TORONTO HYDRO

METERING REQUIREMENTS

750 VOLTS OR LESS

FIRST EDITION: March 2003
REVISION #1: June 30, 2004
REVISION #2: February 28, 2005
REVISION #3: February 28, 2006
REVISION #4: January 23, 2007
REVISION #5: October 23, 2008
REVISION #6: October 27, 2011
REVISION #7: July 24, 2012
REVISION #8: October 7, 2014
REVISION #9: October 9, 2015
REVISION #10: September 30, 2016
REVISION #11: July 21, 2017
REVISION #12: August 14, 2018
REVISION #13: August 9, 2019
REVISION #14: January 1, 2023
REVISION #15: January 1, 2025
REVISION #16: January 1, 2026
REVISION #17: January 1, 2027

PREPARED BY: Angela Lam, P.Eng
Engineer, Standards

REVIEWED BY: Rob McKeown, P.Eng
Director, Standards

CERTIFICATE OF APPROVAL

THIS TECHNICAL SPECIFICATION MEETS THE SAFETY REQUIREMENTS OF SECTION 4 OF ONTARIO REGULATION 22/04

Angela Lam, P. Eng STANDARDS	January 1, 2027 DATE

Metering Requirements 750 Volts or Less

Index

1.0 SCOPE 6

1.1 Toronto Hydro Requirements 6

1.2 Ontario Electrical Safety Code 6

2.0 PURPOSE 6

3.0 DEFINITIONS, PUBLICATIONS AND THE INTERNATIONAL SYSTEM OF UNITS 6

3.1 Definitions 6

3.2 Associated Publications and Standards 7

3.3 The International System of Units 7

4.0 PROCEDURE FOR SERVICE APPLICATION 8

4.1 Approval Routine 8
- 4.1.1 Initial Data Requirements 8
- 4.1.2 Drawings and Information Required 8
- 4.1.3 Approvals Prior to Manufacture 8
- 4.1.4 Inspection and Approval Prior to Energization 8

4.2 Engineering Drawings and Specifications 8
- 4.2.1 Drawings Required for Acceptance 8
- 4.2.2 Drawing Revisions 9

4.3 Service Change, Relocations and New Services 9
- 4.3.1 Meter Installation and Meter Disconnection 9

5.0 SERVICE ENTRANCE AND ELECTRICAL ROOMS 10

5.1 General Requirements 10
- 5.1.1 Self Contained Meter(s) – Residential (Up to 6 Meters) 10
- 5.1.2 Self Contained Meter(s) – Residential (> 6 Meters), Multi-Residential, Non-Residential, Mixed-Use 10
- 5.1.3 Self Contained Meter – (Outdoor Service Pedestal) Parks and Utilities 10
- 5.1.4 Self Contained Meter – (Outdoor Pole/Post) Temporary Services 10
- 5.1.5 Transformer Rated Meter – (Indoor/Outdoor Power Shack) Temporary Services 10
- 5.1.6 Transformer Rated Meter – (Transformer Rated Socket with Integral CT – 300/5) Residential 11
- 5.1.7 Transformer Rated Meter – (Transformer Rated Socket and Meter Cabinet) Residential 11
- 5.1.8 Transformer Rated Meter – Multi-Residential, Non-Residential, Mixed-Use 11

5.2 Legislation and Specified Requirements 14

5.3 Exit Doors and Hardware 14

5.4 600 Volt Delta and 347/600 Volt Y – In Electrical Rooms 14

5.5 Fire Pump Services 14

6.0 REVENUE METERING AND ASSOCIATED EQUIPMENT 15

6.1 General Information and Requirements 15
- 6.1.1 Scope of Supply 15
- 6.1.2 Customer's Equipment, Instrumentation, Relays, Transformation and Other Devices 15
- 6.1.3 Service Identification 16
- 6.1.4 Access and Locking Provision 16
- 6.1.5 Working Space and Clearance 16
- 6.1.6 Vibration and Potential Damages 17
- 6.1.7 Access to Energized Equipment 17
- 6.1.8 Bonding and Grounding 17

CONDITIONS OF SERVICE, SECTION 6 – REFERENCE #6

6.2 Metering Instrument Transformers 18
6.2.1 Instrument Transformer Data 18
6.2.2 Meter Instrument Transformer Enclosures 18
6.2.3 Metering Transformers on Load Side 18
6.2.4 Mounting Arrangements 18

6.3 Meter Cabinets 18
6.3.1 General Requirements 18
6.3.2 Material 19
6.3.3 Doors 19
6.3.4 Locking and Sealing 19
6.3.5 Mounting Panel (Back Plate) 19
6.3.6 Mounting Height 19
6.3.7 Freedom from Vibration and Potential Damages 19
6.3.8 Meter Cabinet Size 20
6.3.8.1 Meter Cabinet Size for Meters Only 20
6.3.8.2 Meter Cabinet Size for Instrument Transformers and Associated Equipment 20
6.3.8.3 Meter Cabinet Size for Meter, Instrument Transformers, and Associated Equipment 20
6.3.8.4 Multiple Metering Points 20
6.3.9 Entry and Exit Points for Toronto Hydro Supply 22
6.3.10 Power Supply Service Cables in Meter Cabinet 22
6.3.11 Neutral Wire 23

6.4 Intentionally Left Blank 23

6.5 Intentionally Left Blank 23

6.6 Service Box and Switch 24
6.6.1 General Requirements 24
6.6.2 Service Box and Switch Requirements 24
6.6.3 Service Box and Switch Location 24
6.6.4 Ratings 25

6.7 Meter Socket (Transformer Rated and Self Contained – 200A or Less) 26
6.7.1 Customer Supplied Equipment 26
6.7.2 General Requirements 26
6.7.3 Terminal Arrangements for Self Contained Meters 27
6.7.4 Approved Transformer Rated Meter Sockets 27
6.7.5 Line Side Connector Type 27
6.7.6 Ratings 27
6.7.7 Mounting and Space Requirements 28
6.7.8 Energization Prior to Installation of Meter 28
6.7.9 Multiple Position (Ganged) Metering 28
6.7.10 Splitter Box 29

6.8 Enclosed Switchboards 30
6.8.1 Compartment Isolation 30
6.8.2 Separate Compartment 30
6.8.3 Electrical Clearances - Canadian Standards Association (CSA) Requirements 30
6.8.4 Equipment and Access Door Working Space Requirement 31
6.8.5 Provision for Sealing and Padlocking Equipment Access Doors 31
6.8.6 Equipment Access Door Openings 31
6.8.7 Mounting Hardware 32
6.8.8 Installation by Manufacturer/Customer 32
6.8.9 Window-Type Current Transformers 32
6.8.10 Voltage Transformers 33
6.8.11 Neutral Bus Tap 33
6.8.12 Grounding Stud 33
6.8.13 Compartment Sizes 34
6.8.14 Meter Cabinet and Transformer Rated Meter Socket Requirements 34
6.8.15 Location of Meter Cabinet and Transformer Rated Meter Socket 34
6.8.16 Conduit and Metering Compartment 35
6.8.17 Conduit Length and Size 35
6.8.18 Conduit Fittings and Covers 35
6.8.19 Pull Line in Conduit Run 35
6.8.20 Connection of Meter Wires 35
6.8.21 Meter Cabinet Bonding 35

6.9 Meter Centres 36
6.9.1 Provision for Sealing 36
6.9.2 Provision for Padlocking 36
6.9.3 Meter Socket Assemblies 36
6.9.4 Protection of Meter-Mounting Devices 36
6.9.5 Identification of Socket and Cover 37
6.9.6 Identification of Individual Service 37
6.9.7 Positioning of Meters 37
6.9.8 Neutral for Meters 37
6.9.9 Barrier for Meters 37
6.9.10 Sealing Ring 38
6.10 Remote Interrogated Metering (RIMS) – Services 50 kW and Greater 38
7.0 METERING REQUIREMENTS FOR MULTI-RESIDENTIAL BUILDING WITH SUB-METERING 38
7.1 Standard Metering Configuration 38
7.2 Electric Vehicle Charging Stations 38
8.0 DIAGRAMS 38

1.0 SCOPE

1.1 Toronto Hydro Requirements

This publication covers the requirements of Toronto Hydro, in addition to the requirements of the "Supply Authority" stated in the Ontario Electrical Safety Code, for service entrance, connection, and metering of electrical energy to Toronto Hydro customers for Permanent and Temporary Services.

1.2 Ontario Electrical Safety Code

Nothing contained in these Requirements shall prejudice or supersede any requirements of the Ontario Electrical Safety Code or affect regulations of existing building codes, unless specifically stated herein.

Some of these requirements identified by the latest edition of the Ontario Electrical Safety Code have been included for convenience and reference purposes, even though they may be under the Electrical Safety Authority (ESA) jurisdiction.

2.0 PURPOSE

This document is intended to provide guidance to Toronto Hydro customers and their agents in the design, preparation of plans and construction of the proposed service installation with respect to revenue metering. The requirements apply to all new, rearranged or upgraded services, both permanent and temporary, and are intended to provide an efficient and safe supply of electrical energy with respect to revenue metering.

It shall be the responsibility of the Customer to conform to the latest edition of the Toronto Hydro Conditions of Service and the Ontario Electrical Safety Code. In the event that requirements between this document, the Conditions of Service, or any other Toronto Hydro document are different, the more stringent requirement shall govern.

3.0 DEFINITIONS, PUBLICATIONS AND THE INTERNATIONAL SYSTEM OF UNITS

3.1 Definitions

In addition to the definitions stated in Section "0" of the Electrical Safety Code, the following meanings have been ascribed to the already defined or new terms.

Acceptable	Meets Toronto Hydro Requirements.
Approval	Approval of drawings and customer's equipment is limited to Toronto Hydro's requirements and should not be construed as acceptance of liability due to faulty design and/or workmanships.
Compartment	A subdivision of a switchgear/switchboard unit.

Customer/Consumer	The person or persons, firm, Corporation or their agents who request or use Toronto Hydro Services.
Meter-Mounting Devices	A meter socket or a meter cabinet.
Service Box	An assembly consisting of an enclosure that can be locked or sealed, containing either fuses and a switch, or a circuit breaker, and of such design that it is possible to operate either the switch or circuit breaker to the open position by manual means when the box is closed as per OESC.
Switchboard	A full height and full depth module of a switchgear or switchboard assembly. It is sometimes referred to as "cell", "unit", 'cubicle" or "section".

3.2 Associated Publications and Standards

In addition to all applicable Toronto Hydro Standards and the applicable reference publications listed in the latest edition of the Ontario Electrical Safety Code, the following publications shall also apply:

- Toronto Hydro Conditions of Service ("Conditions of Service")
- Ontario Electrical Safety Code (OESC)
- Canadian Standards Association (CSA) Standard
- CSA Standard, C22.2 No. 4, Enclosed Switches
- CSA Standard, C22.2 No. 31, Switchgear Assemblies
- CSA Standard, C22.2 No. 244, Switchboards
- CSA Standard, C22.2 No. 115, Meter - Mounting Devices
- CSA Standard, C22.2 No. 229, Switching and Meter Centres
- Electrical and Electronic Manufacturers Association of Canada (EEMAC) Standard for Switchgear Assemblies G8 – 2
- The Ontario Municipal Engineers Association (MEA) Guide to Municipal Standard Construction Part V-Metering and Service Entrance Equipment
- Electrical and Electronic Manufacturers Association for Revenue Metering Equipment in Switchgear Assemblies G10-1
- Ontario Building Code
- The *Occupational Health and Safety Act* and Regulations for Industrial Establishments
- CSA Standard, C235-83 – Preferred Voltage Levels for AC Systems 0 to 50,000 V

NOTE: All publications shall be of the latest edition.

3.3 The International System of Units

SI units have been used in this publication for measurements and weights. The metric units have been rounded as close as possible to the previously used units. Equipment

or materials not available in metric units shall be equal to or larger than the units specified in this publication.

All drawings submitted by customers shall be in metric units.

4.0 PROCEDURE FOR SERVICE APPLICATION

4.1 Approval Routine

In additional to compliance with the OESC, Consumer's service equipment and associated revenue metering equipment are subject to Toronto Hydro requirements and approvals. An approval and/or a Connection Authorization from the Electrical Safety Authority (ESA) is not to be interpreted as Toronto Hydro approval or compliance with Toronto Hydro requirements.

4.1.1 Initial Data Requirements

Application for supply of service shall include service address, load details, size and location of service and desired service date.

4.1.2 Drawings and Information Required

Once the type of service has been determined, detailed drawings and specifications shall be submitted for review and acceptance (see Section 4.2).

If the drawings and information provided do not meet Toronto Hydro requirements or are unclear, the Customer shall revise or provide additional drawings and information for further review and acceptance by Toronto Hydro.

4.1.3 Approvals Prior to Manufacture

Manufacture or work associated with the installation of equipment should start only after the design has been reviewed and accepted by Toronto Hydro.

4.1.4 Inspection and Approval Prior to Energization

Provisions for metering shall be inspected and approved by Toronto Hydro prior to energization.

4.2 Engineering Drawings and Specifications

4.2.1 Drawings Required for Acceptance

Fully dimensioned and scaled drawings submitted for Toronto Hydro's review and acceptance shall include but not be limited to the following list:

(a) Electrical room layout drawing showing the location of the electrical switchboard and all revenue metering equipment (meter cabinets and/or meter centres). (2)

(b) Single line distribution diagram. (2)

(c) Manufacturer's or shop drawings of the proposed switchboard, with a utility compartment detail drawing. (2)

(d) Meter centre drawings. (2)

The minimum number of copies of drawings required is indicated in brackets. This requirement may change without notice. Additional drawings may be requested.

4.2.2 Drawing Revisions

If any drawings require revision, Toronto Hydro will determine the number of copies of each drawing to be re-submitted for further review and acceptance.

4.3 Service Change, Relocations and New Services

4.3.1 Meter Installation and Meter Disconnection

Under no circumstances is the Toronto Hydro meter seal to be cut or tampered with, or the meter to be removed from its socket by the Customer or their representative. The activity of a meter installation or meter disconnection shall only be performed by Toronto Hydro. For a meter installation or meter disconnection, the customer or their representative is to call 416-542-2533.

5.0 SERVICE ENTRANCE AND ELECTRICAL ROOMS

5.1 General Requirements

Equipment shall be installed in a suitable location in accordance with Toronto Hydro requirements at a location acceptable to Toronto Hydro. Refer to Table I for applicable requirements associated with revenue metering equipment. Table 1 is subject to, and should be read together with, all applicable conditions and requirements in this document and in any other governing documents.

5.1.1 Self Contained Meter(s) – Residential (Up to 6 Meters)

All residential meters for new, changed or relocated services shall be mounted outdoors.

Where the residential meter cannot be located outdoors due to reasons including but not limited to accessibility and safety, the residential meter may be located indoors with the main service box located on the line side of the meter(s). The location must be approved by Toronto Hydro.

5.1.2 Self Contained Meter(s) – Residential (> 6 Meters), Multi-Residential, Non-Residential, Mixed-Use

Meters for new, changed or relocated services shall be mounted indoors with main service box connected on the line of the meter. All meters for high rise apartment and condominium buildings shall be mounted indoors with the main service box located on the line side of the meter and revenue metering equipment. The location must be approved by Toronto Hydro.

5.1.3 Self Contained Meter – (Outdoor Service Pedestal) Parks and Utilities

Meters for utilities and parks can be located outdoors, for single phase 120/240V or two phase 120/208V (network) services, up to 200A only.

5.1.4 Self Contained Meter – (Outdoor Pole/Post) Temporary Services

Meters for temporary services up to 200A, can be located outdoors. For three phase temporary services up to 200A, service entrance equipment (i.e. meter, meter socket, main service box) shall be installed within a meter cabinet that is weatherproof, NEMA Type 3R, CSA approved. The main service box/switch shall be connected on the line side of the meter for three phase services.

5.1.5 Transformer Rated Meter – (Indoor/Outdoor Power Shack) Temporary Services

Meters for temporary services, 400A or 600A three phase 347/600V, can be located indoors or outdoors. Revenue metering equipment (i.e. meter, meter socket, instrument transformers) shall be installed within a meter cabinet that is CSA approved and weatherproof, NEMA Type 3R (when installed

outdoors). The main service box shall be connected on the line side of the revenue metering equipment for three phase services.

5.1.6 Transformer Rated Meter – (Transformer Rated Socket with Integral CT – 300/5) Residential

Meters for new, changed or relocated residential services shall be mounted outdoors.

5.1.7 Transformer Rated Meter – (Transformer Rated Socket and Meter Cabinet) Residential

Meters for new, changed or relocated residential single phase, 600A or 800A services, shall be mounted outdoors. Both the meter cabinet and main service box shall be located indoors. Main service box shall be connected on the line side of the revenue metering equipment (i.e. meter cabinet, CTs, meter).

5.1.8 Transformer Rated Meter – Multi-Residential, Non-Residential, Mixed-Use

Meters for new, changed, or relocated multi-residential, commercial or industrial services shall be mounted indoors with the main service box located on the line side of the revenue metering equipment. The location must be approved by Toronto Hydro.

Metering Requirements 750 Volts or Less

TABLE I – LOCATION OF REVENUE METERING EQUIPMENT

Meter Type	Meter Mounting Device	Location	Main Bus/ Switch Size	System	Main Service Box Location	Application
Self Contained (200A or Less)	Meter Socket (Single Position)	Outdoor	Up to 200A	1Φ – 120/240V 2Φ – 120/208V	Load side of meter	Residential (1 meter)
	Meter Socket (Multiple Position – Ganged)	Outdoor	200A or 400A	1Φ – 120/240V 2Φ – 120/208V	Load or line side of meters	Residential (2 to 6 meters)
	Meter Socket (w/ Main Service Box)	Indoor	200A	1Φ – 120/240V 2Φ – 120/208V 3Φ – 120/208V 3Φ – 347/600V 3Φ – 600V	Line side of meter	Multi-Residential, Non-Residential, Mixed-Use (1 meter)
	Meter Socket (w/ Splitter Box)	Indoor	≤800A	1Φ – 120/240V 2Φ – 120/208V 3Φ – 120/208V 3Φ – 347/600V 3Φ – 600V	Line side of meters	Residential (>6 meters), Multi-Residential, Non-Residential, Mixed-Use
	Meter Centre (w/ Meter Socket)	Indoor	≤800A	1Φ – 120/240V 2Φ – 120/208V 3Φ – 120/208V 3Φ – 347/600V 3Φ – 600V	Line side of meters	Residential (>6 meters), Multi-Residential, Non-Residential, Mixed-Use (Up to 23 meters)
	Meter Socket (w/ Service Pedestal)	Outdoor – Service Pedestal	Up to 200A	1Φ – 120/240V 2Φ – 120/208V	Load side of meter	Parks, Utilities (1 meter)
	Meter Socket	Outdoor – Pole/Post	Up to 200A	1Φ – 120/240V 2Φ – 120/208V	Load side of meter	Temporary Services (1 meter)
	Meter Socket (w/ Meter Cabinet*)	Outdoor – Pole/Post	Up to 200A	3Φ – 120/208V 3Φ – 347/600V	Line side of meter	Temporary Services (1 meter)
Transformer Rated	Meter Cabinet* (48”x48”x12”) with Instrument Transformers	Indoor/ Outdoor – Power Shack	400A or 600A	3Φ – 347/600V	Line side of revenue metering equipment	Temporary Services (1 meter)
	Transformer Rated Socket (Integral CT – 300/5)	Outdoor	400A	1Φ – 120/240V	Load side of meter	Residential (1 meter)
	Transformer Rated Socket and Meter Cabinet*	Indoor – Meter Cabinet Outdoor – Meter Socket	600A or 800A	1Φ – 120/240V	Line side of revenue metering equipment	Residential (1 meter)
	Meter Cabinet* with Instrument Transformers Meter Cabinet for Meter, Instrument Transformers, and Associated Equipment	Indoor	>200A – 800A **	Table III	Line side of revenue metering equipment	Multi-Residential, Non-Residential, Mixed-Use

Metering Requirements 750 Volts or Less

	Switchboard - Meter Cabinet* (Instrument Transformers in Switchboard Compartment)	Indoor	≤800A >800A **	Table II & IV	Line side of revenue metering equipment	Multi-Residential, Non-Residential, Mixed-Use
	Switchboard - Transformer Rated Socket (Instrument Transformers in Switchboard Compartment)	Indoor	≤800A >800A **	Table II & IV	Line side of revenue metering equipment	Multi-Residential, Non-Residential, Mixed-Use

* Revenue metering equipment within meter cabinet. Refer to Table II, III & IV for minimum meter cabinet sizes, where applicable.

** Where main switch capacity exceeds 800A, an enclosed switchboard is required.

5.2 Legislation and Specified Requirements

(a) Where a service entrance electrical room contains a switchboard, the means of egress from such a hazardous room shall conform to the latest revisions of the Ontario Building Code and to the Ontario *Occupational Health and Safety Act* and Ontario Regulation 851 for Industrial Establishments made thereunder.

(b) Working Space: A clear working space of at least 1.0 m with secure footing shall be provided and maintained about electrical equipment and revenue metering equipment, as specified by the OESC. Passageways and working space around electrical equipment shall not be used for storage and must be free of temporary or permanent obstruction including vegetation and vehicles.

(c) Natural Gas and Propane Clearance: All arc producing electrical equipment considered a source of ignition shall maintain minimum clearance distances specified in CSA B149.1 Natural Gas and Propane requirements as well as any applicable codes and regulations.

(d) In the event that requirements between different codes, regulations or rules, or any other Toronto Hydro document are different, the most stringent requirement shall govern.

5.3 Exit Doors and Hardware

In addition to Section 3.4 of the Ontario Building Code on "Exits", the following shall be provided for exit doors:

(a) Exit doors shall open in the direction of exit travel and shall be equipped with panic type hardware.

(b) No exit door shall open directly to the street or open space where there is danger of blockage from ice or snow and pedestrian or vehicular traffic. Such situations shall be discussed with Toronto Hydro to find solutions.

(c) Exit doors shall be clearly identified.

5.4 600 Volt Delta and 347/600 Volt Y – In Electrical Rooms

600 Volt Delta and 347/600 Volt Y services are NOT ACCEPTABLE in the same electrical room.

5.5 Fire Pump Services

Fire pump service shall be metered using a 1220 mm x 1220 mm x 305 mm (48" x 48" x 12") meter cabinet. When instrument transformers are located within a meter cabinet, a neutral conductor to the metering cabinet, minimum size #8 CU, for metering purposes only shall be provided.

6.0 REVENUE METERING AND ASSOCIATED EQUIPMENT

6.1 General Information and Requirements

6.1.1 Scope of Supply

Toronto Hydro will supply all meters, metering instrument transformers (i.e. potential transformers and current transformers) and secondary wiring required for revenue metering. All revenue metering equipment supplied by Toronto Hydro shall remain the property of Toronto Hydro.

In additional to compliance with the OESC, Consumer's service equipment and associated revenue metering equipment are subject to Toronto Hydro requirements and approvals. Provisions for metering shall be inspected and approved by Toronto Hydro prior to energization. An approval and/or a Connection Authorization from the Electrical Safety Authority (ESA) is not to be interpreted as Toronto Hydro approval or compliance with Toronto Hydro requirements.

6.1.2 Customer's Equipment, Instrumentation, Relays, Transformation and Other Devices

(a) Customer's equipment shall be CSA approved and shall be of a kind or type and rating approved for the specific purpose for which it is to be employed.

(b) Customer's instrumentation shall be connected on the load side of the Toronto Hydro metering and must be located in a separate compartment.

(c) Customer's relays, instruments or other devices shall not be connected in the metering circuit.

(d) Customer's transformation shall not be located on the line side of the revenue metering equipment

(e) Meter-mounting devices, including but not limited to, bottom connected A and P base type meters, shall not be used as splitter boxes.

(f) The only exception to (b) or (c) is the installation of a Toronto Hydro approved meter base plug-in transfer device used to connect a portable generator for emergency back-up generation. Refer to Section 2.3.6 of the Conditions of Service.

6.1.3 Service Identification

Marking and labelling of service boxes and equipment shall be provided:

(a) The customer shall permanently and legibly identify each metered service with respect to its specific address which shall include the store, suite, unit or apartment number, where applicable.

(b) The identification shall be applied to all service equipment including but not limited to service boxes, service switches, circuit breakers, meter cabinets and meter sockets.

Weather-resistant laminated engraving required. Permanent markers or paper labels are not acceptable on equipment which requires identification.

Arc flash labels for electrical equipment such as switchboards, panel boards and meter socket enclosures that are installed in other than dwelling units and are likely to require examination, adjustment, serving, or maintenance while energized shall be field marked as per OESC.

6.1.4 Access and Locking Provision

Revenue metering equipment shall be accessible to Toronto Hydro employees and its authorized agents. The Customer and Consumer must provide unimpeded, unobstructed, safe, secure access for Toronto Hydro employees, or its contractors, at all times for the purpose of installing, inspecting, testing, reading, operating, replacing, removing, or maintaining, Toronto Hydro distribution equipment or revenue metering equipment, including reading the revenue meter and switching operations. This right to access applies to Toronto Hydro distribution equipment and/or revenue metering equipment on, under, over or inside Customer-owned Property, twenty-four (24) hours a day seven (7) days a week. Refer to the Conditions of Service for further details including information on notice requirements. Secured access (e.g. to equipment, to property, to electrical room, through gates and etc.), where applicable, shall be provided with:

(a) Provision for Toronto Hydro lockbox housing Customer's access key.

(b) Provision for accepting both Toronto Hydro and Customer padlock.

6.1.5 Working Space and Clearance

(a) Working Space: A clear working space of at least 1.0m with secure footing shall be provided and maintained about electrical equipment and revenue metering equipment, as specified by the OESC. Passageways and working space around electrical equipment shall not be used for storage and must be free of temporary or permanent obstruction including vegetation and vehicles.

(b) Natural Gas and Propane Clearance: All arc producing electrical equipment considered a source of ignition shall maintain minimum clearance distances specified in CA B149.1 Natural Gas and Propane requirements as well as any applicable codes and regulations.

6.1.6 Vibration and Potential Damages

Supply, service, and revenue metering equipment, including but not limited to cables and conductors in conduit, service box(es), switches, and meter-mounting devices (e.g. meter sockets, meter cabinets, meter centres), shall be installed or mounted so as to be free from vibration, mechanical shock, and potential damages. Equipment shall be protected against vandalism and mechanical damage, by location or with the use of bollards, as required by the OESC.

Structures for the installation and mounting of supply, service entrance, and revenue metering equipment (e.g. meter socket, meter cabinet, main service box, conduits for supply service conductors or cables) shall have sufficient strength and structural integrity to withstand loads imposed, including but not limited to equipment, weather, and operational forces for the intended application. Additionally, structures shall account for ground movements as well as freeze-thaw cycles.

The Customer is responsible for maintaining the Customer's property in a condition that is safe as to not inhibit the operation or threaten the integrity or reliability of equipment or infrastructure owned by the Customer or Toronto Hydro.

6.1.7 Access to Energized Equipment

Energized conductors and live parts shall be insulated and/or barriered meeting Toronto Hydro and OESC requirements.

Above ground ducts to meter-mounting devices, service entrance and revenue metering equipment (e.g. meter socket, meter cabinet, service box(es) on the line side of revenue metering equipment) for supply service conductors or cables shall account for ground movement as well as expansion and contraction forces. Above ground ducts up to the line side of the revenue metering equipment shall be continuous and free of junction boxes, elbows, and enclosures that permit unauthorized access to energized wires.

6.1.8 Bonding and Grounding

Bonding and grounding shall be in accordance with OESC requirements.

Electrical equipment and non-current carrying conductive parts of electrical equipment (e.g. service box, meter cabinet, meter socket, enclosures, etc.) shall be bonded and grounded in accordance with OESC requirements.

6.2 Metering Instrument Transformers

6.2.1 Instrument Transformer Data

Toronto Hydro will provide the manufacturer's name, type and rating of metering instrument transformers. Additional information, if required, will be available at the request of the customer.

6.2.2 Meter Instrument Transformer Enclosures

All metering instrument transformers and associated meters shall be installed in an CSA approved enclosure. For indoor applications the cabinet shall be National Electrical Manufacturers Association (NEMA) type 1. For outdoor installations the cabinet shall be NEMA type 3R.

6.2.3 Metering Transformers on Load Side

Metering transformers shall be connected on the load side of the main service box (e.g. main fused switch or circuit breaker). The only exception is approved 400 A single phase transformer rated meter sockets with integral CT.

6.2.4 Mounting Arrangements

Provision shall be made by the customer for mounting the metering instrument transformers (see Sections 6.3 and 6.8) including the supply and installation of all material for the primary connections to the current transformers.

6.3 Meter Cabinets

Meter cabinet(s) and transformer rated sockets shall be supplied and installed by the Customer. Meter Cabinet sizing shall be in accordance with Section 6.3.8, as applicable.

6.3.1 General Requirements

(a) Service entrance, configuration, equipment, location, application, and associated requirements shall comply with Sections 5, 6 and 8.

(b) Meter cabinets containing Toronto Hydro equipment shall not be used as splitter boxes.

(c) Meter cabinets, installed outdoors or where sprinklers are used, shall be weatherproof type, NEMA type 3R, CSA approved. Meter cabinets installed outdoors shall be equipped with door stops.

(d) Where main switch capacity exceeds 800 A, a switchboard is required with a separate compartment for the instrument transformers. Refer to Section 6.8 for switchboard requirements.

6.3.2 Material

All meter cabinets shall be made of sheet steel, #16 Manufacturers Standard Gauge (MSG) minimum. Locking and sealing of meter cabinet shall be in accordance with 6.3.4.

6.3.3 Doors

Meter cabinets for indoor and outdoor installation shall be equipped with vertically hinged doors. Cabinets 915 mm x 915 mm x 305 mm or larger shall have double doors opening at the center.

6.3.4 Locking and Sealing

Meter cabinets for indoor and outdoor installations shall be equipped with a door latch and handle (or combination latch-handle) with provision for a Toronto Hydro padlock and seal. Equipment access doors shall be equipped with metal padlock hasps measuring at least 30mm wide by 5mm thick capable of accepting a standard Toronto Hydro padlock with an 8mm shackle.

6.3.5 Mounting Panel (Back Plate)

Meter cabinets shall be equipped with removable #16 MSG min. sheet metal interior panels. The panel shall be 75 mm narrower and 75 mm shorter than the meter cabinet and mounted with a clearance of 15 mm behind it.

6.3.6 Mounting Height

Minimum distance from finished floor to the base of the meter cabinets shall be 915mm (3’ – 0”) for 915mm x 915mm x 305mm (36” x 36” x 12”) sized cabinet and 610mm (2’ – 0”) for 1219mm x 1219mm x 305mm (48” x 48” x 12”) sized cabinet. Maximum distance from finished floor to the top of the meter cabinet shall be 1830mm.

Note: Any deviation from these dimensions shall require Toronto Hydro approval.

6.3.7 Freedom from Vibration and Potential Damages

Equipment such as meter cabinets, panels and meter-mounting devices shall be mounted so as to be free from vibration, mechanical shock and potential damages. Equipment shall be protected against mechanical damage as required by OESC.

6.3.8 Meter Cabinet Size

6.3.8.1 Meter Cabinet Size for Meters Only

Meter cabinet size requirements for meters only, with metering instrument transformers located remotely (i.e. in switchboard), are shown in Table II. Refer to Diagram #5 for details.

6.3.8.2 Meter Cabinet Size for Instrument Transformers and Associated Equipment

Meter cabinet size requirements for instrument transformers and associated equipment are shown in Table II. Refer to Diagram #11 for details.

6.3.8.3 Meter Cabinet Size for Meter, Instrument Transformers, and Associated Equipment

Meter cabinet size for meters, instrument transformers, and associated equipment in accordance with Table III and applicable notes. Refer to Diagram #10, Diagram #2, and Sections 6.3.9 to 6.3.11 for relevant requirements and additional details.

6.3.8.4 Multiple Metering Points

Where there are multiple metering points requiring more than one set of metering transformers to be totalized, or where a recording instrument or special equipment is required, Toronto Hydro shall be consulted regarding cabinet size.

Metering Requirements 750 Volts or Less

TABLE II – MINIMUM METER CABINET SIZE FOR METER AND APPROVED TRANSFORMER RATED METER SOCKETS

Service			No. of Meters	Main Switch Size/ Service Size	Meter Type	Minimum Meter Cabinet Size mm (inch) W x H x D	Approved Transformer Rated Socket (Manufacturer – Part Number)
Voltage (V)	Phase	Wire					
120/240	1	3	1 or More	200A or 400A	Self Contained (200A or Less)	Refer to Section 5, 6.7, and 8 for details.	
			1	400A	Transformer Rated	N/A	EATON – TCC5-TH HYDEL – CT4-TSB3 (Integral CT – 300/5 See Diagram #3 for wiring) See Diagram #7
				600A or 800A	Transformer Rated	915 x 915 x 305 (36” x 36” x 12”) See Diagram #11	EATON – TSU 5 See Diagram #11
120/240	1	3	1	≤800A ** >800A	Transformer Rated (Non Totalized)	N/A	EATON – TSU 5 See Diagram #4
						915 x 915 x 305 (36” x 36” x 12”) See Diagram #5	N/A
120/208 NETWORK	2	3	1		Transformer Rated (Non Totalized)	N/A	EATON – TSU 5 See Diagram #4
						915 x 915 x 305 (36” x 36” x 12”) See Diagram #5	N/A
120/208 347/600Y	3	4	1		Transformer Rated	N/A	EATON – TSU 13 MICROLECTRIC – CT113 HYDEL – CTS130PW
					Transformer Rated Remotely Interrogated Metering (RIMS) (Non Totalized)	N/A	EATON – TSU 13 MICROLECTRIC – CT113 HYDEL – CTS130PW See Diagram #4
						915 x 915 x 305 (36” x 36” x 12”) See Diagram #5	N/A
600* (DELTA)	3	3	1		Transformer Rated	N/A	EATON – TSU 8 MICROLECTRIC – CT108 HYDEL – CTS800PW
					Transformer Rated Remotely Interrogated Metering (RIMS) (Non Totalized)	N/A	EATON – TSU 8 MICROLECTRIC – CT108 HYDEL – CTS800PW See Diagram #4
						915 x 915 x 305 (36” x 36” x 12”) See Diagram #5	N/A

* For existing services only.

**** Where metering instrument transformers are located remotely (i.e. in switchboard).**

TABLE III – MINIMUM METER CABINET SIZE FOR METER, INSTRUMENT TRANSFORMERS AND ASSOCIATED EQUIPMENT

Service			Main Switch Size	Minimum Meter Cabinet Size** mm (inch)
Voltage (V)	Phase	Wire		
120/240	1	3	>400A – 800 A	915 W x 915 H x 305 D (36" x 36" x 12")
120/208 (NETWORK)	2	3	>200A – 800 A	
120/208 240/416* 347/600Y	3	4	>200A – 800 A	1220 W x 1220 H x 305 D (48" x 48" x 12")
600* (DELTA)	3	3		

*For existing services only.
** A larger cabinet or two (2) separate cabinets may be required:

- Where cable size exceeds the main switch capacity, or
- Where more than 2-500 kcmil CU or 2-750 kcmil AL are used, or
- Where supply service cables do not enter the meter cabinet in a location to permit efficient use of space

6.3.9 Entry and Exit Points for Toronto Hydro Supply

Entry and exit points for Toronto Hydro supply within the meter cabinet shall be located so that meters and/or instrument transformers can be mounted to permit efficient use of space provided. Meter cables in a meter cabinet will be located so that the most efficient use of the space is accomplished. Diagram #2 shows the preferred meter cabinet layout that will be utilized for the installation of meter(s) and accompanying test switches. The cables and instrument transformers must not encroach on the metering area shown in the diagram.

6.3.10 Power Supply Service Cables in Meter Cabinet

Once the meter cabinet has been installed, but before the conduit/corflex cable has been installed, the customer/electrician **must** contact Toronto Hydro (see Diagram #2 for phone numbers) to arrange for metering inspection and installation of Toronto Hydro metering transformers.

(a) Once Toronto Hydro metering transformers have been installed, the customer/electrician is to either insert the supply service cables through the window type current transformers or make compression sleeve connection on the supply service cables. Should bar type metering current

transformers be used, then the customer/electrician shall make compression type terminal lug connections to the bar type metering current transformers. Mechanical connections are not acceptable.

(b) The customer/electrician shall make all primary connections on the supply service cable in the meter cabinet and supply all compression sleeves and or compression lugs.

6.3.11 Neutral Wire

A neutral wire is required for metering 120/208 Volt and 347/600 Volt services. The customer shall provide and install a full-size neutral cable (white) from the neutral bus in the main switch or splitter to the meter cabinet. If the neutral cable is provided for metering purposes only, it shall be terminated at an insulated neutral block. See Diagram #2.

6.4 Intentionally Left Blank

6.5 Intentionally Left Blank

6.6 Service Box and Switch

6.6.1 General Requirements

Service box(es) and switch(es) shall meet the following requirements:

(a) Service entrance, configuration, equipment, location, application, and associated requirements shall comply with Sections 5, 6 and 8

(b) Customer shall be responsible for the supply and installation of service box(es) and switch(es) in accordance with the OESC

6.6.2 Service Box and Switch Requirements

The service box or switch, when required to be located on the line side of any revenue metering equipment:

(a) Shall be visible, accessible, operable and lockable meeting Toronto Hydro requirements

(b) Shall immediately precede, be in direct line of sight, and be adjacent to the revenue metering equipment.

(c) Shall be in a suitable location with adequate working space and clearance acceptable to Toronto Hydro

(d) The top of the main service box or main switch shall be no higher than 1.83 m and the bottom of the main service box or main switch shall be no lower than 1.0 m from the finished floor.

(e) Unauthorized access to Toronto Hydro owned live conductors or components not permitted.

(f) Conductors connected to the load terminals of the service box shall be routed to not come into contact with or cross conductors connected to the line terminals of the main service box, in accordance with the OESC.

(g) Shall permit the sealing and padlocking of:

(i) The operating handle in the “open” (OFF) positions; and

(ii) The cover or door in the closed (ON) position

6.6.3 Service Box and Switch Location

A main service box or main switch on the line side of the revenue metering equipment is required if any one or more of the following applies:

(a) Service entrance, configuration, equipment, location, application, and associated requirements shall comply with Sections 5, 6 and 8.

(b) When revenue metering equipment is located indoors.

(c) When transformer rated meters are used, except for approved transformer rated socket with integral CT 300/5 for outdoor residential applications.

(d) Three phase services.

(e) Residential (>6 meters), multi-residential, non-residential, mixed-use applications.

(f) Multiple position (ganged) metering applications where available fault levels exceed 10kA.

6.6.4 Ratings

The main service box shall meet or exceed minimum equipment ratings, including but not limited to:

(a) Electrical equipment marked with a short-circuit current rating or withstand rating, shall have a rating sufficient for the voltage employed and for the maximum fault current available as per the OESC.

(b) Electrical equipment marked with an interrupting rating or interrupting capacity shall have a rating sufficient for the voltage employed and for the maximum fault current available as per the OESC.

(c) Protection equipment minimum short circuit ratings shall be in accordance with Conditions of Service. For 120/240V supply, the Customer's protective equipment shall have a minimum short circuit rating of 22, 000A.

(d) Equipment shall be CSA approved, suitably sized, and rated for the application.

In the event that the requirements in different codes, regulations, rules, or any other Toronto Hydro documents differ, the most stringent requirement shall govern.

6.7 Meter Socket (Transformer Rated and Self Contained – 200A or Less)

Meter socket shall be certified in accordance with CSA Standard C22.2 No. 115, Meter - Mounting Devices.

6.7.1 Customer Supplied Equipment

(a) Meter socket(s) shall be provided and maintained by the customer.

(b) Service box(es) or switch(es), on the line and/or load side of the meter socket or revenue metering equipment, as required. Refer to Section 6.6 for service box and switch requirements and Section 8 for standard configurations.

(c) Splitter box and/or meter cabinets where permitted.

6.7.2 General Requirements

(a) Service entrance, configuration, equipment, location, application, and associated requirements shall comply with Sections 5, 6, and 8.

(b) Refer to Section 6.1 for additional general information and requirements, including but not limited to, scope of supply, service identification, access and locking provisions, working space and clearance, access to energized equipment, bonding and grounding requirements.

(c) Meter socket(s) shall be supplied with a metal sealing ring. Ringless meter sockets are not permitted. Round and shallow square meter socket not permitted.

(d) Meter socket(s) shall not be used as a splitter.

(e) Enclosure cannot contain other auxiliary device(s)

(f) Automatic bypass devices are not permitted.

(g) Meter mounting device with spare and/or unused position(s) not permitted.

(h) Unauthorized access to unmetered portion(s) of the service not permitted. Service equipment, conduit fittings and junction boxes with removable covers providing unauthorized access to unmetered portions of the service, up to point of metering, not permitted.

6.7.3 Terminal Arrangements for Self Contained Meters

Only meter sockets listed below with terminal arrangement outlined in Diagram #1 shall be used.

120/240 V	1 Phase	3 Wire	4-jaw socket
120/208 V	2 Phase	3 Wire	5-jaw socket
120/208 V	3 Phase	4 Wire	7-jaw socket
347/600 V	3 Phase	4 Wire	7-jaw socket
600 V*	3 Phase	3 Wire	5-jaw socket

* (Existing Services Only)

6.7.4 Approved Transformer Rated Meter Sockets

Only approved transformer rated meter socket(s) in accordance with Table II and as per associated diagrams are permitted.

6.7.5 Line Side Connector Type

(a) Meter socket to come with stud type connector on the line side when Toronto Hydro underground supply service cable termination at the meter socket with compression type lug is required (e.g. single phase 120/240V or two phase 120/208V underground services with metering outdoor). Meter-mounting device having studs for termination of compression connectors marked as follows:

"THIS METER-MOUNTING DEVICE IS FOR USE WITH UNDERGROUND SUPPLY SYSTEMS ONLY"

(b) Meter socket to come with tunnel type connector on the line side when overhead supply service conductor termination at the meter socket is required or when supply service conductor/cable termination is at the main switch/main service box on the line side of the meter socket.

6.7.6 Ratings

(a) All equipment shall be CSA approved, suitably sized, and rated for the application. All new and upgraded services shall utilize weatherproof, NEMA Type 3R, CSA approved meter mounting device(s).

(b) Meter mounting device bus mains ampere rating:

(i) For a 100 A service, bus mains shall have a minimum rating of 100A

(ii) For a 200 A service, bus mains shall have a minimum rating of 200A

(iii) For a 400 A service, bus mains shall be rated for 400A

(c) Refer to Section 6.6 for main service box ratings and associated requirements.

In the event that the requirements in different codes, regulations, rules, or any other Toronto Hydro documents differ, the most stringent requirement shall govern.

6.7.7 Mounting and Space Requirements

(a) Meter sockets shall be installed in an acceptable manner and location. They must be mounted level in the horizontal and vertical planes (see Diagram #1 for terminal arrangements) at heights indicated below:

Outdoors – The centerline of the meter shall be 1700 mm ± 100 mm.

Indoors – The centerline of the meter shall be approximately 1700 mm but in no case shall it be more than 1800 mm or less than 600 mm.

(b) A clear space of 400 mm (w) x 600 mm (h) shall be provided for each meter mounting device.

(c) A clear space of at least 1000 mm with secure footing shall be provided and maintained about electrical equipment including revenue metering equipment, as specified by the OESC.

(d) All arc producing electrical equipment considered a source of ignition shall maintain minimum clearance distances specified in CSA B149.1 Natural Gas and Propane requirements as well as any applicable codes and regulations. In the event that requirements between different codes, regulations or rules, or any other Toronto Hydro document are different, the most stringent requirement shall govern.

(e) Refer to Section 6.1.6 for requirements related to equipment vibration and protection against potential damages.

6.7.8 Energization Prior to Installation of Meter

When the service is to be energized prior to the installation of the meter, acceptable temporary jumper bars may be used in the meter socket. Should the meter jaws be found to be damaged by improper use of jumpers, the customer shall replace the meter socket.

6.7.9 Multiple Position (Ganged) Metering

Where multiple-position (ganged) is permitted:

(a) Service entrance, configuration, equipment, location, application, and associated requirements shall comply with Sections 5, 6 and 8.

(b) Single phase 120/240V or two phase 120/208V applications only.

(c) The bus mains cannot exceed 400 A.

(d) One CSA approved, manufactured, multiple position (ganged) meter socket assembly shall be used.

(e) The number of meters within a gang metering unit cannot exceed six. Spare position(s) not permitted.

(f) Multiple position (ganged) meter socket assembly shall come with a compartment to accommodate incoming supply cable or service conductor entry, installation, and termination.

(g) Each metered service shall have a separate service identification, on the exterior of each meter socket cover and service box, as per Section 6.1.3 prior to meter installation.

(h) Where maximum available fault levels exceed 10kA, short circuit protection limiting maximum available fault current to 10kA or below shall be provided. Example of acceptable fuses, intended for limiting fault currents to 10kA or below, are listed below:

1. Eaton/Cooper Bussmann (JKS Series - Class J) – Suitable for 200A and 400A

2. Littelfuse Fast-Acting (JLS Series - Class J) – Suitable for 200A and 400A

3. Merson (AJT Series - Class J) – Suitable for 200A only

(i) See Diagram #8 for details.

6.7.10 Splitter Box

Where a splitter box is permitted:

(a) Service entrance, configuration, equipment, location, application, and associated requirements shall comply with Sections 5, 6 and 8.

(b) Main service box shall be located on the line side of all metered services. Each metered service shall be provided with a separate service box/switch on the line side of the revenue metering equipment.

(c) Main service box, splitter, revenue metering equipment, and the service box/switch of each metered service on the line side of revenue metering equipment, shall be grouped and located in a suitable location acceptable to Toronto Hydro. All service box(es) and switch(es) on the line side of revenue metering equipment, shall be in direct line of sight with revenue metering equipment.

(d) Splitter shall be located immediately after the main service box.

(e) Locking and sealing provisions for the splitter box shall be provided.

(f) Each metered service shall have a separate service identification, on the exterior of each meter socket cover and each service box/switch, as per Section 6.1.3 prior to meter installation.

(g) See Diagram #12 for details.

6.8 Enclosed Switchboards

Where main switch capacity exceeds 800A, an enclosed switchboard located inside a service or electrical room with separate compartment(s) for instrument transformers is required. Switchboard shall be certified in accordance with CSA Standard C22.2 No. 31 Switchgear Assemblies. Service entrance, configuration, equipment, location, application, and associated requirements shall comply with Sections 5, 6 and 8.

6.8.1 Compartment Isolation

The following items of equipment shall be isolated by means of separate compartments:

(a) Each service entrance switch or breaker (CSA Standard C22.2 No. 4)

(b) Each set of Toronto Hydro revenue metering instrument transformers.

NOTE: Barriers shall be installed between metered and unmetered sections.

6.8.2 Separate Compartment

A separate compartment with a vertically hinged access door having provision for sealing and locking shall be provided for each set of metering instrument transformers for the exclusive use of Toronto Hydro. See Section 6.8.5 for sealing and locking requirements.

6.8.3 Electrical Clearances - Canadian Standards Association (CSA) Requirements

Where cable or bus connections are made to any component supplied or installed by Toronto Hydro (i.e. revenue metering current and voltage transformers), such connections shall be assumed to be bare conductor and full clearances shall be maintained in accordance with the following CSA table and note, below:

Table 3 of CSA Standard C22.2 No. 31, M89

Nominal voltage Rating (v)	Minimum Spacing (mm)			
	Opposite Polarity		To ground	
	Through Air	Over Surface	Through Air	Over Surface
120 ac	12.5	19	12.5	19
240 ac	19	31	19	25
480 ac	22	44	22	34
600 ac	25	50	25	38

NOTE: Where a neutral is involved, the spacing between the neutral and other current-carrying parts may be based on the lower voltage that normally occurs between them. The spacing from neutral to grounded metal parts are to be the same as those between the current carrying conductors and grounded metal parts.

6.8.4 Equipment and Access Door Working Space Requirement

Doors with vertical hinges shall be installed on the electrical cabinets and compartments containing live equipment where Toronto Hydro personnel will be required to work, such as service entrance switches, metering compartments, switchboard covers over main breakers and unmetered sections of the switchboards.

Working space and clearance shall be in accordance with the OESC.

6.8.5 Provision for Sealing and Padlocking Equipment Access Doors

Hinged doors as described in section 6.8.4 shall have provision for sealing. Where bolts are used for fastening they shall be of the captive knurled type with minimum 25 mm diameter slotted heads.

Equipment access doors shall be equipped with metal padlock hasps measuring at least 30 mm wide by 5 mm thick capable of accepting a standard Toronto Hydro padlock with an 8 mm shackle.

6.8.6 Equipment Access Door Openings

All hinged outer access doors shall open at least 135° and all hinged inner doors or screens shall open at least 90°.

6.8.7 Mounting Hardware

Mounting bolts or nuts shall be installed in a manner which will permit complete installation and/or removal of the instrument transformers from within the compartment in which they are installed. Fixed mounting nuts or bolts shall be required for this purpose.

6.8.8 Installation by Manufacturer/Customer

(a) When the switchboard drawings have been approved, the metering instrument transformers will be delivered upon request to the switchboard manufacturer for installation in the switchboard. The current transformers shall be installed with the polarity marks on the line side. The type and rating of instrument transformers to be supplied shall be determined by Toronto Hydro.

(b) Metering instrument transformers delivered to the site by Toronto Hydro are to be installed in the switchboard by the customer/manufacturer.

(c) All hardware, bus work and/or cable required for primary connections to metering current transformers shall be provided by the customer or the switchboard manufacturer.

(d) The customer and or manufacturer shall not disassemble and/or change in any manner the Toronto Hydro equipment sent to them.

6.8.9 Window-Type Current Transformers

(a) Where window-type current transformers are to be installed, the bus shall be sectionalized. The removable bus links through the current transformers shall be bolted in the vertical bus section directly above and below the current transformers. Where three window-type current transformers are used, they shall be mounted in a staggered arrangement.

(b) Where window current transformers are used and the switchboard bus is larger than the window opening, the customer or switchboard manufacturer shall modify the bus to accommodate the current transformers.

(c) The instrument transformers will be supplied by and will remain the property of Toronto Hydro.

6.8.10 Voltage Transformers

Where required, provision shall be made for the installation of voltage transformers on a #16 MSG steel panel in an accessible location in the instrument transformer compartment. This panel must not obstruct access to the current transformers or the removable bus links through the current transformers. This panel is to be a minimum of 140 mm from the front of the instrument transformer compartment.

The voltage transformers are to be installed in the instrument transformer compartment by the switchboard manufacturer and/or electrician on site.

6.8.11 Neutral Bus Tap

A readily accessible continuous neutral copper bus of 25 mm x 3 mm or equivalent (#6 copper white TW75 wire), with three 10-24 tapped holes, shall be provided in each instrument transformer compartment for all 3 phase 4 wire services. If the main neutral bus passes through a metering instrument transformer compartment, the bus shall be provided with three 10-24 tapped holes.

6.8.12 Grounding Stud

A readily accessible grounding stud with a connector suitable for a #10 copper wire or a ground bar provided with three 10-24 tapped hole shall be provided in each instrument transformer compartment. The grounding facility in the compartment shall be connected directly to the switchboard ground bus.

6.8.13 Compartment Sizes

The minimum metering instrument transformer compartment size is provided in Table IV.

TABLE IV

METERING INSTRUMENT TRANSFORMER COMPARTMENT – MINIMUM SIZES

Metering Transformers and Compartments						
Voltage (Volts)	**Phase**	**Wire**	**Service Size (Amperes)**	**Compartment Size**	**Number of Metering Transformers (Provision for)**	
					Current	**Voltage**
120/240	1	3	Up to 800	A	2	0
120/208 (Network)	2	3	Over 800 Up to 4000	B		
120/208	3	4	Up to 800	A	3	0
			Up to 4000	B		
240/416* 347/600	3	4	Up to 800	A	3	3
			Over 800 Up to 4000	B		
600*	3	3	Up to 800	A	2	2
			Over 800 Up to 4000	B		

* For existing services only.

COMPARTMENT SIZES [width x height x depth (from CT mounting plate)]

A - 762 mm x 762 mm x 210 mm (30” x 30” x 8.25”)
B - 915 mm x 762 mm x 324 mm (36” x 30” x 12.75”)

6.8.14 Meter Cabinet and Transformer Rated Meter Socket Requirements

Meter cabinet as per Diagram #5 shall be installed in accordance with specifications outlined in Table II and Section 6.3. Where permitted, approved transformer rated meter sockets listed in Table II, installed as per Diagram #4, is acceptable and can be used instead of a meter cabinet.

6.8.15 Location of Meter Cabinet and Transformer Rated Meter Socket

Meter cabinet (or transformer rated meter socket as per Diagram #4) associated with revenue metering transformers mounted in a switchboard shall be installed in a location close to the switchboard and approved by Toronto Hydro.

6.8.16 Conduit and Metering Compartment

A separate conduit (to be continuous within the switchboard) is required from each revenue metering switchboard compartment to the meter cabinet (or transformer rated meter socket as per Diagram #4). The meter conduit is to terminate at the front right or left corner of the revenue metering compartment and be unobstructed.

6.8.17 Conduit Length and Size

The maximum length of conduit shall be no longer than 30 m. The customer shall supply and install a conduit of a nominal diameter of not less than 38 mm.

6.8.18 Conduit Fittings and Covers

(a) The number of bends shall be kept to a minimum, but in no case shall there be more than three 90 degree bends.

(b) The metering conduit run within the switchboard and between the switchboard and the meter cabinet (or transformer rated meter socket) shall not have fittings with removable covers. Pull boxes and or 'LBs" are not permitted.

(c) The 51mm (2") metering conduit between the revenue metering instrument transformer compartment in the switchboard and the meter cabinet (or transformer rated meter socket) is to be rigid steel, EMT or PVC. Flexible conduit (e.g. corrugated, non-metallic) underground not recommended, above ground is not acceptable.

6.8.19 Pull Line in Conduit Run

The customer shall install a strong nylon or polyrope pull line in the conduit between each revenue metering transformer compartment and the meter cabinet. An excess of 1500 mm loop shall be left at each end.

6.8.20 Connection of Meter Wires

Under no circumstances will Toronto Hydro install and connect meter wires unless the service is de-energized.

6.8.21 Meter Cabinet Bonding

The meter cabinet is to be bonded to the system ground in accordance with the OESC and ESA requirements.

6.9 Meter Centres

Meter Centres shall be certified in accordance with CSA Standard C22.2 No. 229 Switching and Metering Centres. Service entrance, configuration, equipment, location, application and associated requirements shall comply with Sections 5, 6 and 8. Refer to Diagram #13 for Meter Centre standard configuration.

6.9.1 Provision for Sealing

The customer shall make provision for the installation of Toronto Hydro seals on the following:

(a) removable covers and doors which provide access to unmetered circuits.

(b) handles of all circuit breakers in the "OFF" position.

6.9.2 Provision for Padlocking

Circuit breakers or fused switches protecting a meter socket shall have provision for padlocking in the open position.

6.9.3 Meter Socket Assemblies

Only meter socket assemblies listed below with terminal arrangement outlined in Diagram #1 shall be used in Meter Centres. The meter sockets shall be properly aligned and mounted on a rigid base to prevent subsequent misalignment.

120/240 V	1 Phase	3 Wire	4-jaw socket
120/208 V	2 Phase	3 Wire	5-jaw socket
120/208 V	3 Phase	4 Wire	7-jaw socket
347/600 V	3 Phase	4 Wire	7-jaw socket
600 V*	3 Phase	3 Wire	5-jaw socket

* (Existing Services Only)

6.9.4 Protection of Meter-Mounting Devices

Each meter-mounting device shall be protected by a rated circuit breaker having adequate short circuit interruption capacity. The circuit breaker shall be connected ahead of the meter-mounting device commonly known as "cold" metering.

6.9.5 Identification of Socket and Cover

Each removable meter socket and circuit breaker cover shall be identified by a permanent and unique mark (number, letter, etc.) so that it cannot be interchanged with other similar covers. The same identification mark shall appear on the frame of the meter centre at the compartment where the cover belongs and shall be clearly visible when the covers and meters are in place. This identification mark need not be the number of the suite metered, thus making it feasible to have the identification marks applied during manufacture of the meter centre.

6.9.6 Identification of Individual Service

Each circuit breaker required for an individual service shall have a permanent customer identification plate (metal or engraved plastic) which cannot be erased or obscured by paint. The circuit breakers must easily be recognized.

6.9.7 Positioning of Meters

(a) The centerline of the lowest meters shall not be less than 600 mm from the finished floor level. The centerline of the upper meters shall not exceed 1800 mm from the finished floor level.

(b) The minimum horizontal distance between the adjacent meter and sockets shall be 152 mm rim-to-rim.

(c) The minimum vertical distance rim-to-rim between the adjacent meter socket openings shall be as follows:

(i) 76 mm: for 100 A, 4 or 5 jaw.

(ii) 152 mm: for 100 A, 7 jaw.

(iii) 152 mm: for 200 A, 4, 5, and 7 jaw.

6.9.8 Neutral for Meters

Where a neutral is required for metering, the meter - mounting device shall have a pre-wired neutral connection (see Diagram #1). This neutral connection shall be ungrounded. The connection to the 5^{th} or 7^{th} terminal, if not made directly to the distribution neutral bus, shall be not less than #12 AWG copper or equivalent. Where a connection is to be made between aluminum and copper conductors, a proper bi-metallic connector shall be used.

6.9.9 Barrier for Meters

Each meter socket shall be separated from others by a suitable barrier.

6.9.10 Sealing Ring

Each meter socket shall be equipped with a metal sealing ring.

6.10 Remote Interrogated Metering (RIMS) – Services 50 kW and Greater

The customer is to provide and install the following:

(a) A 120 Volt duplex receptacle, to be located at the bottom right corner inside the meter cabinet or ebox (when approved transformer rated meter socket is used). The receptacle is to be connected to an uninterruptible power supply (UPS) if available. Should the meter cabinet be located in an outdoor environment, then the 120 Volt duplex shall be equipped with GFI protection.

(b) The name and phone number of an on-site contact person.

(c) In locations where cellular communication is unable to connect (typically underground), the customer will need to provide a 19 mm (¾") conduit to an above ground location that has been tested with a cell reception of better than -80 dBm. The conduit length can't be longer than 21 metres. Clearance around the end point of the conduit must be minimum 1 metre.

7.0 METERING REQUIREMENTS FOR MULTI-RESIDENTIAL BUILDING WITH SUB-METERING

7.1 Standard Metering Configuration

Developers are required to conform to Toronto Hydro's standard configuration. Refer to Diagram #6 for details.

7.2 Electric Vehicle Charging Stations

Electric vehicle (EV) charging stations, when required, may be metered separately as shown on Diagram #6.

8.0 DIAGRAMS

The diagrams in this section form an integral part of the requirements and are intended to enhance understanding of the requirements. They are subject to the conditions and requirements specified elsewhere in this document and other governing documents.

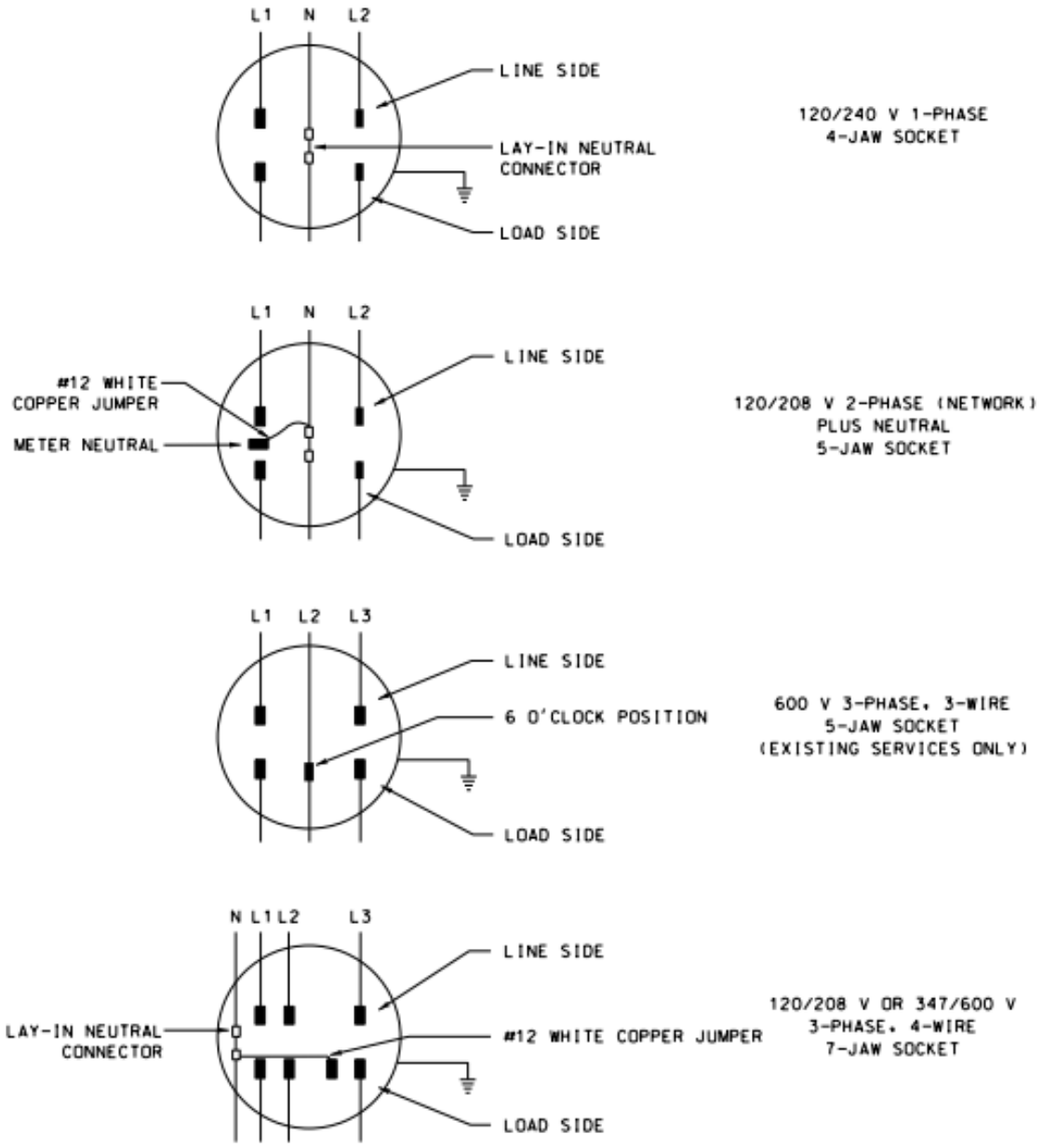
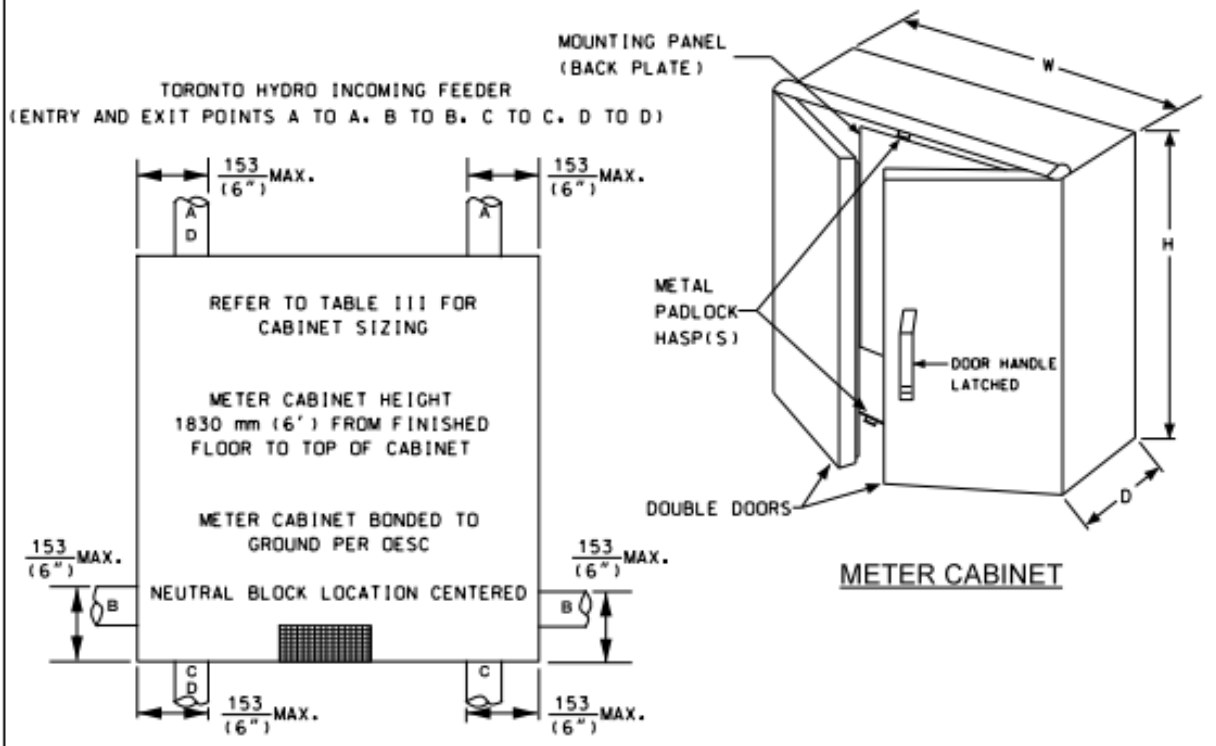


DIAGRAM #1
TERMINAL ARRANGEMENTS FOR
SELF CONTAINED METERS (200A OR LESS)
120/240 V,120/280 V & 347/600 V

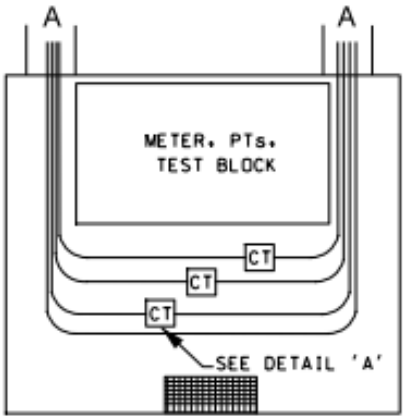
1/1



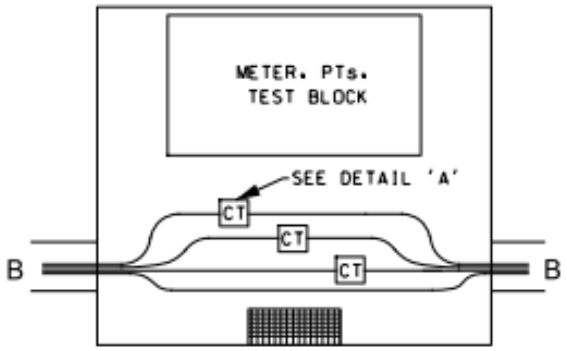
REQUIREMENTS:

1. ENTRY AND EXIT POINTS MUST BE AT POINTS A TO A. B TO B. C TO C. OR D TO D. ANY OTHER CONDITIONS REQUIRE APPROVAL FROM METER CREW LEADER FROM THE DISTRICT YOU ARE WORKING WITHIN.
2. THE ELECTRICIAN WILL INFORM THE METER CREW LEADER ONCE THE METER CABINET IS MOUNTED BUT BEFORE THE CONDUCTORS ARE PULLED IN. THE CREW LEADER WILL ARRANGE FOR THE INSTALLATION OF THE METERING EQUIPMENT. ALL NEW JOBS WILL UTILIZE WINDOW TYPE CURRENT TRANSFORMERS. THE CURRENT TRANSFORMERS MUST BE INSTALLED PRIOR TO THE ELECTRICIAN PULLING IN THE CONDUCTORS.
3. THE ELECTRICIAN WILL BE RESPONSIBLE FOR PULLING THE CABLES THROUGH THE APPROPRIATE CURRENT TRANSFORMERS AND ENSURING THAT PHASES CORRESPOND IN CASES OF MULTIPLE CONDUCTORS PER PHASE. THE ELECTRICIAN WILL LOCK OFF THE SWITCH UNTIL THE METERING INSTALLATION IS COMPLETE AND ALL CONDITIONS ARE MET WITH TORONTO HYDRO ELECTRIC SYSTEM AND ESA.
4. THE ELECTRICIAN WILL BE RESPONSIBLE FOR ANY SPLICES. SLEEVE OR LUGS IN THE METER CABINET ONCE THE CABLE IS PULLED THROUGH THE CURRENT TRANSFORMERS. TORONTO HYDRO WILL NOT PROVIDE ANY MATERIAL FOR SPLICES. COMPRESSION SLEEVES ARE RECOMMENDED. ALL SPLICE MATERIAL MUST PASS INSPECTION BY ESA.
5. FOR WYE TYPE INSTALLATION. THE NEUTRAL MUST ENTER THE METER CABINET. IF THE NEUTRAL IS TO BE TERMINATED IN THE METER CABINET. AN INSULATED NEUTRAL BLOCK CENTERED AT THE BOTTOM OF THE METER CABINET WILL BE REQUIRED.
6. FOR ANY DEVIATIONS FROM THESE REQUIREMENTS. PLEASE CONTACT A TORONTO HYDRO CREW LEADER FOR THE AREA:
   CREW LEADER: WEST OF YONGE STREET JOE DIPINTO: 416-726-5485
   CREW LEADER: EAST OF YONGE STREET MATTHEW KIRK: 647-962-8005

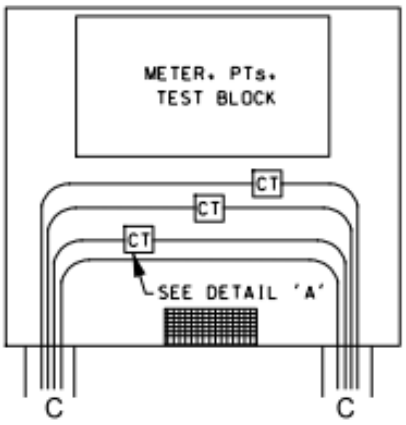
DIAGRAM #2 METER CABINET FOR METER, INSTRUMENT TRANSFORMERS, AND ASSOCIATED EQUIPMENT - CABINET LAYOUT STANDARD CONFIGURATION	1/2



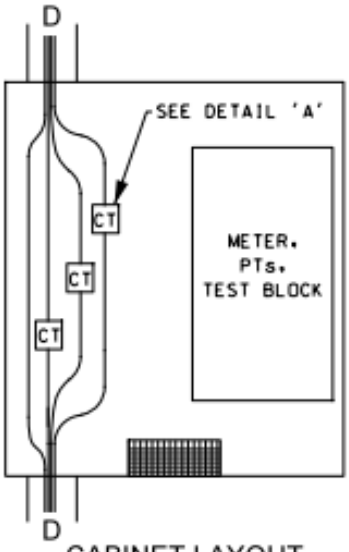
CABINET LAYOUT
EXIT AND ENTRY POINTS: A TO A



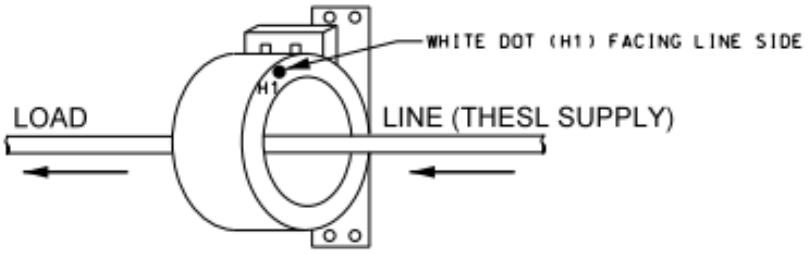
CABINET LAYOUT
EXIT AND ENTRY POINTS: B TO B



CABINET LAYOUT
EXIT AND ENTRY POINTS: C TO C



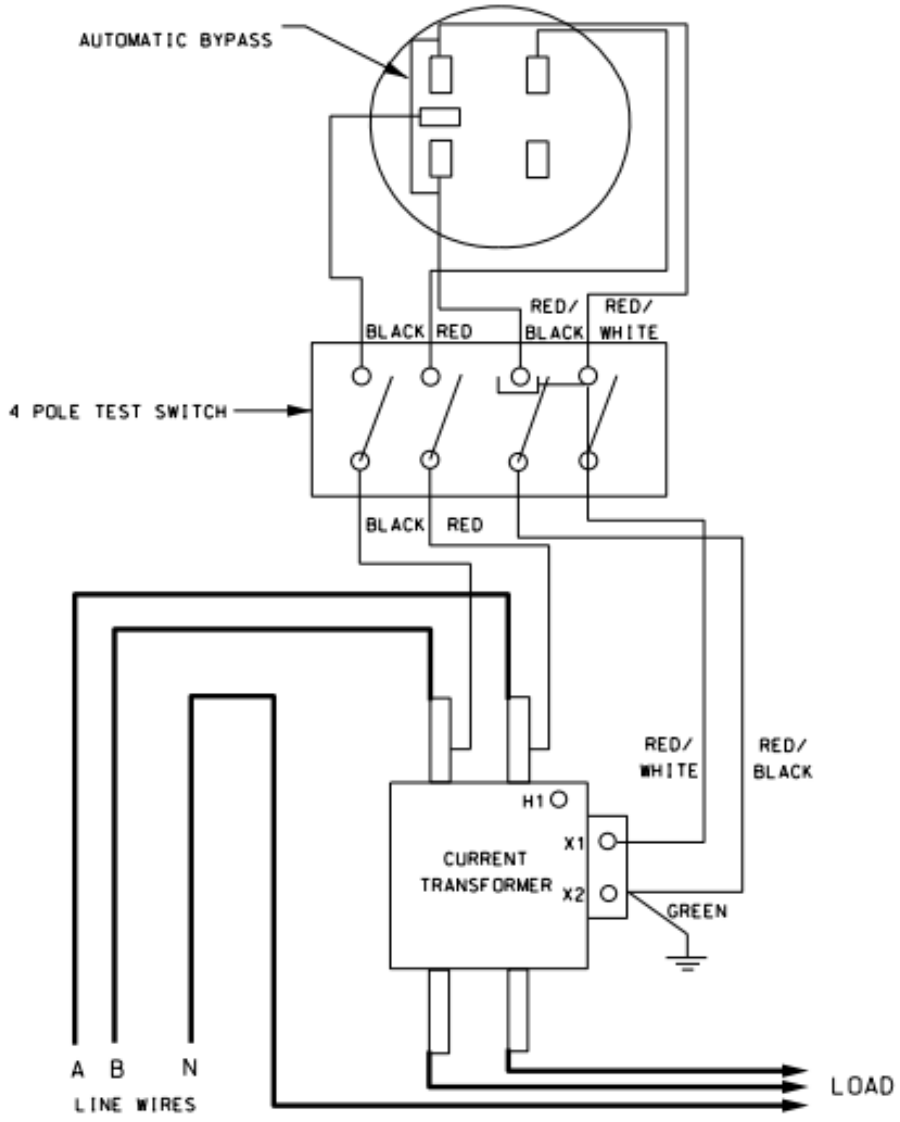
CABINET LAYOUT
EXIT AND ENTRY POINTS: D TO D



DETAIL 'A'
CT MARKING & POLARITY

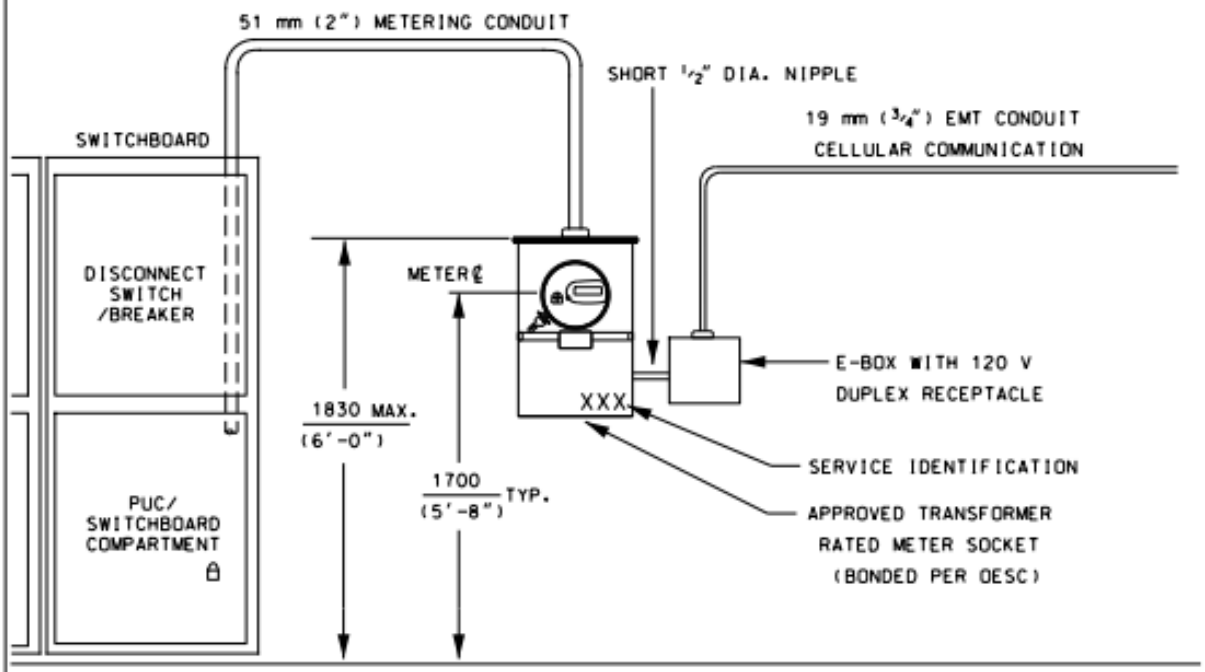
DIAGRAM #2
METER CABINET FOR METER, INSTRUMENT TRANSFORMERS,
AND ASSOCIATED EQUIPMENT - CABINET LAYOUT
STANDARD CONFIGURATION

2/2



WIRING DIAGRAM

DIAGRAM #3 TRANSFORMER RATED SOCKET - 400A (INTEGRAL CT - 300/5)	1/1

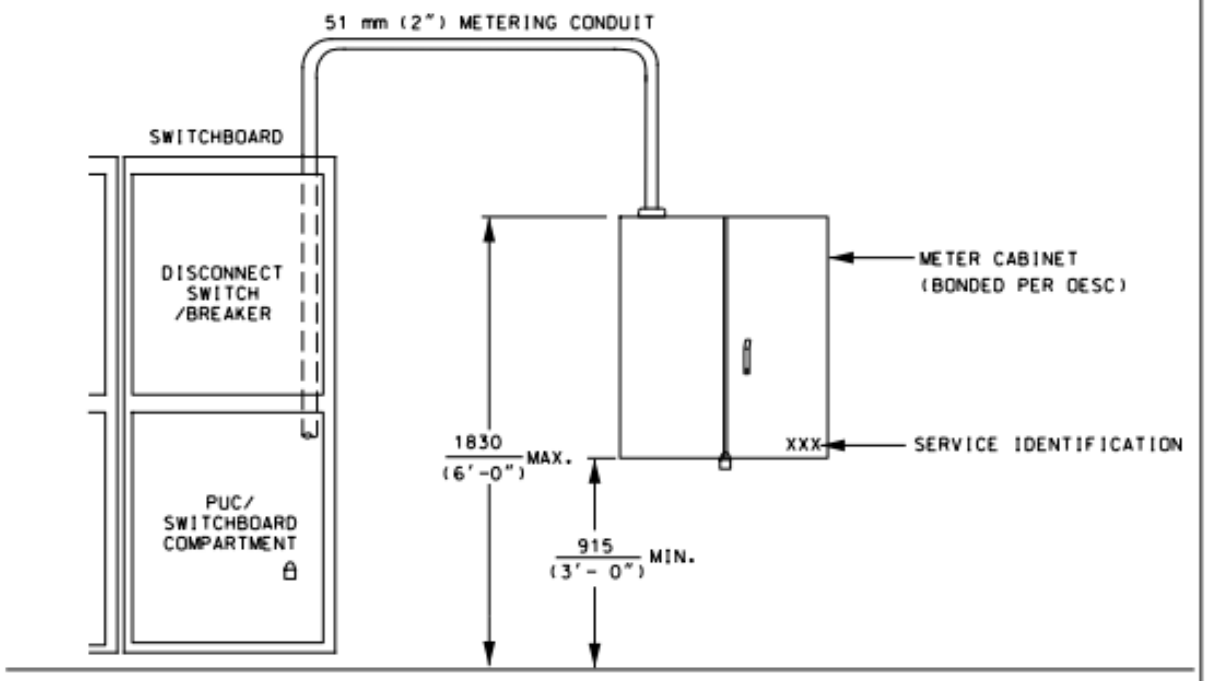


REQUIREMENTS:

1. METER SOCKET - MUST BE AN APPROVED TRANSFORMER RATED METER SOCKET.NO AUTOMATIC BYPASS. PROVISION FOR A 10 POLE TEST PANEL. LOCKABLE COVER TO BE BONDED AS PER OESC. 1700 mm (5'8") TO CENTER OF OPENING. SOCKET CAN BE LOCATED OUTDOORS.
2. METER CONDUIT - 51 mm (2") CONDUIT. LB CONDUIT FITTING NOT PERMITTED. CONTINUOUS FROM THE METER INSTRUMENT TRANSFORMERS TO THE METER SOCKET. MAXIMUM OF THREE 90 DEGREE BENDS. MAXIMUM CONDUIT LENGTH IS 30 m (100").
3. E-BOX - A 305 mm X 30 mm X 102 mm (12" X 12" X 4") E-BOX WITH A HINGED DOOR DIRECTLY ADJACENT [LESS THAN 102 mm (4")] TO THE METER SOCKET. THE E-BOX WILL BE CONNECTED TO THE METER SOCKET WITH A 13 mm (1/2") CONDUIT. THE CONNECTION TO THE METER SOCKET IS TO BE MADE AT THE TOP HALF OF THE METER SOCKET OPPOSITE THE METER SOCKET JAWS ASSEMBLY. A 120 V DUPLEX RECEPTACLE IS TO BE LOCATED IN THIS E-BOX. IF POSSIBLE, THE 120 V SUPPLY SHOULD COME FROM A UPS. THE E-BOX MUST BE LOCKABLE. E-BOX IS ALSO USED FOR RS-485 COMMUNICATION CABLE.
4. IN LOCATIONS WHERE CELLULAR COMMUNICATION IS UNABLE TO CONNECT (TYPICALLY UNDERGROUND), THE CUSTOMER WILL NEED TO PROVIDE A 19 mm (3/4") CONDUIT TO AN ABOVE GROUND LOCATION THAT HAS BEEN TESTED WITH A CELL RECEPTION OF BETTER THAN -80 dBm. THE CONDUIT LENGTH CAN'T BE LONGER THAN 21 METRES. CLEARANCE AROUND THE END POINT OF THE CONDUIT MUST BE MINIMUM 1 METRE.
5. PUC/SWITCHBOARD COMPARTMENT - HOUSING THE REVENUE METERING INSTRUMENT TRANSFORMERS. THE METER CONDUIT IS TO EXTEND CONTINUOUSLY FROM THIS COMPARTMENT TO THE METER SOCKET. SEE ITEM 2 ABOVE FOR METER CONDUIT REQUIREMENTS.

METER TYPE: TRANSFORMER RATED
METER MOUNTING DEVICE:TRANSFORMER RATED SOCKET (INSTRUMENT TRANSFORMERS IN SWITCHBOARD COMPARTMENT)
LOCATION: INDOOR
SERVICE SIZE: ≤800A AND >800A PER TABLE II & IV
VOLTAGE: 1 PH-120/240V, 2 PH-120/208V (NETWORK), 3 PH-120/208V, 3 PH-347/600V, 600V (DELTA)
MAIN SERVICE BOX LOCATION: LINE SIDE OF REVENUE METERING EQUIPMENT
APPLICATION: MULTI - RESIDENTIAL, NON - RESIDENTIAL, MIXED USE

DIAGRAM #4 SWITCHBOARD - REMOTELY INTERROGATED METERING (RIMS) WITH APPROVED TRANSFORMER RATED METER SOCKET (NON-TOTALIZED) STANDARD CONFIGURATION	1/1



REQUIREMENTS:

1. METER CABINET - MIN. 915 mm X 915 mm X 305 mm (36" x 36" x 12") METER CABINET WITH METAL PADLOCK HASP(S) IN ACCORDANCE WITH APPLICABLE REQUIREMENTS AND BONDED AS PER OESC.

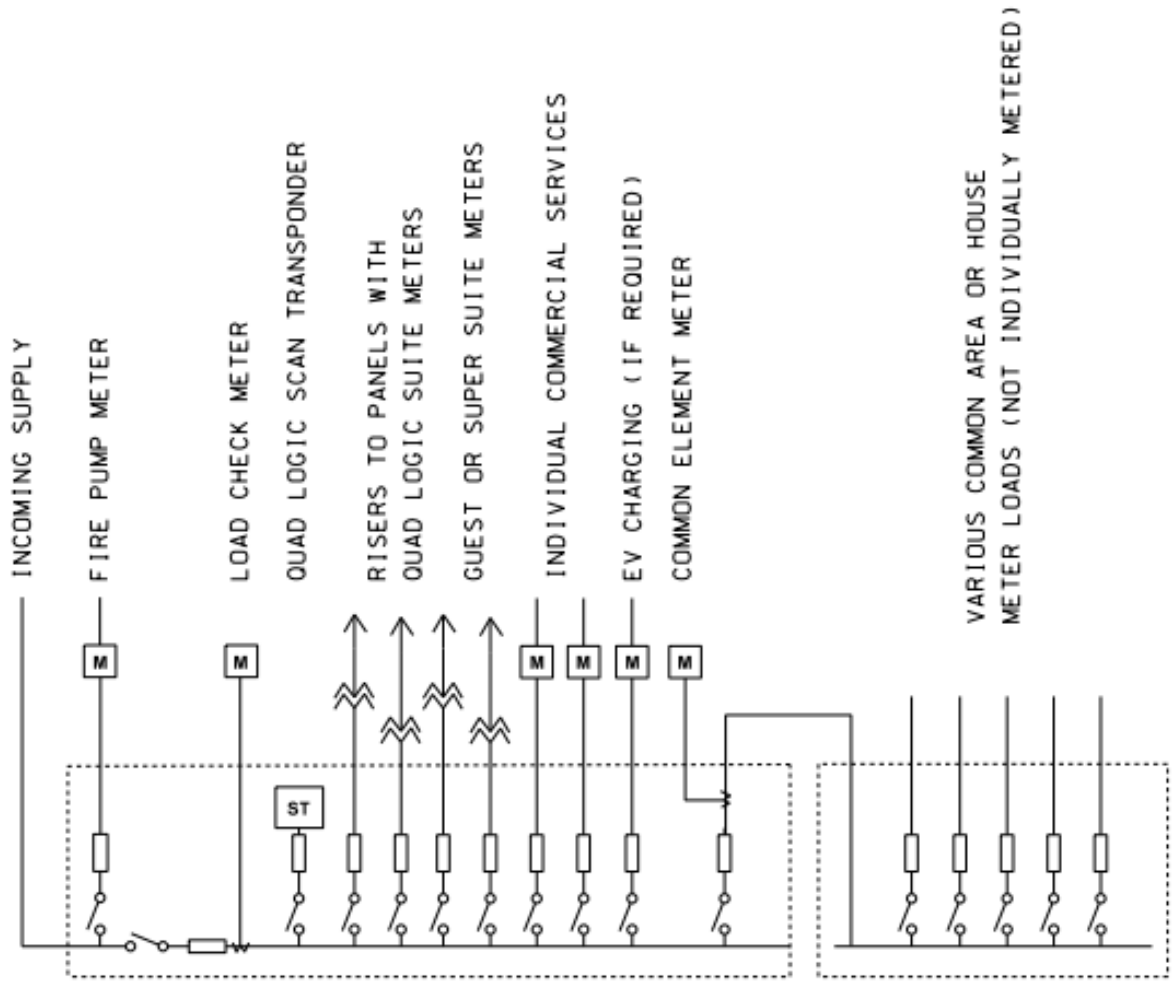
2. METER CONDUIT - 51 mm (2") CONDUIT. LB CONDUIT FITTING NOT PERMITTED. CONTINUOUS FROM THE METER INSTRUMENT TRANSFORMERS TO THE METER CABINET. MAXIMUM OF THREE 90 DEGREE BENDS. MAXIMUM CONDUIT LENGTH IS 30 m (100").

3. IN LOCATIONS WHERE CELLULAR COMMUNICATION IS UNABLE TO CONNECT (TYPICALLY UNDERGROUND). THE CUSTOMER WILL NEED TO PROVIDE A 19 mm (3/4") CONDUIT TO AN ABOVE GROUND LOCATION THAT HAS BEEN TESTED WITH A CELL RECEPTION OF BETTER THAN -80 dBm. THE CONDUIT LENGTH CAN'T BE LONGER THAN 21 METRES. CLEARANCE AROUND THE END POINT OF THE CONDUIT MUST BE MINIMUM 1 METRE.

4. PUC/SWITCHBOARD COMPARTMENT - HOUSING THE REVENUE METERING INSTRUMENT TRANSFORMERS. THE METER CONDUIT IS TO EXTEND CONTINUOUSLY FROM THIS COMPARTMENT TO THE METER CABINET. SEE ITEM 2 ABOVE FOR METER CONDUIT REQUIREMENTS.

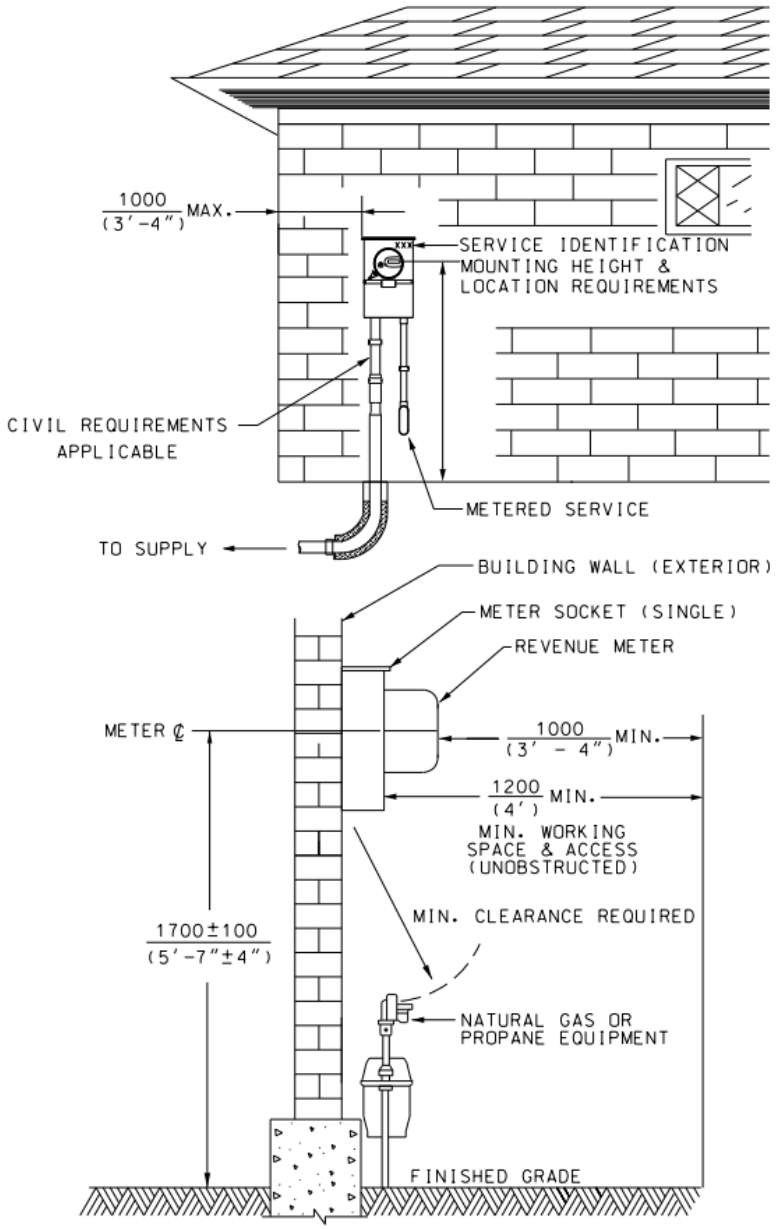
METER TYPE: TRANSFORMER RATED
METER MOUNTING DEVICE: METER CABINET (INSTRUMENT TRANSFORMERS IN SWITCHBOARD COMPARTMENT)
LOCATION: INDOOR
SERVICE SIZE: ≤800A AND >800 PER TABLE II & IV
VOLTAGE: 1 PH-120/240V, 2 PH-120/208V (NETWORK), 3 PH-120/208V, 3 PH-347/600V, 600V (DELTA)
MAIN SERVICE BOX LOCATION: LINE SIDE OF REVENUE METERING EQUIPMENT
APPLICATION: MULTI - RESIDENTIAL, NON - RESIDENTIAL, MIXED USE

DIAGRAM #5 SWITCHBOARD - REMOTELY INTERROGATED METERING (RIMS) WITH METER CABINET (NON-TOTALIZED)	1/1



TYPICAL LAYOUT/SINGLE LINE DIAGRAM

DIAGRAM #6 SWITCHBOARD - MULTI-RESIDENTIAL BUILDINGS WITH SUB-METERING	1/1

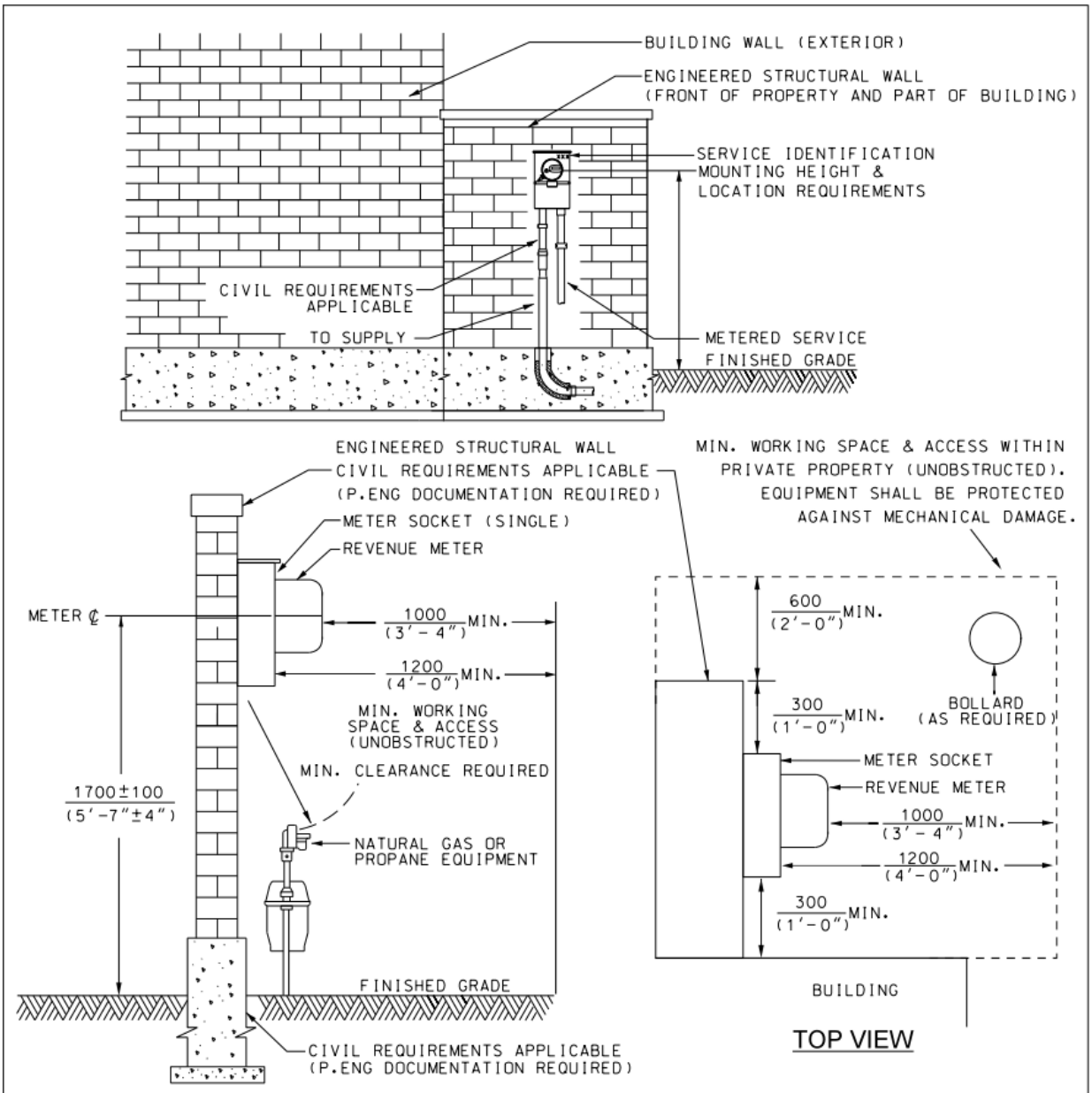


METER TYPE: (A) TRANSFORMER RATED OR (B) SELF CONTAINED (200 A OR LESS)
METER MOUNTING DEVICE: (A) TRANSFORMER RATED - 400 A (INTEGRAL CT 300:5) OR (B) SELF CONTAINED METER SOCKET (SINGLE)
LOCATION: OUTDOOR
SERVICE SIZE:(A) 400A OR (B) UP TO 200A
VOLTAGE: 1 PH-120/240V, 2 PH-120/208V (NETWORK)
MAIN SERVICE BOX LOCATION: LOAD SIDE OF METER
APPLICATION: RESIDENTIAL (1 METER)

DIAGRAM #7

METER SOCKET - SINGLE POSITION
STANDARD CONFIGURATION

1/1

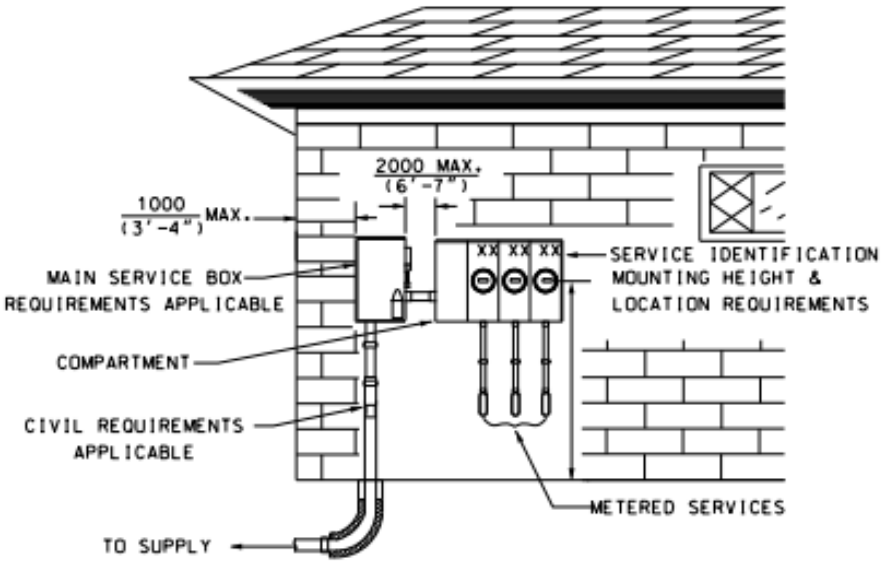


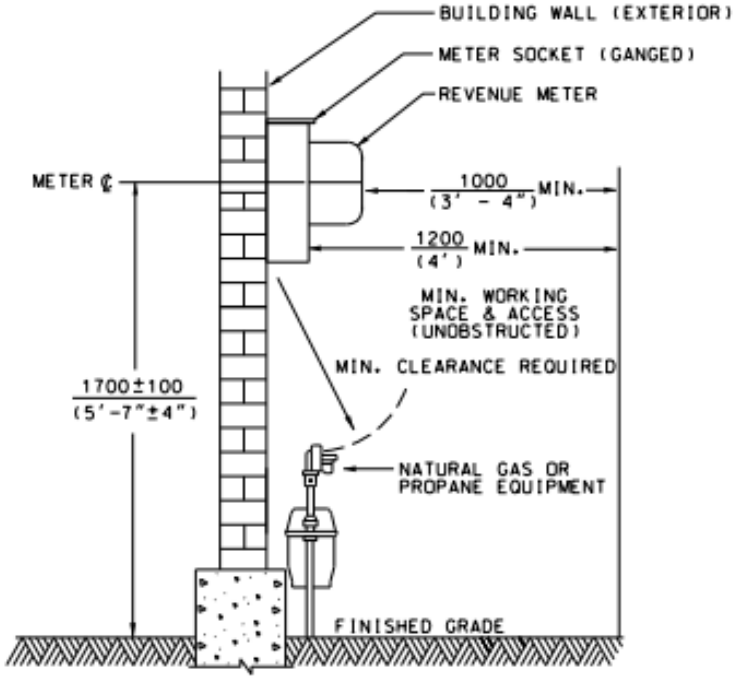
METER TYPE: (A) TRANSFORMER RATED OR (B) SELF CONTAINED (200 A OR LESS)
METER MOUNTING DEVICE: (A) TRANSFORMER RATED - 400 A (INTEGRAL CT 300:5) OR
(B) SELF CONTAINED METER SOCKET (SINGLE)
LOCATION: OUTDOOR ENGINEERED STRUCTURAL WALL (FRONT OF PROPERTY AND PART OF BUILDING)
SERVICE SIZE:(A) 400A OR (B) UP TO 200A
VOLTAGE: 1 PH-120/240V, 2 PH-120/208V (NETWORK)
MAIN SERVICE BOX LOCATION: LOAD SIDE OF METER
APPLICATION: RESIDENTIAL (1 METER)

DIAGRAM #7B

METER SOCKET - SINGLE POSITION ON ENGINEERED STRUCTURAL WALL
STANDARD CONFIGURATION

1/1



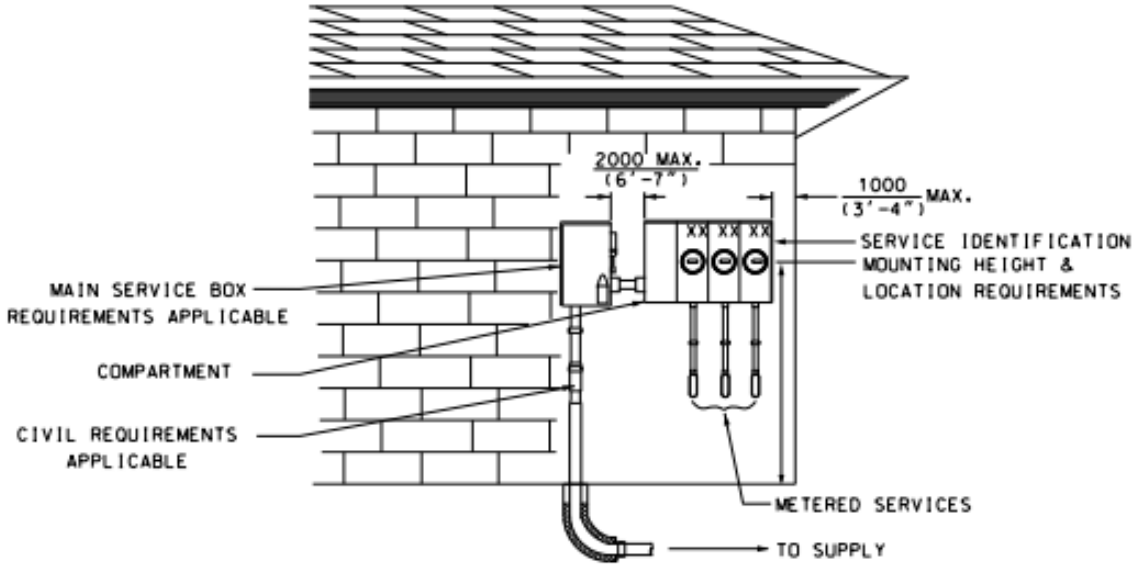


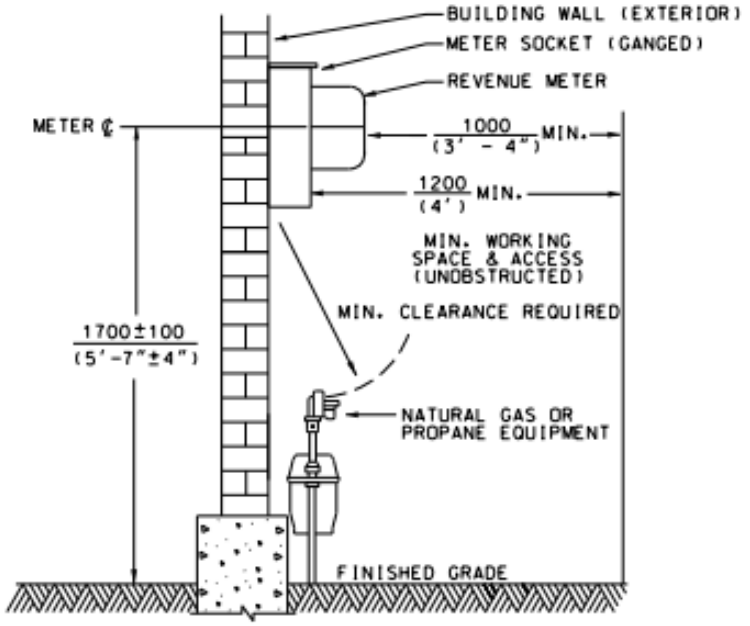
METER TYPE: SELF CONTAINED (200A OR LESS)
METER MOUNTING DEVICE: SELF CONTAINED METER SOCKET - MULTIPLE POSITION (GANGED)
LOCATION: OUTDOOR
SERVICE SIZE: 200 A OR 400 A
VOLTAGE: 1 PH-120/240V, 2 PH-120/208V (NETWORK)
MAIN SERVICE BOX LOCATION: LOAD OR LINE SIDE OF METER (AS REQUIRED)
APPLICATION: RESIDENTIAL (UP TO 6 METERS)

DIAGRAM #8

METER SOCKET - MULTIPLE POSITION (GANGED)
STANDARD CONFIGURATION

1/2



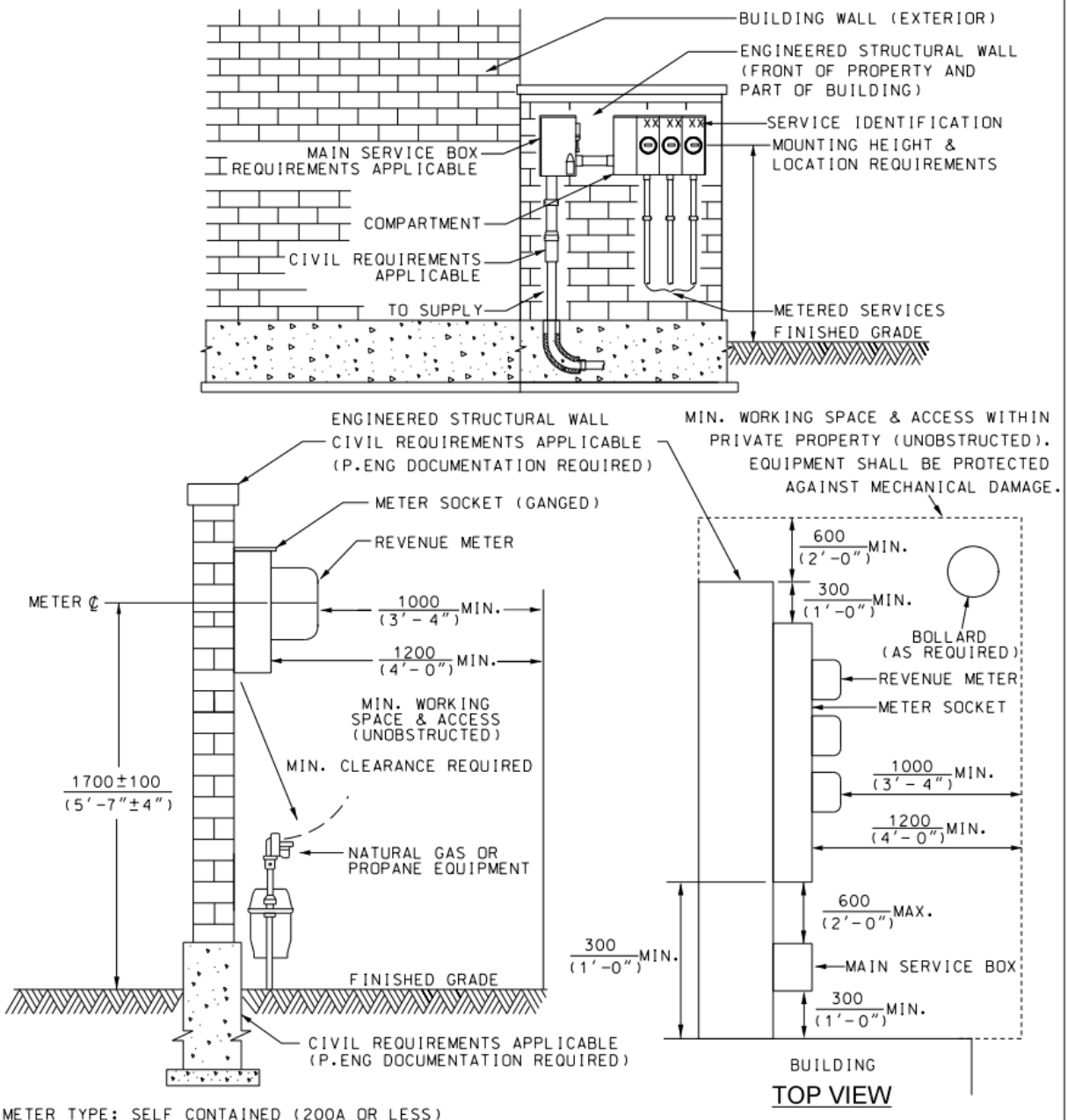


METER TYPE: SELF CONTAINED (200A OR LESS)
METER MOUNTING DEVICE: SELF CONTAINED METER SOCKET - MULTIPLE POSITION (GANGED)
LOCATION: OUTDOOR
SERVICE SIZE: 200 A OR 400 A
VOLTAGE: 1 PH-120/240V. 2 PH-120/208V (NETWORK)
MAIN SERVICE BOX LOCATION: LOAD OR LINE SIDE OF METER (AS REQUIRED)
APPLICATION: RESIDENTIAL (UP TO 6 METERS)

DIAGRAM #8

METER SOCKET - MULTIPLE POSITION (GANGED)
STANDARD CONFIGURATION

2/2

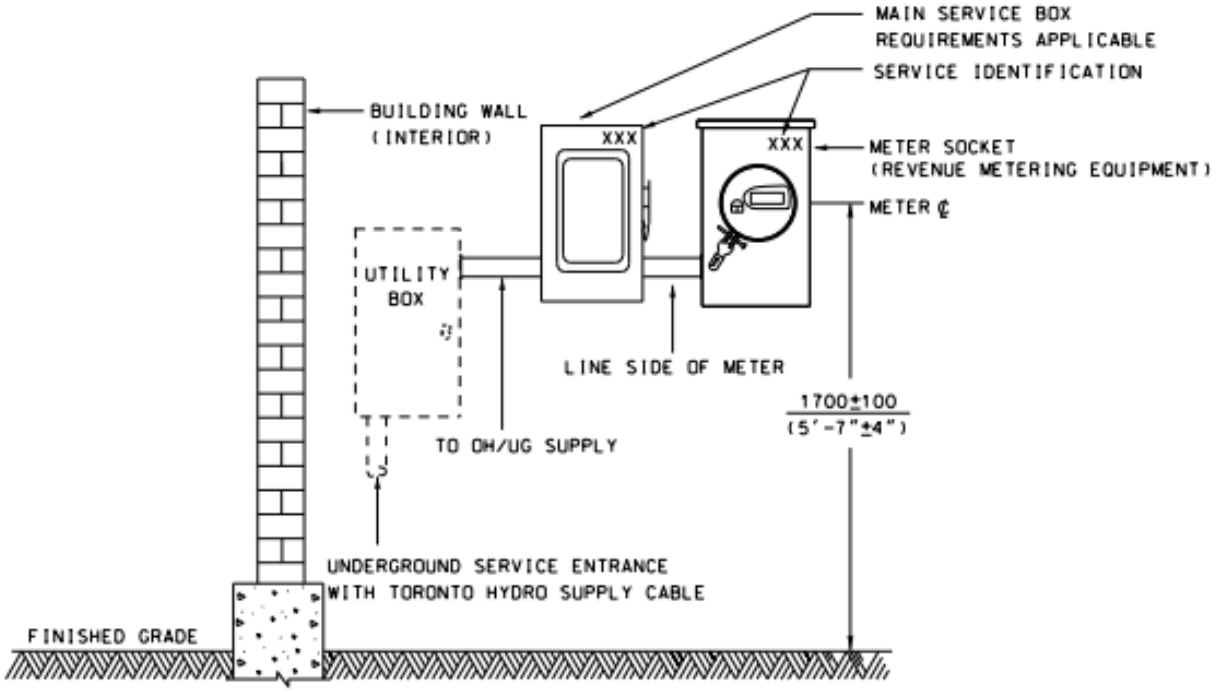


METER TYPE: SELF CONTAINED (200A OR LESS)
METER MOUNTING DEVICE: SELF CONTAINED METER SOCKET – MULTIPLE POSITION (GANGED)
LOCATION: OUTDOOR ENGINEERED STRUCTURAL WALL (FRONT OF PROPERTY AND PART OF BUILDING)
SERVICE SIZE: 200 A OR 400 A
VOLTAGE: 1 PH-120/240V, 2 PH-120/208V (NETWORK)
MAIN SERVICE BOX LOCATION: LOAD OR LINE SIDE OF METER (AS REQUIRED)
APPLICATION: RESIDENTIAL (UP TO 6 METERS)

DIAGRAM #8B

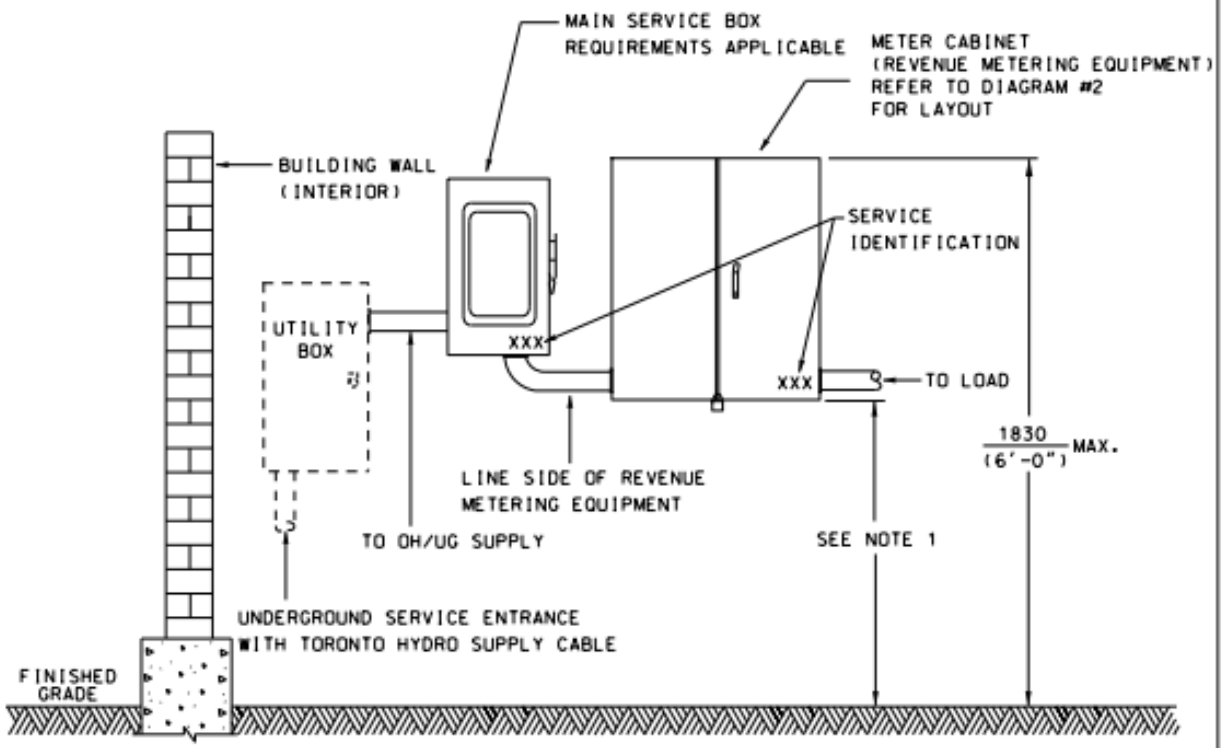
METER SOCKET - MULTIPLE POSITION (GANGED) ON ENGINEERED STRUCTURAL WALL STANDARD CONFIGURATION

1/1



METER TYPE: SELF CONTAINED (200A OR LESS)
METER MOUNTING DEVICE: SELF CONTAINED METER SOCKET
LOCATION: INDOOR
SERVICE SIZE: 200A
VOLTAGE: 1 PH-120/240V, 2 PH-120/208V (NETWORK), 3 PH-120/208V, 3 PH-347/600V, 600V (DELTA)
MAIN SERVICE BOX LOCATION: LINE SIDE OF METER
APPLICATION: MULTI - RESIDENTIAL, NON - RESIDENTIAL, MIXED USE (1 METER)

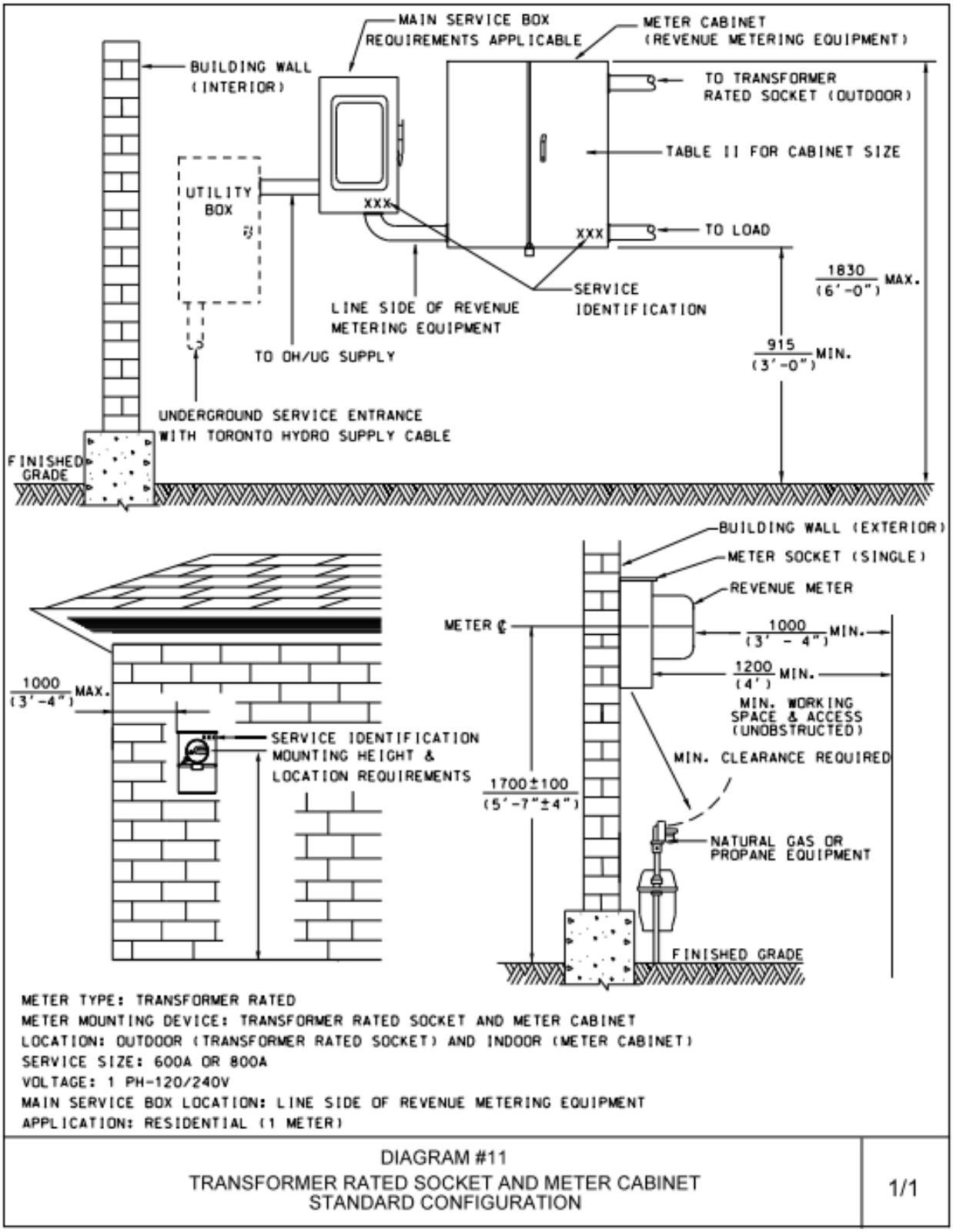
DIAGRAM #9 METER SOCKET - MAIN SERVICE BOX STANDARD CONFIGURATION	1/1



NOTE:
1) MINIMUM DISTANCE FROM FINISHED FLOOR TO BASE OF CABINETS SHALL BE:
- 915 mm (3' - 0") FOR 915 X 915 X 305 mm (36" x 36" x 12") METER CABINET
- 610 mm (2' - 0") FOR 1219 x1219 x 305 mm (48" x 48" x 12") METER CABINET
REFER TO TABLE III FOR CABINET SIZING.

METER TYPE: TRANSFORMER RATED
METER MOUNTING DEVICE: METER CABINET
LOCATION: INDOOR
SERVICE SIZE: >200A - 800A PER TABLE III
VOLTAGE: 1 PH-120/240V, 2 PH-120/208V (NETWORK), 3 PH-120/208V, 3 PH-347/600V, 600V (DELTA)
MAIN SERVICE BOX LOCATION: LINE SIDE OF REVENUE METERING EQUIPMENT
APPLICATION: MULTI - RESIDENTIAL, NON - RESIDENTIAL, MIXED USE (1 METER)

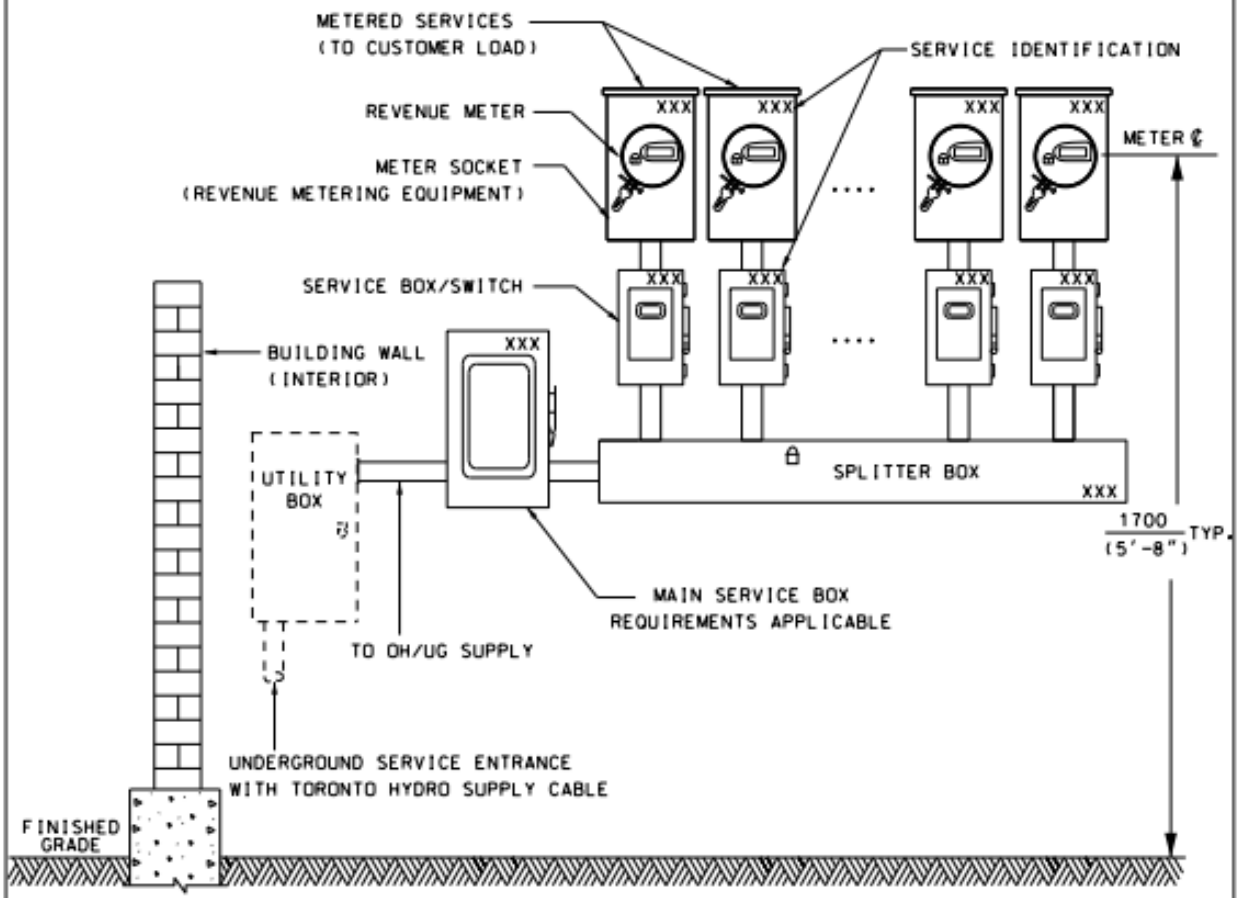
DIAGRAM #10 METER CABINET FOR METER, INSTRUMENT TRANSFORMERS AND ASSOCIATED EQUIPMENT STANDARD CONFIGURATION	1/1



METER TYPE: TRANSFORMER RATED
METER MOUNTING DEVICE: TRANSFORMER RATED SOCKET AND METER CABINET
LOCATION: OUTDOOR (TRANSFORMER RATED SOCKET) AND INDOOR (METER CABINET)
SERVICE SIZE: 600A OR 800A
VOLTAGE: 1 PH-120/240V
MAIN SERVICE BOX LOCATION: LINE SIDE OF REVENUE METERING EQUIPMENT
APPLICATION: RESIDENTIAL (1 METER)

DIAGRAM #11
TRANSFORMER RATED SOCKET AND METER CABINET
STANDARD CONFIGURATION

1/1

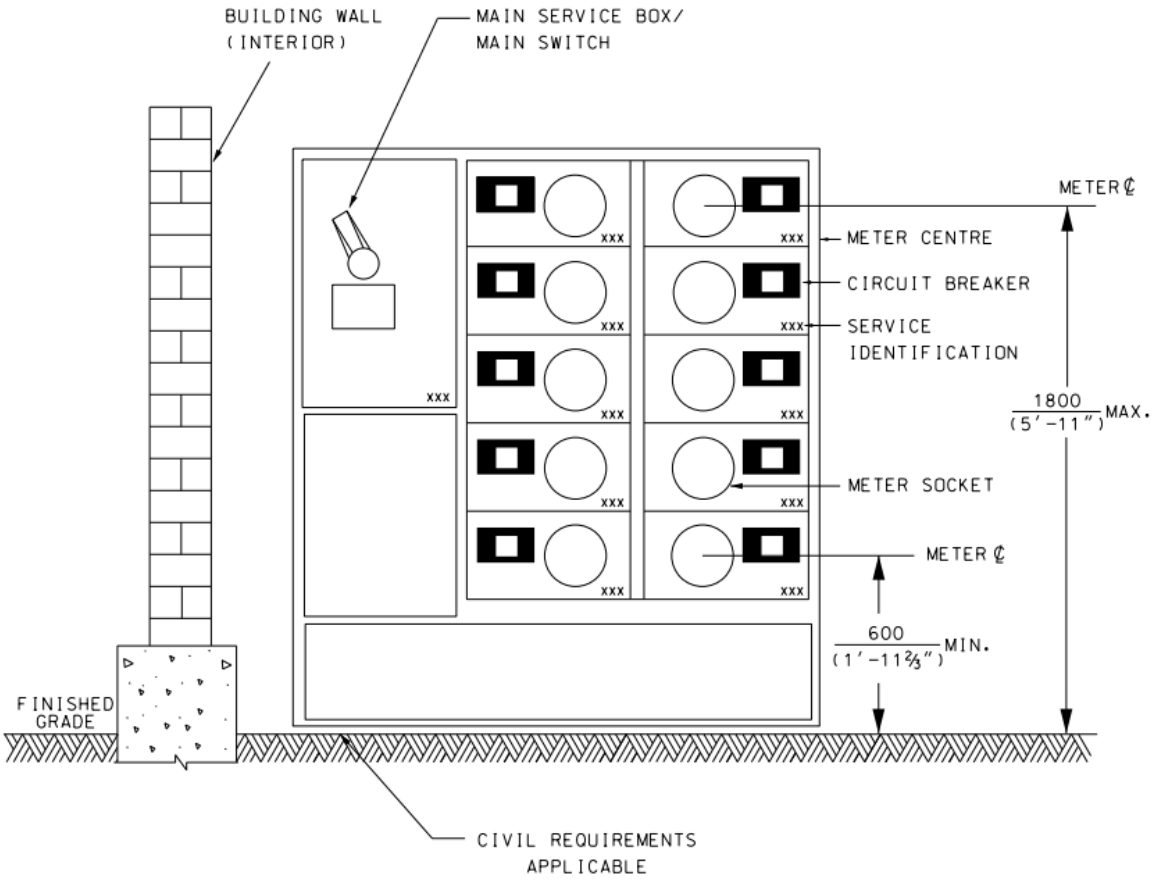


METER TYPE: SELF CONTAINED (200A OR LESS)
METER MOUNTING DEVICE: SELF CONTAINED METER SOCKET WITH SPLITTER BOX
LOCATION: INDOOR
SERVICE SIZE: ≤800A
VOLTAGE: 1 PH-120/240V, 2 PH-120/208V (NETWORK), 3 PH-120/208V, 3 PH-347/600V, 600V (DELTA)
MAIN SERVICE BOX LOCATION: LINE SIDE OF METERS
APPLICATION: RESIDENTIAL (>6 METERS), MULTI - RESIDENTIAL, NON - RESIDENTIAL, MIXED USE

DIAGRAM #12

METER SOCKETS WITH SPLITTER BOX
STANDARD CONFIGURATION

1/1

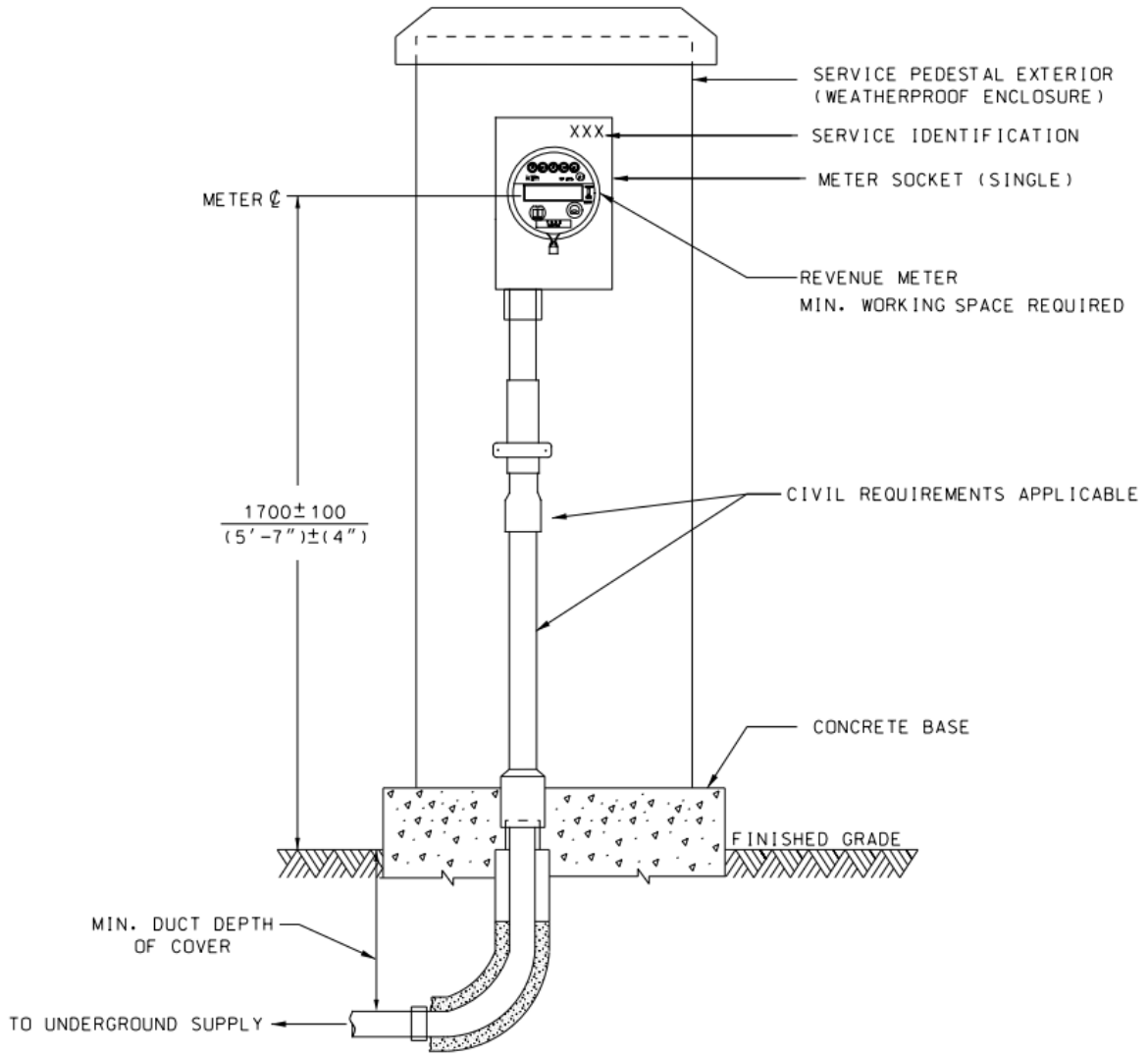


METER TYPE: SELF CONTAINED (200A OR LESS)
METER MOUNTING DEVICE: METER CENTRE WITH SELF CONTAINED METER SOCKET
LOCATION: INDOOR
SERVICE SIZE: ≤800A
VOLTAGE: 1 PH-120/240V, 2 PH-120/208V (NETWORK), 3 PH-120/208V, 3 PH-347/600V, 600V (DELTA)
MAIN SERVICE BOX LOCATION: LINE SIDE OF METERS
APPLICATION: RESIDENTIAL (>6 METERS), MULTI - RESIDENTIAL, NON - RESIDENTIAL, MIXED USE
(UP TO 23 METERS)

DIAGRAM #13

METER CENTRE
STANDARD CONFIGURATION

1/1

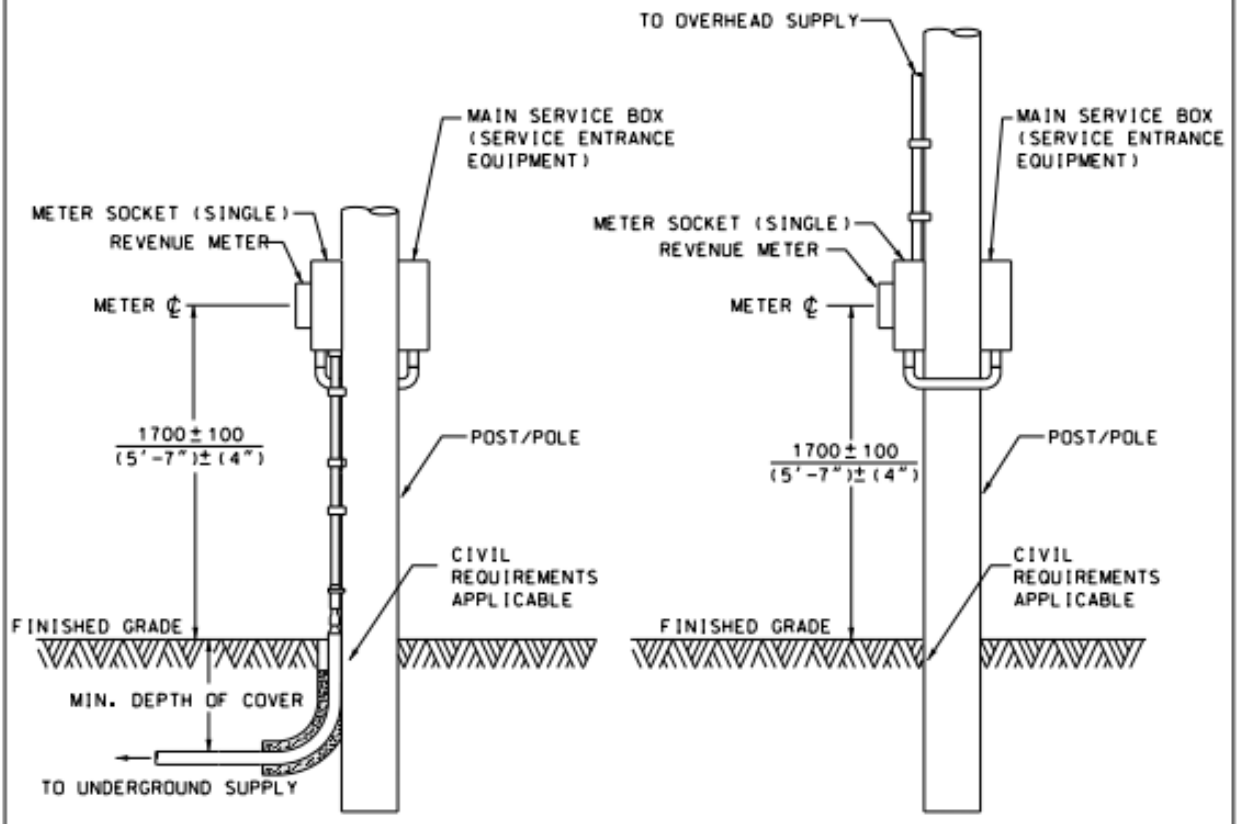


METER TYPE: SELF CONTAINED (200A OR LESS)
METER MOUNTING DEVICE: SELF CONTAINED METER SOCKET WITH SERVICE PEDESTAL
LOCATION: OUTDOOR SERVICE PEDESTAL
SERVICE SIZE: UP TO 200A
VOLTAGE: 1 PH-120/240V, 2 PH-120/208V (NETWORK)
MAIN SERVICE BOX LOCATION: LOAD SIDE OF METER
APPLICATION: PARKS AND UTILITIES (1 METER)

DIAGRAM #14

METER SOCKET - SERVICE PEDESTAL
STANDARD CONFIGURATION

1/1

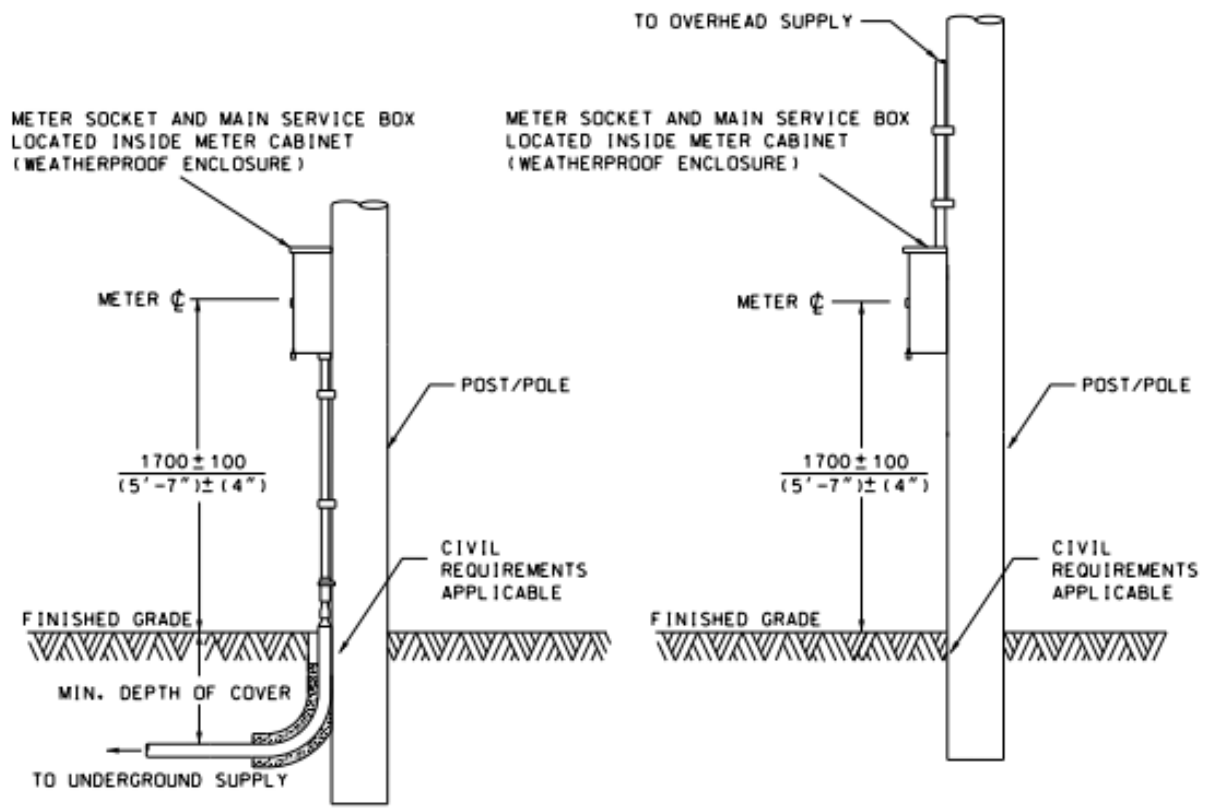


METER TYPE: SELF CONTAINED (200A OR LESS)
METER MOUNTING DEVICE: SELF CONTAINED METER SOCKET
LOCATION: OUTDOOR POLE/POST
SERVICE SIZE: UP TO 200A
VOLTAGE: 1 PH-120/240V, 2 PH-120/208V (NETWORK)
MAIN SERVICE BOX LOCATION: LOAD SIDE OF METER
APPLICATION: TEMPORARY SERVICE (1 METER)

DIAGRAM #15

METER SOCKET - OUTDOOR POLE/POST
STANDARD CONFIGURATION

1/1

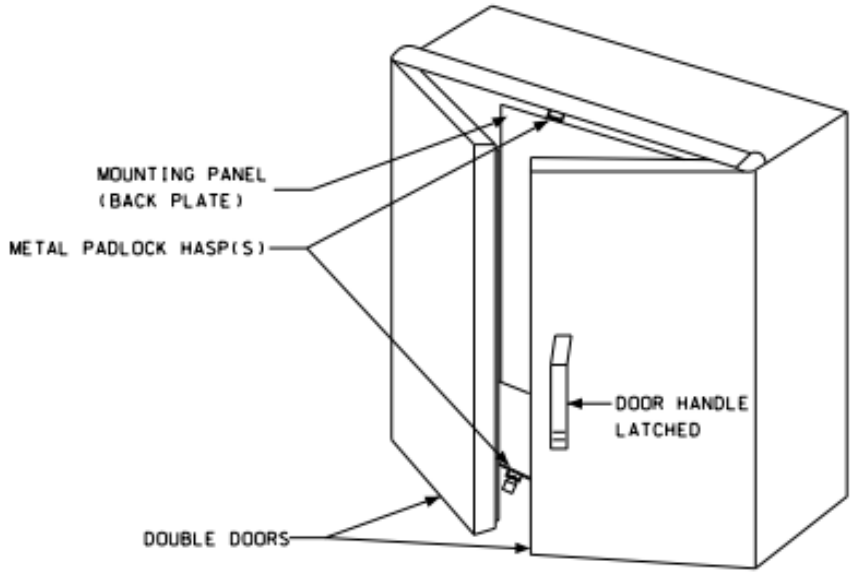


METER TYPE: SELF CONTAINED (200A OR LESS)
METER MOUNTING DEVICE: SELF CONTAINED METER SOCKET WITH METER CABINET
LOCATION: OUTDOOR POLE/POST
SERVICE SIZE: UP TO 200A
VOLTAGE: 3 PH-120/208V, 3 PH-347/600V
MAIN SERVICE BOX LOCATION: LINE SIDE OF METER
APPLICATION: TEMPORARY SERVICE (1 METER)

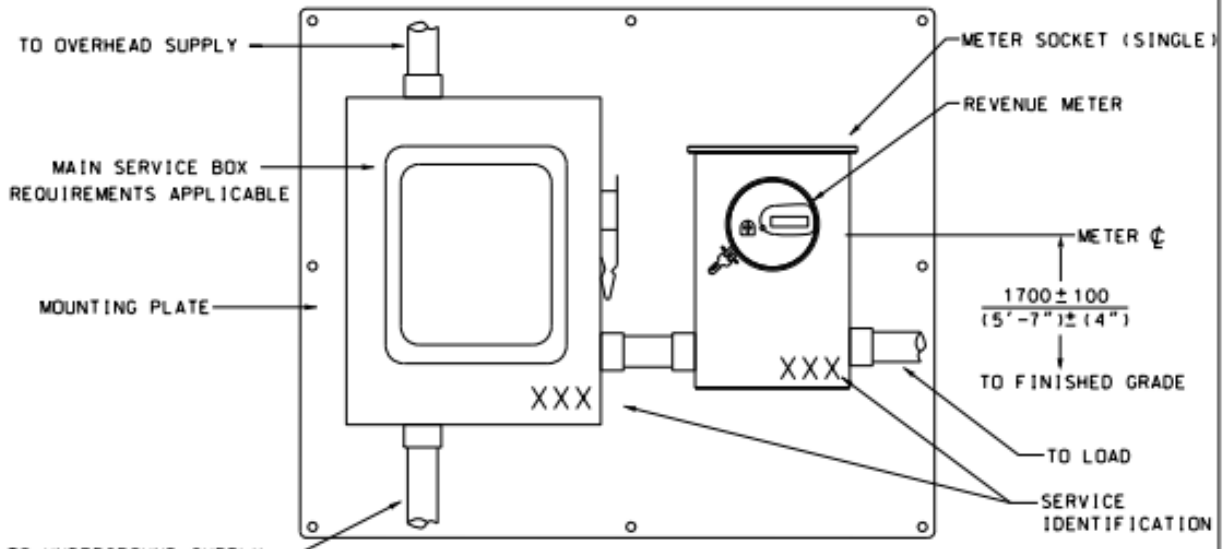
DIAGRAM #16

METER SOCKET WITH METER CABINET - OUTDOOR POLE/POST
STANDARD CONFIGURATION

1/2



TYPICAL - METER CABINET



INTERIOR LAYOUT

METER TYPE: SELF CONTAINED (200A OR LESS)
METER MOUNTING DEVICE: SELF CONTAINED METER SOCKET WITH METER CABINET
LOCATION: OUTDOOR POLE/POST
SERVICE SIZE: UP TO 200A
VOLTAGE: 3 PH-120/208V, 3 PH-347/600V
MAIN SERVICE BOX LOCATION: LINE SIDE OF METER
APPLICATION: TEMPORARY SERVICE (1 METER)

DIAGRAM #16

METER SOCKET WITH METER CABINET - OUTDOOR POLE/POST
STANDARD CONFIGURATION

2/2