

1. General
 1. This Section describes the requirements for the Division 16 reinstallation of existing electrical work and the supply and installation of new conduits, wiring and associated work.
2. Related Work
 - .1 See Section 31 11 00, Site Work Demolition and Removal for related requirements regarding removal of existing electrical work (poles, conduits, wiring, etc.).
3. Codes and Standards
 - .1 Do complete installation in accordance with CSA C22.1-02 except where specified otherwise.
 - .2 Do overhead and underground systems in accordance with CSA C22.3 No. 1-M1979 except where specified otherwise.
 - .3 Abbreviations for electrical terms: to CSA Z85-1983.
4. Measurement for Payment
 - .1 Electrical work covered under this section and shown on plan will be measured in accordance with Section 01 29 00.
5. Inspection of Existing Electrical Work
 - .1 Prior to tender submission, the Contractor will visit the site and make himself totally familiar with the current condition of the existing electrical work, the extent and types of facilities now servicing the wharf, the size of existing wires and conduits, panels etc. and its compliance to code specified herein.
 - .2 This examination will confirm what will be required in the new work to suit existing services.
6. Removal of Existing Electrical System
 - .1 See Section 31 11 00 for requirements. Replace with new material items that require replacement due;

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- .1 to non-compliance to codes if any;
 - .2 current quantities are insufficient to meet new requirements;
 - .3 damages as a result of removal;
 - .4 incompatibility with the new work.
- 7. Notices
 - .1 The Contractor will advise the Canadian Coast Guard when power is disconnected to a navigational light.
- 8. Temporary Services
 - .1 The Contractor will provide temporary power and lighting services for the duration of the interruption in services to the wharf.
 - .2 Temporary services will include services which currently exists at the wharf including a navigational light. Submit proposal to *Departmental Representative* for approval.
 - .3 The Canadian Coast Guard is presently considering a solar power system for the navigational light. If this option gets approval temporary power to the light and the installation of a new 25 mm conduit in the deck will not be required. If approved, the Contractor will provide, at the time of this change, a credit to the Contract for services and materials not yet provided.
- 9. Care, Operation and Start-Up
 - .1 Instruct *Departmental Representative* and Operating Personnel in the operation, care and maintenance of equipment.
- 10 Permits, Fees and Inspection
 - .1 Submit to Electrical Inspection Authority and Supply Authority necessary number of drawings and specifications for examination and approval prior to commencement of work.
 - .2 Pay associated fees.
 - .3 *Departmental Representative* will provide drawings and specifications required by Electrical Inspection Authority and Supply Authority at no cost.

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- .4 Furnish Certificates of Authority Acceptance from Electrical Inspection on completion of work to Departmental Representative.
11. Materials and Equipment
1. Provide materials and equipment in accordance with **Section 01 61 00** - Material and Equipment.
- .2 Equipment and material to be CSA certified. Where there is no alternative to supplying equipment which is not CSA certified, obtain special approval from Electrical Inspection Department.
12. Wiring Identification
- .1 Identify wiring with permanent indelible identifying markings, either numbered or coloured plastic tapes, on both ends of phase conductors of feeders and branch circuit wiring.
- .2 Maintain phase sequence and colour coding throughout.
- .3 Colour code: to CSA C22.1-02.
13. Wiring Terminations
- .1 Lugs, terminals, screws used for termination of wiring to be suitable for either copper or aluminum conductors.
14. Manufacturers and CSA Labels
- .1 Visible and legible after equipment is installed.
15. Warning Signs
- .1 As specified and to meet requirements of Electrical Inspection Department and *Departmental Representative*.
- .2 Decal, signs, minimum size 175 X 250 mm.
16. Load Balance
- .1 Measure phase current to panel boards with normal loads operating at time of acceptance. Adjust branch circuit connections as required to obtain best balance of current between phases and record changes.
- .2 Submit, at completion of work, report listing phase and neutral currents on panelboards,

operating under normal load. State hour and date on which each load was measured, and voltage at time of test.

17. Power Poles

- .1 Secure power poles to structure as shown on plan. Minimum 3 - 25mm diameter machine bolts fastening to new wales. All bolts countersunk at the pole face.