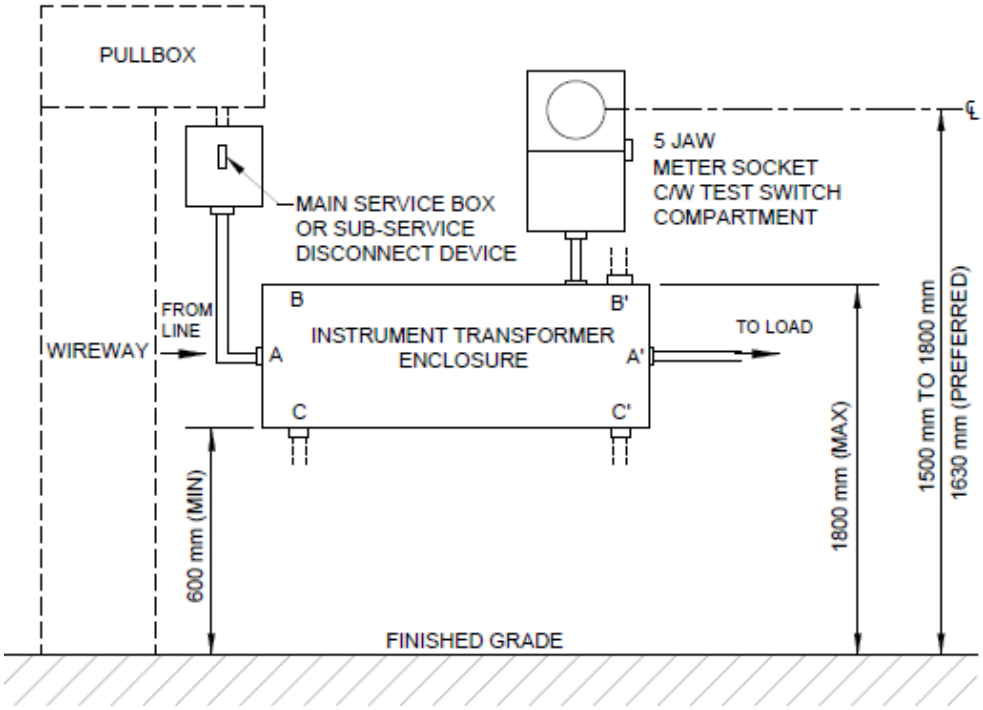
200 A meter socket hot style customer back exit



200 A pedestal design details

Notes:
1. See section 4.5.

6.9 120/240 V, 1 Phase, Instrument Transformer Enclosure



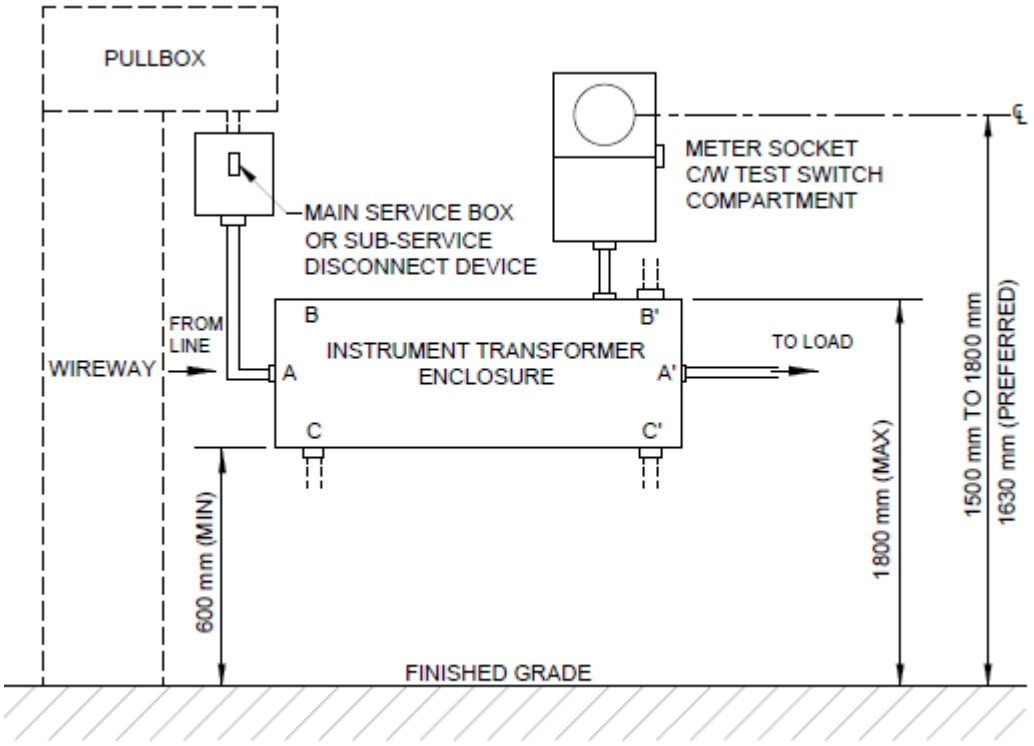
Notes:

1. See Section 3.2.1
2. The following minimum 120/240 V, 1 phase instrument transformer enclosure dimensions shall be provided.

Main Switch Size	Enclosure Size (W x H x D)
400 A or Less	760 mm x 420 mm x 205 mm (30” x 16” x 8”)
Over 400 A	1065 mm x 460 mm x 405 mm (42” x 18” x 16”)

3. The customer shall supply and install a 5 jaw meter socket.
4. Ideally, the transformer enclosure should feature two horizontally opening doors and be equipped with BC Hydro seal provisions.
5. Illustrated equipment locations may vary provided the specified dimensions are achieved.
6. The instrument transformer enclosure shall be in the same room, adjacent to, and as close as practicable to, the main service box or sub service disconnect device.
7. The meter socket shall be in the same room, adjacent to, and as close as practicable to the instrument transformer enclosure.
8. Contact BC Hydro and refer to the ES53 Series Underground Electrical standards and the ES54 Underground Civil standards for underground main service conduit, wireway and pull box requirements.
9. The instrument transformer enclosure shall be installed in horizontal position with line entering and load exiting from A to A’ (preferred option), B to B’, C to C’, B to C’, C to B’, A to B’, A to C’, B to A’, or C to A’ as depicted in the diagram.

6.10 3 Phase Instrument Transformer Enclosure



Notes:

1. See Section 3.2.1
2. The following minimum 3 phase instrument transformer enclosure dimensions shall be provided.

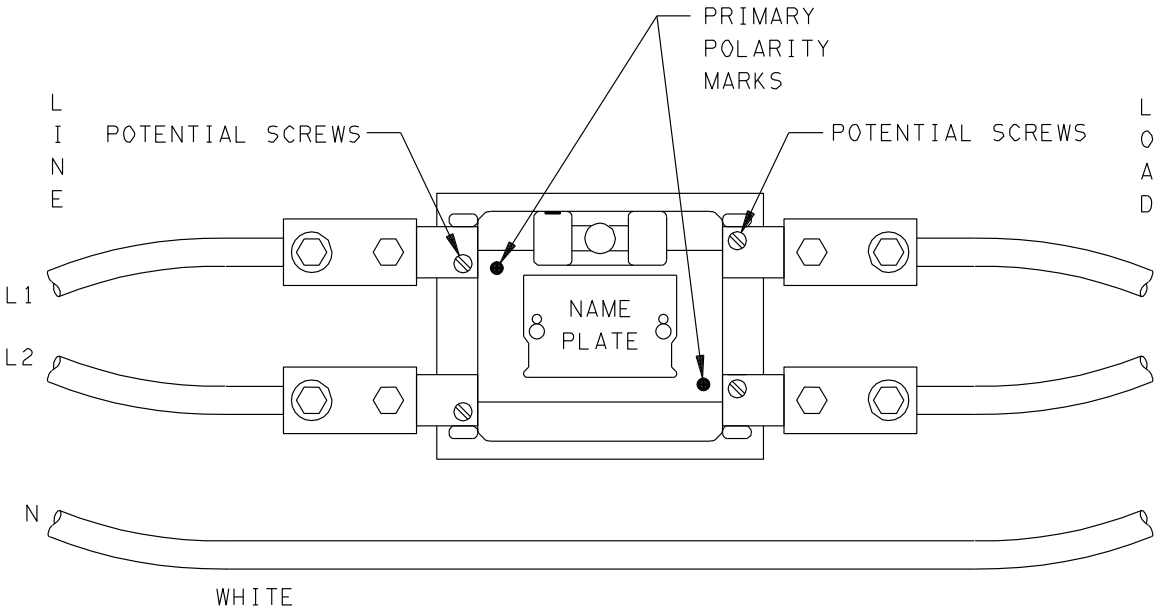
Main Switch Size	Voltage	Enclosure Size (W x H x D)
400 A to 600 A	All	1065 mm x 460 mm x 405 mm (42” x 18” x 16”)
601 A to 1,000 A	All	1065 mm x 915 mm x 610 mm (42” x 36” x 24”)
Over 1,000 A	All	Use switchgear instrument transformer compartment or an approved engineered assembly complete with consultant’s drawings

3. Illustrated equipment locations may vary provided the specified dimensions are achieved.
4. Ideally, the transformer enclosure should feature two horizontally opening doors and be equipped with BC Hydro seal provisions.
5. The Instrument transformer enclosure shall be in the same room, adjacent to, and as close as practicable to, the main service box or sub service disconnect

device.

6. The customer supplied meter socket shall be in the same room, adjacent to, and as close as practicable to the instrument transformer enclosure.
7. Contact BC Hydro and refer to the ES53 Series Underground Electrical standards and the ES54 Underground Civil standards for underground main service conduit, wireway and pull box requirements.
8. The instrument transformer enclosure shall be installed in horizontal position with line entering and load exiting from A to A' (preferred option), B to B', C to C', B to C', C to B', A to B', A to C', B to A', or C to A' as depicted in the diagram.

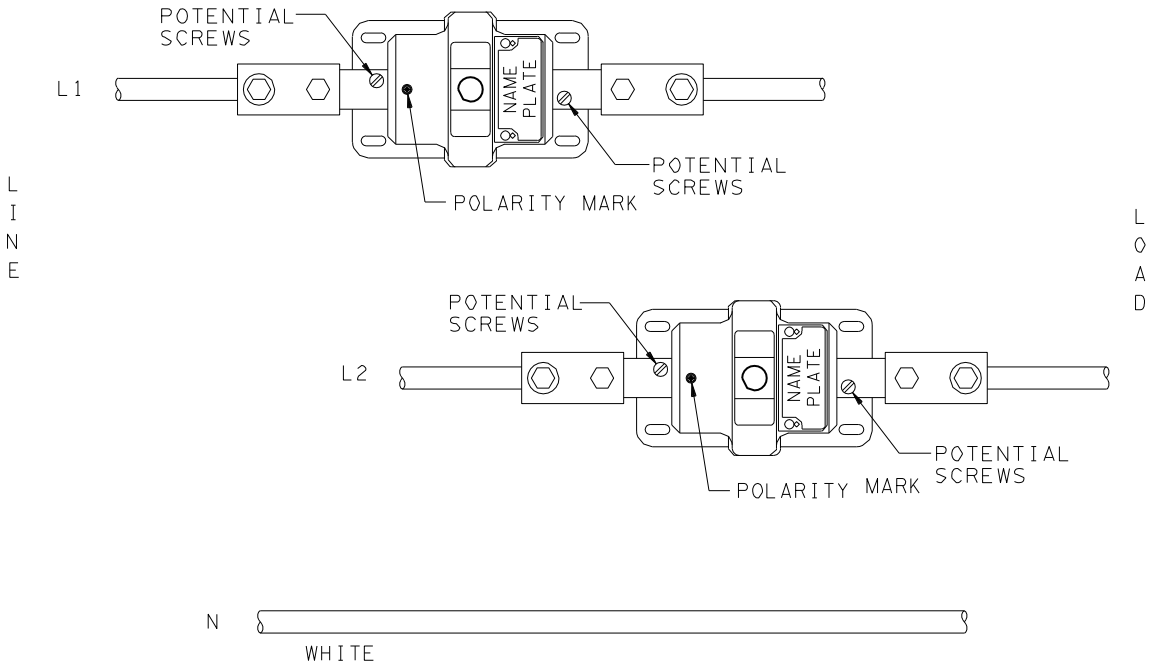
6.11 120/240 V, 1 Phase, Metering with a Single 3 Wire Bar Type CT



Notes:

1. Contractors are required to use only BC Hydro supplied standard mechanical connectors.
2. See section 5.3.2.1.
3. The actual polarity markings may be different. Consult with the Local Design or Metering Technician should there be any question.
4. The mechanical connectors (lugs) shall be installed in-line with the CT bus bar per above diagram.

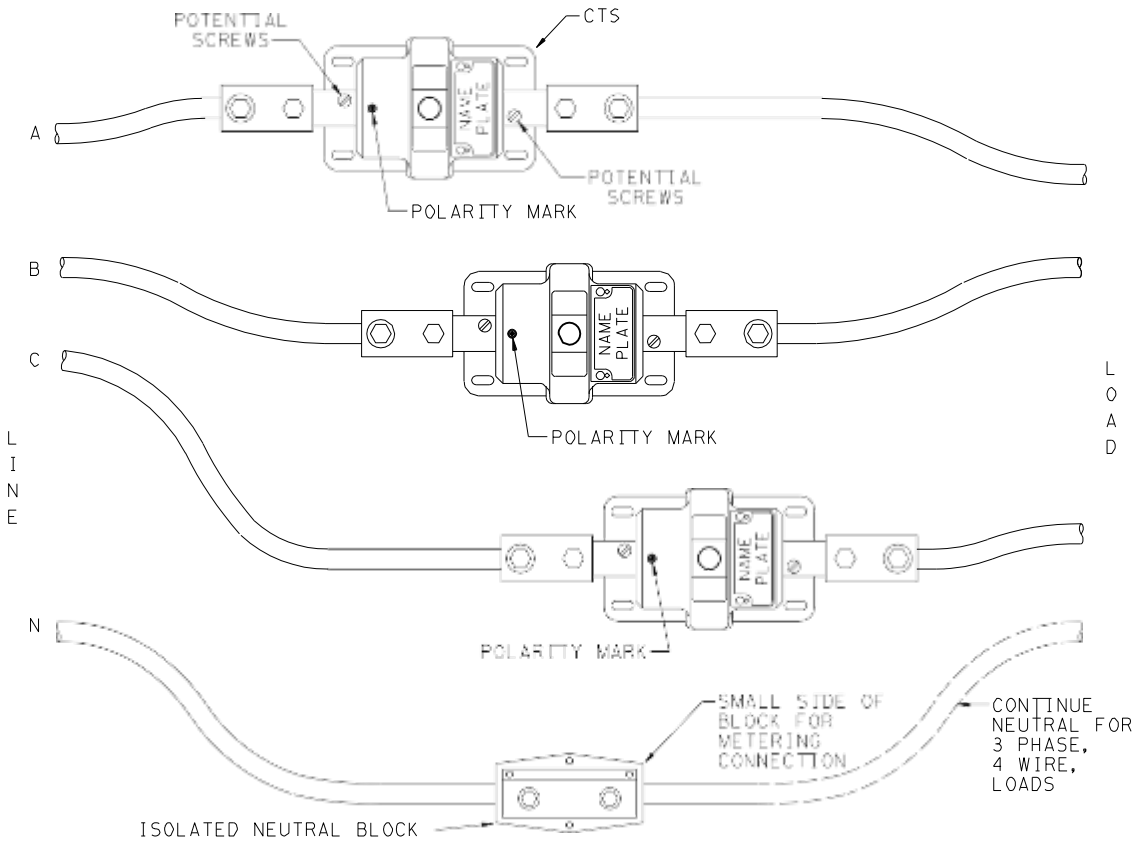
6.12 120/240 V, 1 Phase, Metering with Two 2 Wire Bar Type CTs

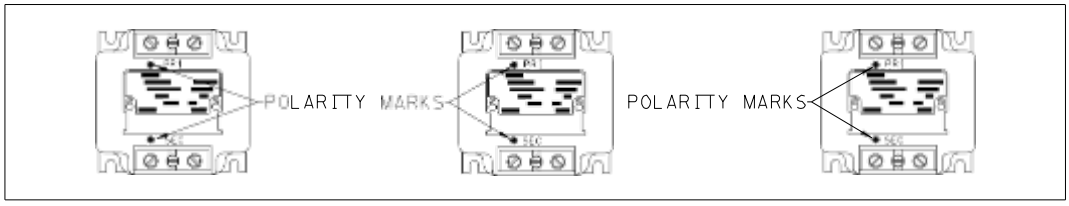


Notes:

1. Contractors are required to use only BC Hydro supplied standard mechanical connectors.
2. See section 5.3.2.1.
3. Polarity marks shall be towards the line side.
4. The mechanical connectors (lugs) shall be installed in-line with the CT bus bar per above diagram.

6.13 3 Phase, 4 Wire, Metering with Bar Type CTs



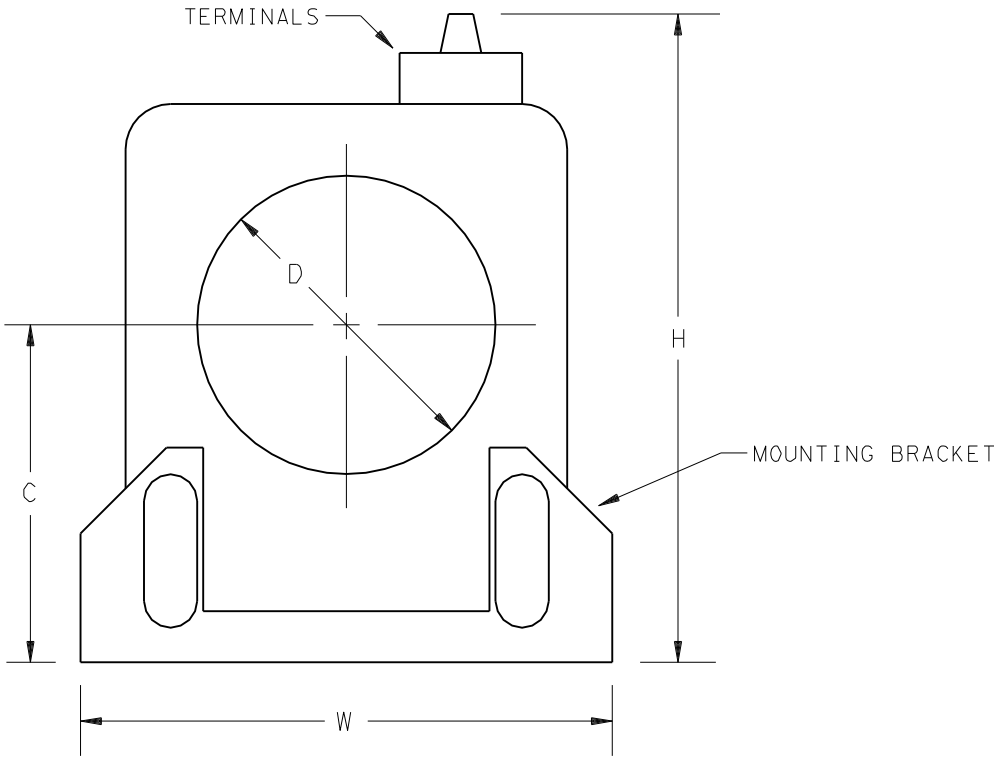


VTS NOT REQUIRED FOR 120/208Y V, 3 PHASE, 4 WIRE SUPPLY.

Notes:

1. Contractors are required to use only BC Hydro supplied standard mechanical connectors.
2. See section 5.3.2.
3. Polarity marks shall be towards the line side.
4. It is a requirement that CTs are staggered for most efficient use of space, thereby reducing increased bending radius and ease of wiring of secondary terminals.
5. The mechanical connectors (lugs) shall be installed in-line with the CT bus bar per above diagram.

6.14 Typical Indoor Window CT



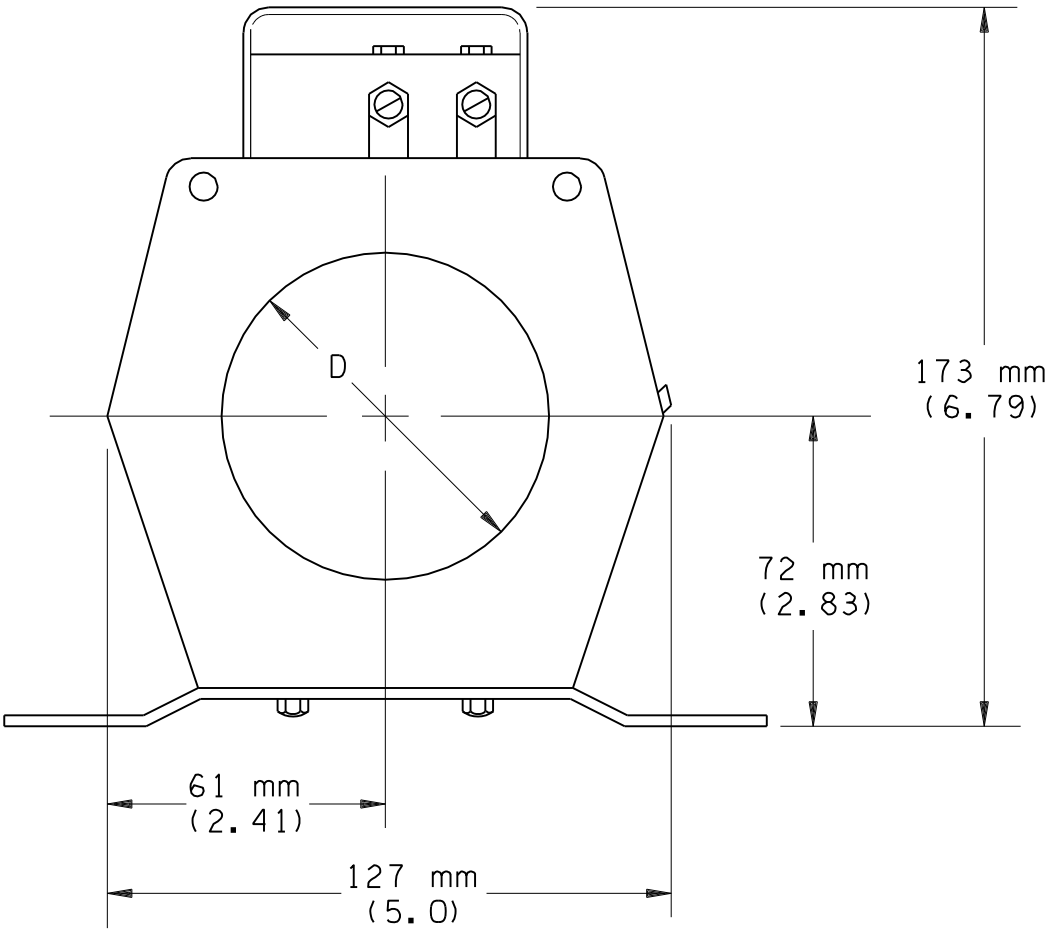
DIMENSION TABLE

Rated Current	"D" Minimum Window Diameter	"W" Maximum Body Width	"H" Maximum Overall Height	"C" Window Centre Height
1,500-5 A 2,000-5 A	146 mm (5.75")	229 mm (9.0")	292 mm (11.5")	Adjustable from 114 mm to 140 mm (4.5" to 5.5")
3,000-5 A 4,000-5 A	146 mm (5.75")	229 mm (9.0")	330 mm (13.0")	Adjustable from 146 mm to 178 mm (5.75" to 7.0")
5,000-5 A 6,000-5 A	206 mm (8.125")	292 mm (11.5")	330 mm (13.0")	145 mm ±3 mm (5.69" ±0.125")

Notes:

1. See section 5.6.

6.15 Typical Indoor/Outdoor Donut CT



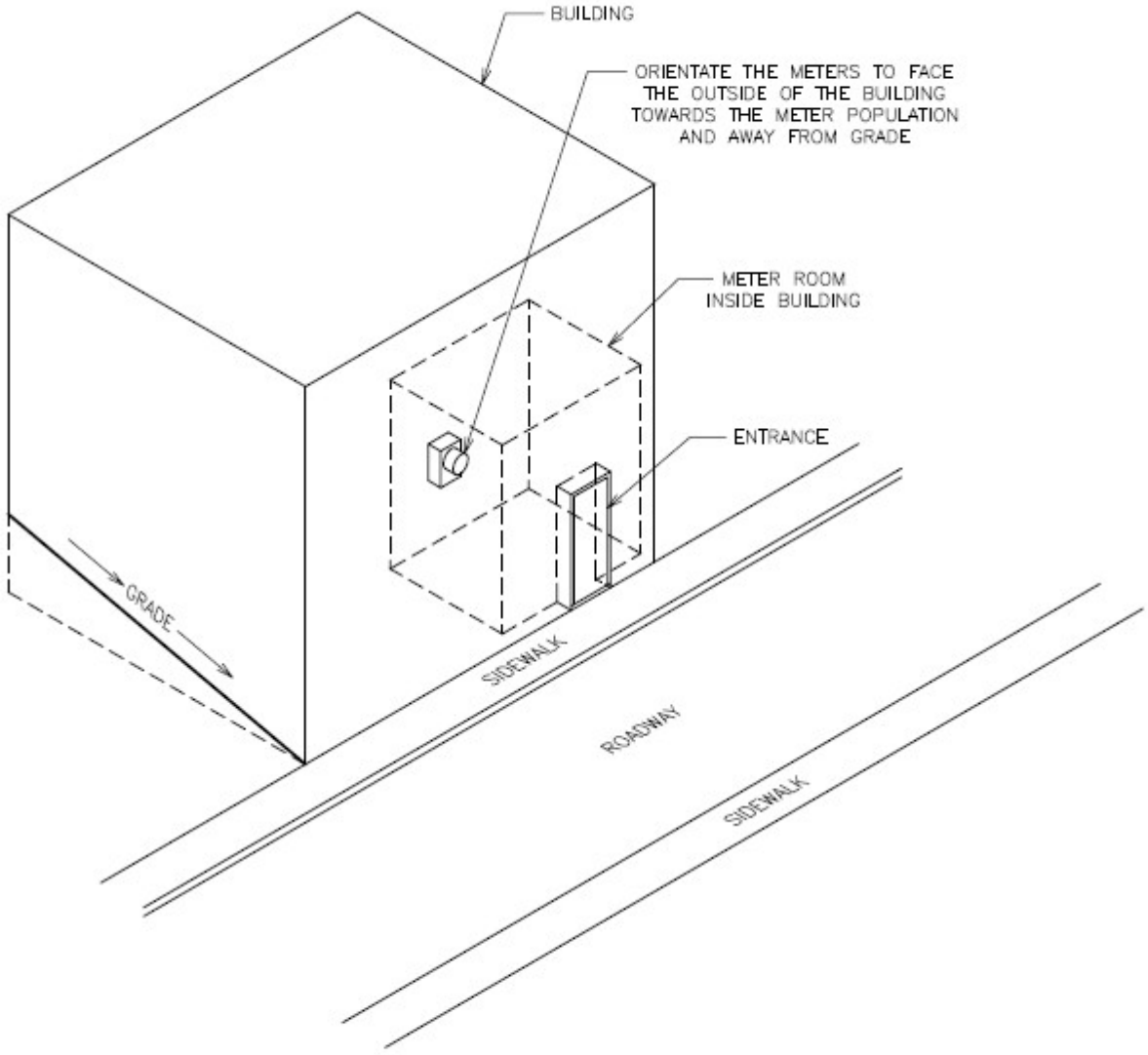
DIMENSION TABLE

Rated Current	"D" Minimum Window Diameter
200 A 300 A	63 mm (2.5")
400 A 600 A 800 A	79 mm (3.12")

Notes:

1. See section 5.6.

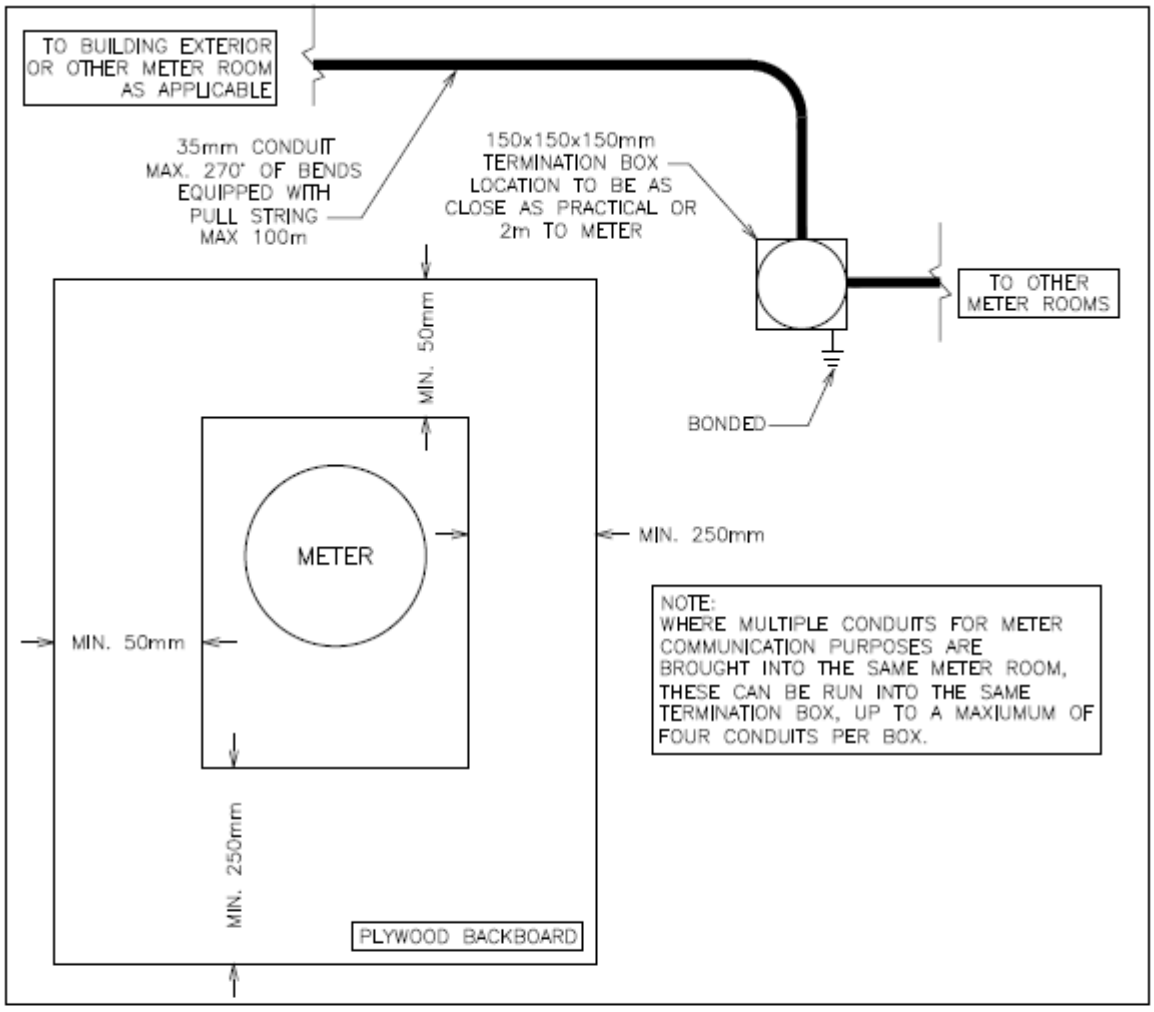
6.16 General Arrangement of Meter Inside Electrical/Meter Room

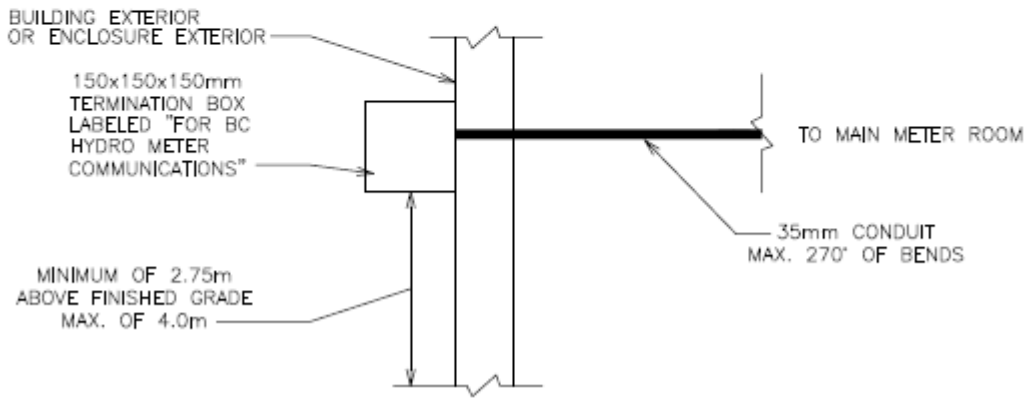


Notes:

1. Grouped sub service meters shall be installed inside an electrical/meter room. See section 3.2.
2. At least one-meter socket in the electrical room shall be mounted in such location as shown above, facing an exterior wall preferably without obstruction.

6.17 Meter Connection to RF Mesh Network

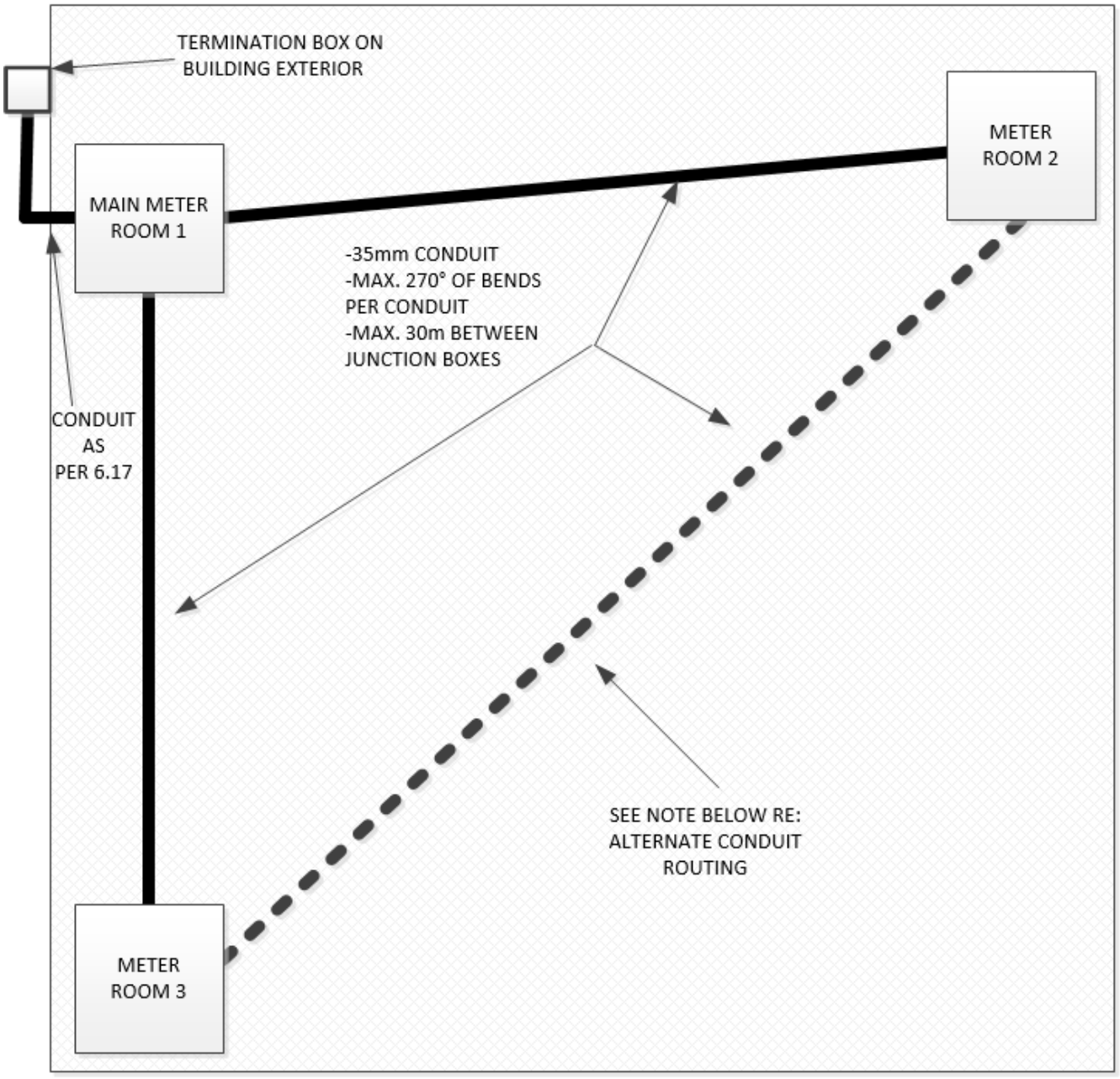




Notes:

1. See section 3.2. The above is only required for one meter inside elec. room
2. All material/connections from Termination box to meter is BCH responsibility.

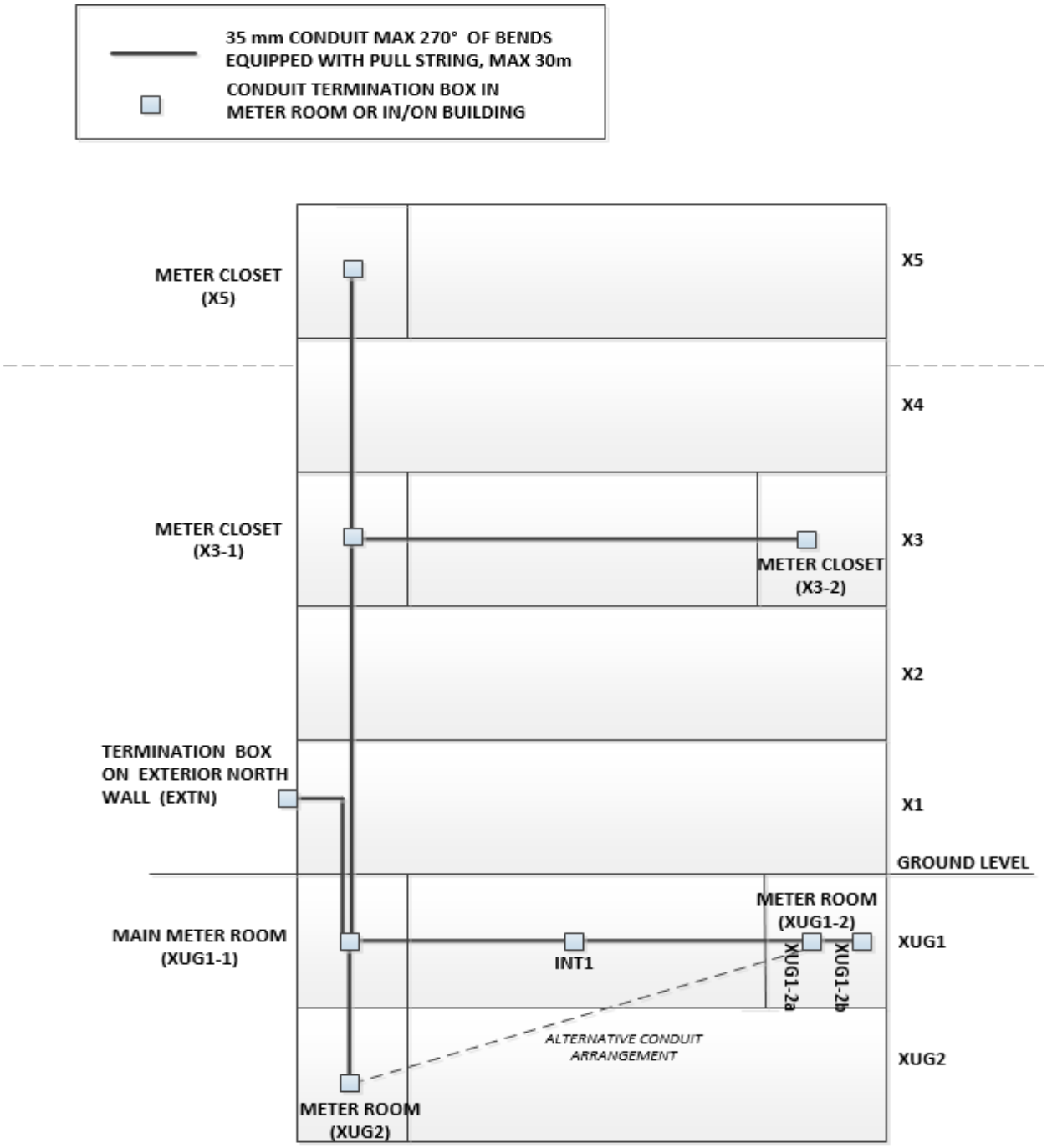
6.18 Multiple Meter Rooms Conduit Arrangement



Notes:

1. Alternate arrangement is to run conduit from Main Meter Room 1 to Meter Room 2, and from Meter Room 2 to Meter Room 3 in a daisy chain configuration, instead of Main Meter Room 1 to Meter Room 3.
2. See section 3.2.
3. Conduit run between meter rooms exceeding 30m requires installation of additional pull box similar to above termination box dimension and set up.

6.19 Multiple Meter Rooms on Multiple Levels Conduit Arrangement

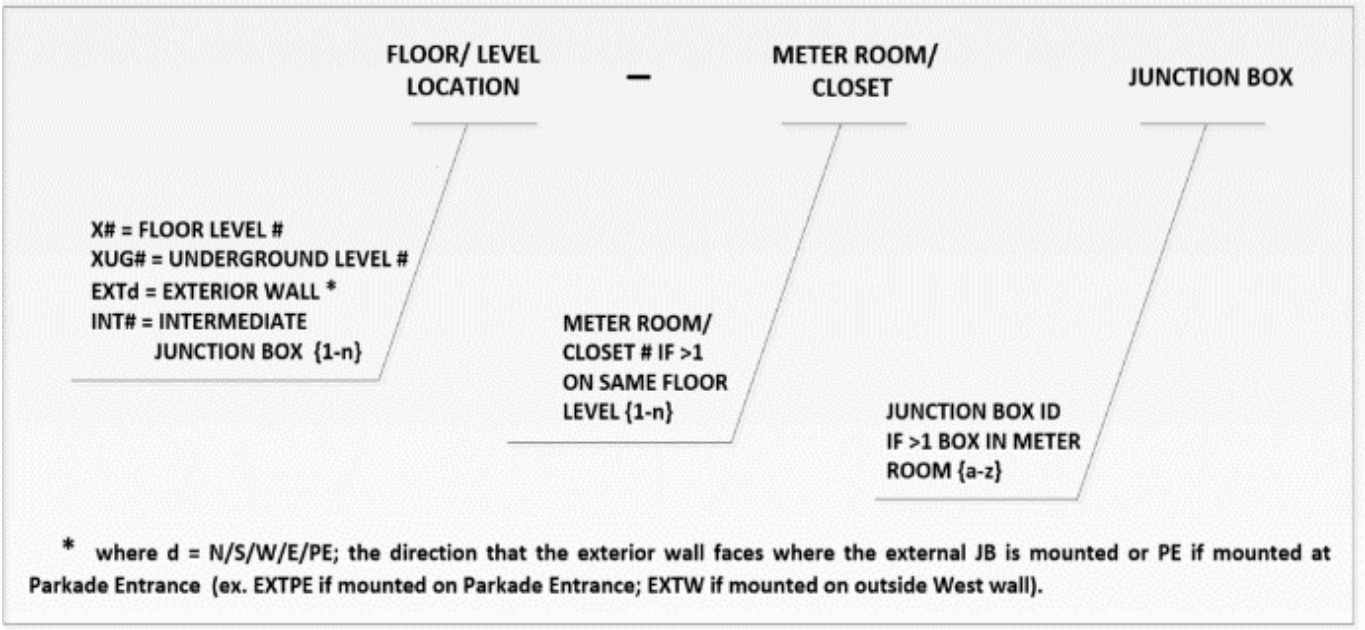


Notes:

1. Naming conventions are explained in section 6.20.
2. Alternate arrangement is to run conduit from Main Meter Room 1XUG1-1 to Meter Room 2XUG1-2, and from Meter Room 2XUG1-2 to Meter Room 3XUG2 in a daisy chain configuration, instead of XUG1-1 Main Meter Room 1 to XUG2 Meter Room 3.

6.20 Naming Convention and Sample Conduit Schedule

Required Naming Convention for Developer Drawings, Conduit Schedules and Labels



This naming convention is reflected in the FROM/TO Locations in the Sample Conduit Schedule below, and in the meter room and junction box locations from section 6.19. The sample conduit schedule below is based on the building diagram in section 6.19 and shows the *minimum information* to be provided to BC Hydro. The naming of the conduits (FROM/TO columns) directly correspond to section 6.19. All other content is illustrative only.

- Notes are required for locating Intermediate junction boxes.
- Additional notes can be added for further clarification on any conduit.

Sample Conduit Schedule

BUILDING DWG #	CONDUIT TYPE	FROM (Location)	TO (Location)	LENGTH (m)	NOTES
1000	Rigid PVC	XUG1-1	X3-1	15	
1000	Rigid PVC	XUG1-1	EXTN	14	
1000	Metallic	XUG1-1	XUG2	17	
1000	Rigid PVC	XUG1-1	INT1	25	INT1 next to pillar G5/Stall 123
1000	Rigid PVC	INT1	XUG1-2a	15	INT1 next to pillar G5/Stall 123
1000	Metallic	XUG1-2a	XUG1-2b	5	
1000	Rigid PVC	X3-1	X3-2	15	
1000	Rigid PVC	X3-1	X5	20	

Physical labeling of *each termination box* shall be as per the room/location in which it is installed (FROM location) and labeling of *each conduit* at the same termination box shall indicate the far end room/location in which it is terminated (TO location). Additional sample drawings can be requested from BC Hydro Distribution Design.

7 Definitions

Except where noted below, definitions shall be in accordance with Canadian Electrical Code.

Instrument Transformer means a high accuracy **Voltage Transformer (VT)** or **Current Transformer (CT)** that transforms the metered circuit voltage and current to lower levels for connection to an instrument transformer type meter. Metering VTs and CTs secondaries are 120V and 5A respectively.

Instrument Transformer Metering means a metering installation where the meter is connected to the metered circuit conductors via instrument transformers.

Meter Cabinet means the previously BC Hydro supplied cabinet for mounting a 3-phase instrument transformer meter. **Meter cabinet is currently no longer supplied by BC Hydro.**

Meter Socket means the Customer supplied device for mounting a Self-Contained meter. The meter socket is referred to as the meter mounting device in the Canadian Electrical Code.

Indoor Meter Closet means a small electrical room with one or more meter centre(s) and/or bases and may consist of a dry-type transformer.

Network Service means a service consisting of two phase conductors plus a neutral conductor supplied from a standard 3 phase, 4 wire distribution power system.

Premises means a building, a separate unit of a building, a dwelling or machinery, together with the surrounding land.

Self-Contained Metering means a metering installation where the meter is installed directly in series with the circuit conductors.

Transformer-Type Meter Socket means the Customer supplied meter socket c/w test switch compartment in various jaw configurations required to install BC Hydro supplied test switch and meter for Instrument Transformer Metering. The meter socket is referred to as the meter mounting device in the Canadian Electrical Code.

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