

PART 1 - GENERAL

- 1.1 REFERENCES
- .1 Canada Green Building Council (CaGBC)
 - .1 LEED Canada-NC-2009, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.
 - .2 CSA Group
 - .1 CSA C22.2 No.31-10, Switchgear Assemblies.
- 1.2 ACTION AND INFORMATIONAL SUBMITTALS
- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for service entrance board and include product characteristics, performance criteria, physical size, finish and limitations.
 - .3 Shop Drawings:
 - .1 Submit drawings in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Indicate on drawings:
 - .1 Floor anchoring method and foundation template.
 - .2 Overall length, height and depth.
 - .4 Sustainable Design Submittals:
 - .1 LEED Canada submittals: in accordance with Section 01 35 21 - LEED Requirements.
 - .2 Construction Waste Management:
 - .1 Submit project Waste Management Plan highlighting recycling and salvage requirements.
 - .2 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 75 % of construction wastes were recycled or salvaged.
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- 1.3 MAINTENANCE MATERIAL SUBMITTALS .1 Extra Materials:
.1 Submit maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.
- 1.4 CLOSEOUT SUBMITTALS .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
.2 Operation and Maintenance Data: submit operation and maintenance data for service entrance board for incorporation into manual.
.3 Submit two (2) copies of operation and maintenance manual.
- 1.5 DELIVERY, STORAGE AND HANDLING .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
.2 Develop Construction Waste Management Plan related to Work of this Section and in accordance with Section 01 35 21 - LEED Requirements.
.3 Packaging Waste Management: remove for reuse or return of pallets, crates, padding, banding, and packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Section 01 35 21 - LEED Requirements.
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PART 2 - PRODUCTS

2.1 SERVICE
ENTRANCE BOARD

- .1 Service Entrance Board: to CSA C22.2 No.31.
- .2 Main Breaker Rating: 347/600 V, 3 phase, 4 wire, 400 A, rated for 100% with electronic trip short circuit current 22 kA (rms symmetrical).
- .3 Cubicles: free standing, dead front, size as indicated.
- .4 Barrier metering section from adjoining Sections.
- .5 CTs and PTs for owner metering.
- .6 Provision for installation of power supply authority metering in barriered Section.
- .7 Hinged access panels with captive knurled thumb screws.
- .8 Bus bars and main connections: aluminum.
- .9 Bus from load terminals of main breaker via metering section to main lugs of distribution section.
- .10 Identify phases with colour coding.

2.2 GROUNDING

- .1 Copper ground bus extending full width of cubicles and located at bottom.
- .2 Lugs at each end for grounding cable size as indicated.

2.3 POWER SUPPLY
AUTHORITY METERING

- .1 Separate compartment and metal raceway for exclusive use of power supply authority metering.
 - .2 Mounting accessories and wiring for metering supplied by power supply authority.
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- 2.4 OWNERS METERING .1 Digital unit with capability to display:
- .1 Phase currents.
 - .2 Voltage, L-L, L-N for each phase.
 - .3 System and per-phase power including watts, vars and VA.
 - .4 System energy including watthours, varhours and VA hours.
 - .5 System demand including watt demand, VA demand and var demand.
 - .6 Apparent and displacement power factor.
 - .7 Frequency.
 - .8 Recorded minimums and maximums of most parameters.
- .2 Other features:
- .1 Operator programmed using the face plate keypad or via communications.
 - .2 4 line x 20 character back lit LCD display.
 - .3 All monitored parameters are available at the faceplate. True rms metering of distorted currents and voltages up to the 31st harmonic.
 - .4 CSA listed under CSA C22.2 #1010.1.
 - .5 Current and potential transformers as required.
- .3 Install metering units at "eye level" so that elevating devices are not required to read and use the meter.
- .4 Customer meter to have communications output via CAT6 cable and include the communications protocol to match the electrical metering software.
- .5 Service entrance board shall include a 3 Pole 15A circuit breaker or other means to provide voltage connections for the Owner's Metering.
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- 2.5 FINISHES .1 Apply finishes in accordance with Section 26 05 00 - Common Work Results for Electrical.
- .1 Service entrance board exterior: gray.
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- 2.6 EQUIPMENT IDENTIFICATION
- .1 Provide equipment identification in accordance with Section 26 05 00 - Common Work Results for Electrical.
 - .2 Nameplates:
 - .1 White plate, black letters, size 7.
 - .2 Complete board labelled: 347/600 V."
 - .3 Main disconnect labelled: "Main Breaker".

PART 3 - EXECUTION

- 3.1 INSTALLATION
- .1 Locate service entrance board and fasten to wall.
 - .2 Connect main secondary service to line terminals of main breaker.
 - .3 Connect feeders to load terminals of distribution breaker's.
 - .4 Check factory made connections for mechanical security and electrical continuity.
 - .5 Run one grounding conductor 4/0 AWG bare copper in 27 mm conduit from ground bus to building ground.
 - .6 Check trip unit settings against co-ordination study to ensure proper working and protection of components.
- 3.2 CLEANING
- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
 - .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition

3.2 CLEANING
(Cont'd)

- .3 Waste Management: (Cont'd)
Waste Management and Disposal and Section
01 35 21 - LEED Requirements.
.1 Remove recycling containers and bins
from site and dispose of materials at
appropriate facility.