

**PUBLIC WORKS AND
GOVERNMENT SERVICES CANADA
ASSET AND FACILITIES MANAGEMENT SERVICES
ELECTRICAL
STANDING OFFER AGREEMENT**

Description: Standing Offer - Electrical

Location: St. John's Area

INDEX

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The following definitions apply to the work to be directed by the Departmental Representative.

<u>Add</u>	Make an addition to.
<u>Adjust</u>	Bring components to a more effective relative position.
<u>Assemble</u>	To take apart and put together again.
<u>Balance Load</u>	To balance the three (3) phase and single phase circuits which enter (or leave) the main switchboards, transformers and distribution panel boards, by calculating new and existing loads accordingly.
<u>Breakdown Maintenance</u>	To perform repairs to damaged equipment due to failures.
<u>Clean</u>	Scrape, brush, flush and vacuum as required to remove dust, dirt and foreign matter.
<u>Check / Inspect</u>	View closely for dirt, foreign substance, lack of lubricant, wear, damage, tightness, tension, alignment, leaks, cracks, spalling, deformation, overloading and settings. Make a critical appraisal of equipment, component and parts' ability to fulfil their function to a high degree of efficiency.
<u>Energy Source</u>	Any electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other source of energy of potential harm to workers.
<u>Hot Work</u>	Hot Work includes any welding, cutting of material by use of torch or other open flame devices and grinding which produces sparks.
<u>Instruct</u>	Inform Departmental Representative of any new operating procedures. Demonstrate and explain purpose, benefit and method of implementing new procedures.
<u>Isolate</u>	To physically prevent the transmission or release of an energy source to machinery or equipment.
<u>Lubricate</u>	Apply oil or grease to joints between moving parts and joints between fixed and moving parts.
<u>Measure</u>	Determine capacity or amount in standard units using an appropriate instrument. Measure condenser and evaporator pressure drop with differential pressure meter or "U" tube manometer. Measure motor overload with instrument approved by overload manufacturer.
<u>Paint</u>	Clean, prepare and paint surfaces to paint manufacturer's recommendations with paint and primer recommended by paint manufacturer for applicable surface and use.
<u>Predictive Maintenance</u>	To perform required repairs that have been declared in advance, on the basis of observation, experience and/or scientific reasons.

<u>Preventative Maintenance</u>	To inspect, test and re-condition a system, in order to prevent failures, at regularly scheduled intervals in accordance with specific instructions.
<u>Probe</u>	Operate and determine if operation produces intended response.
<u>Remove</u>	Take off or away from.
<u>Repack</u>	Fill with packing again.
<u>Repair</u>	Restore to a sound state.
<u>Replace</u>	Restore by removing old components and replacing with new components.
<u>Report</u>	To Departmental Representative on-site and include in work report, results of inspection and proving, note problems encountered, services required, services performed and readings taken.
<u>Shut Down</u>	Take out of service.
<u>Start Up</u>	Return to service.
<u>Tighten</u>	Securely fix in place.
<u>Treat</u>	Act upon with agent.

- .5 If more than one service person is required for the completion of a service call, a written explanation shall be forwarded with the Contractor's invoice.
- 4. Contractor's Responsibilities**
- .1 The Contractor will advise the Departmental Representative of the telephone number at which he/she or his/her representative may be contacted at any time.
- .2 The Contractor shall not refuse any call for service requested by a Departmental Representative and the time lapse between call out and start of work shall be as per Item 3 of this section.
- .3 Contractor prior to commencement of work, shall report to the commissioners desk to log in.
- .4 The Contractor shall contact the Departmental Representative on the first working day following and "after normal working hours" emergency or urgent call and obtain a requisition number.
- .5 The Contractor, when requested by the Departmental Representative for an emergency service, will proceed to the site, repair or protect the system or equipment from further damage. When the system has been made safe, the Contractor shall provide, within one (1) working day, a detailed estimate to complete repairs and put the equipment in proper working order.
- .6 The work covered by this specification may include planned spring start-up and shutdown maintenance service. Upon completion of each scheduled inspection, the Contractor will submit two (2) completed copies of Contractor's own "Maintenance Service Report".
- .7 Service and/or repair to be provided on an "as and when requested" basis only.
- .8 On award of Standing Offer Agreement, the Contractor must provide names of personnel performing work on this contract complete with proof of their qualifications.
- .9 The Contractor must report to the site with a service vehicle which is well stocked with replacement parts to carry out repairs on the systems in use in these facilities.
- 5. Log Books**
- .1 The Contractor shall complete all applicable log books outlining all work performed. Payment shall not be made if log book is incomplete.
- 6. Invoicing**
- .1 Contractor shall submit Call-up Slip(s) signed by the Departmental Representative with an invoice. No invoice will be considered for payment unless accompanied by signed Call-up Slip(s) as detailed in Appendix "A".

- .2 Invoice must show :
1. Standing Offer Agreement number
 2. Work location
 3. Date
 4. Requisition number
 5. Name of person who authorized call
 6. Hours broken down as per Unit Price Table
 7. Material net cost and % mark-up
 8. Trades person(s) name and licence(s) number(s)
 9. All invoices must be typed not hand written.
- .3 In the event of a dispute, the Contractor is to make any and all records available to the Department to substantiate time and/or materials spent on any one job.
- .4 The Contractor must submit a completed "Request For Isolation" form when applicable before any invoice can be processed.
- .5 All invoices for the fiscal year must be submitted to payment before 31 March of each year.
7. **Replacement Parts**
- .1 The Contractor is required to repair or replace worn or defective parts or complete components of the system(s) using only genuine manufacturer's replacement parts.
 - .2 Replacement parts by another manufacturer may be used with written permission of the Departmental Representative.
 - .3 Request direction from the Departmental Representative prior to replacing any component whose list price is \$500.00 or more.
 - .4 Maintain sufficient supply of replacement parts to prevent extended downtime. Defective parts shall be replaced within twenty-four (24) hours.
 - .5 Where an equipment inventory numbering system exists, identify on the log sheet the number of the equipment where the replacement part was used.
8. **Work Schedule**
- .1 At each normal service call, the Contractor must have personnel on-site providing the service continuously on every working day until the work is completed.
9. **Site Visits**
- .1 The Departmental Representative may, without prior notification, visit the site.
10. **Departmental Representative(s) Authorized Personnel**
- .1 The Contractor shall notified, on award of the Standing Offer Agreement, the names listed in Section 1.2.2 Contact Persons for pre-job meeting.

**11. Codes and Legislated
Requirements .1**

The following codes and standards in effect at the time of award are subject to change / revision. The latest editions of each shall be enforced during the term of the contract.

- .1 National Building Code of Canada.
- .2 Part II of the Canada Labour Code.
- .3 Canada Occupational Safety and Health Section of Part II of the Canada Labour Code.
- .4 Part 7, NBC, of the Canadian Plumbing Code.
- .5 Fire Commission of Canada #301 Standard for Building Construction Operations.
- .6 Canadian Construction and Canada Labour Safety Codes; Provincial Government, Workers' Compensation Board; and Municipal Statutes and Authorities.
- .7 Canadian Electrical Code, Part I, CSA C22.1.
- .8 Canadian Environmental Protection Act.
- .9 The Provincial Environmental Acts and Regulations.
- .10 Contractor's "Electrical Safety Requirements" document which must include Lockout Procedures. *

* Please Note: The Contractor's Electrical Safety Requirements - Public Works and Government Services Canada does not warrant the adequacy of these Procedures and advise that the Procedures do not replace the cited Codes and Standards.

The Contractor is responsible to be familiar with the cited Codes and Standards and to ensure that all work undertaken on behalf of Public Works and Government Services Canada is completed in a safe manner and, at a minimum, in compliance with the cited Codes and Standards. In the event there is a conflict between these Procedures and the cited Codes and Standards, the cited Codes and Standards are to prevail.

- .11 Materials and workmanship must conform to or exceed applicable standards of Canadian Government Specifications Board (CGSB), Canadian Standards Association (CSA), American Society for Testing Materials (ASTM) and referenced organizations.
- .12 The Contractor can obtain addresses for codes and standards from Departmental Representative upon request.
- .13 In the event of a conflict between any of the above codes or standards, the most stringent shall apply.

- .14 These standards shall be considered an integral part of the specifications and shall be read in conjunction with the drawings and specifications. The Contractor shall be fully familiar with their contents and requirements as related to the work and materials specified.
- 12. Charge Adjustment (if applicable)**
- .1 Where a charge advisory tag is provided, it shall be completed and mailed when any refrigerant or oil is removed or added to an appliance.
 - .2 No refrigerant is to be discharged to atmosphere, used to flush or purge systems, used as a cleanser or used for leak detection.
 - .3 The Contractor must have or have access to refrigerant reclamation unit and be trained in its use and operation.
 - .4 No appliance is to be discarded while containing refrigerant or oil. The disposal application form must be received and a disposal permit attached to the appliance before being disposed of.
 - .5 When the charge is removed for repair purposes, the designate is to be advised of the cost of installing isolation valves to prevent the necessity of further removals.
 - .6 All accidental discharges are to be reported to the designate.
 - .7 All work is to be performed in accordance with the Federal Environment Protection Act, Provincial Environment Acts and Regulations and the Refrigeration Service Engineers Society Code of Practice.
- 13. Licences, Permits and Fees**
- .1 Provide the authorities having jurisdiction with all information requested.
 - .2 Pay all fees and obtain certificates and permits required.
 - .3 Furnish these certificates and permits when requested.
- 14. Taxes**
- .1 Pay applicable Federal, Provincial and Municipal taxes.
- 15. Examination**
- .1 Examine the existing conditions and determine those conditions affecting the work.

- 16. Existing Services**
- .1 Protect and maintain existing active services.
 - .2 Connect to existing services with minimum disturbance to occupants and building operation.
 - .3 Use existing services at no cost.
 - .4 Use designated sanitary facilities.
 - .5 Any shutdown to execute service or repair must first be approved by Departmental Representative or his designate. Normal working hours shall be construed as 0800 hours to 1700 hours, Monday through Friday inclusive excluding holidays.
 - .6 Ensure that capacity of services is adequate prior to imposing additional loads. Connecting and disconnecting is Contractor's expense and responsibility.
 - .7 Inform the Departmental Representative immediately of any code violations or required repairs which could pose a hazard to employees or building occupants.
 - .8 When connecting to or disconnecting from an existing electrical system, ensure of a balanced load upon completion of work.
- 17. Cleaning**
- .1 Maintain work area free of accumulated waste and rubbish.
 - .2 Remove and dispose of debris, used and obsolete material on a daily basis.
 - .3 Remove grease, dust, dirt, stains, fingerprints and other foreign materials from sight-exposed interior and exterior finished surfaces affected by Standing Offer Agreement work.
- 18. Cutting, Fitting and Patching**
- .1 Cut, fit and patch where required for work under this contract. Make good all disturbed surfaces to original condition.
- 19. Co-ordination and Protection**
- .1 Execute work with minimum disturbance to occupants, public and normal use of building. Make arrangements with Department to facilitate execution of work. Maintain access and exists as work area could be occupied during execution of work.
 - .2 Movement of office furniture is the Contractor's responsibility.
 - .3 Furniture including desks, file cabinets, shelving units, chairs, and cabinets which are moved because of the work requirements will be moved back at the end of each work day.
 - .4 Asbestos assessment drawings, where available, are to be referenced before any interior finished surfaces are disturbed and protect existing work from damage.

- .5 Where necessary, cover all building contents, materials and fittings in work areas prior to commencing work, remove covers on completion of work.
 - .6 Obtain Departmental Representative's approval before cutting, boring or sleeving load bearing members.
 - .7 All possible safety precautions are to be taken to ensure the protection of employees or occupants during the course of the work.
 - .8 Obtain Department Representative's approval before isolating any security, monitoring or audible alerting devices.
 - .9 In the event the Fire Alarm System is deemed inoperable due to ongoing work by the Contractor, a trained sentry/rounds man will carry out the functions of fire watch.
- 20. Product Approvals**
- .1 The Contractor shall ensure that all controlled products used in the performance of the work are classified and labelled according to the Workplace Hazardous Materials Information System (WHMIS).
 - .2 The Contractor shall submit for approval the Material Safety Data Sheets (MSDS) for all controlled products that will be used in the performance of this work.
 - .3 No controlled products are to be brought on-site without prior approved Material Safety Data Sheets (MSDS).
 - .4 Material Safety Data Sheets (MSDS) to remain on-site at all times.
- 21. Materials and Equipment**
- .1 Equipment and materials to be new, CSA certified, and manufactured to standard quoted.
 - .2 Where there is no alternative to supplying equipment which is not CSA certified, obtain special approval from an independent testing agency recognized by the provincial Department of Labour.
 - .3 Use products of one manufacturer or same type as existing, including classification, unless otherwise specified.
 - .4 Request direction from Departmental Representative prior to replacing any component whose list price is \$500.00 or more.
 - .5 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.
 - .6 Deliver, store and maintain materials with manufacturer's seals and labels intact.

- .7 Store materials in accordance with manufacturer's and supplier's instructions.
- .8 Do not store materials on-site without Departmental Representative's approval.
- .9 Public Works and Government Services Canada accepts no responsibility for materials or equipment stored on-site.
- .10 When an equipment inventory numbering system exists, identify to the appropriate Departmental contact all pertinent data relative to the new piece of equipment upon installation.
- .11 The Contractor to supply shop drawings and manufacturer's instructions and specifications on all new equipment exceeding \$250.00 in value.
- .12 Where the Contractor supplies equipment purchased from a supplier or manufacturer, the Contractor shall obtain from the manufacturer or supplier, a warranty for the manufacturer's normal warranty period and such warranty shall be made out to Her Majesty the Queen in right of Canada.
- 22. Personnel**
- .1 The Contractor must provide an minimum of one licensed personnel, for each jobsite, with a valid Provincial Department of Labour Licence for applicable Province, to work on all aspects of electrical related to this Standing Offer Agreement. PWGSC may at any time during this Standing Offer Agreement request to inspect a workperson's certification.
- .2 The Contractor will provide the Departmental Representative with a list of all people working on PWGSC premises, complete with a copy of their licences, where applicable, and will update the list immediately when personnel changes.
- .3 The Contractor must have the capability of providing two qualified construction Electricians within 24 hour call-up. Where applicable, each of electrical journeyman may have an apprentice who is registered with Department of Labour in the Province of work performed, at the minimum of second year level. This apprentices must be under the direct supervision of the electrical journeyman.
- 23. Work Done by Other Means**
- .1 This Standing Offer Agreement does not create an exclusive right of the Contractor to perform all work which might be required. The Department reserves the right to have any work done by other means.

- 24. Workmanship**
- .1 All equipment panels and control covers must be replaced and properly fitted utilizing all fastening screws and/or bolts according to equipment design. All workmanship is subject to inspection and approval.
 - .2 Replace all work unsatisfactory to the Departmental Representative without extra cost.
- 25. Site Security**
- .1 Site security is the responsibility of the Contractor who shall erect temporary site enclosures, barricades and fencing to prevent unauthorized entry, pilferage and vandalism.
 - .2 Any work that may disrupt the operations of the occupying clients will be carried out after normal building operational hours. For all work carried out after normal building operational hours, the Departmental Representative will determine acceptable building security.
- 26. Security Clearance**
- .1 The required security clearance level for this Contract is **Reliability Status**.
 - .2 It is the Contractor's responsibility to initiate the security screening required for the personnel and the Contractor shall not have access to the work site until the resources (i.e.: "personnel") have the necessary clearance.
 - .3 The Canadian and International Industrial Security Directorate (CIISD) of Public Works and Government Services Canada (PWGSC) is responsible for administering the Industrial Security Program in Canada.
 - .4 The Contractor shall follow the instructions at the website: <http://www.ciisd.gc.ca/text/ps/oss-e.asp>, which includes all necessary forms.
- 27. Meetings**
- .1 Attend meetings at site when notified by Public Works and Government Services Canada.
- 28. Drawings and Maintenance Manuals**
- .1 Where available, Maintenance Manuals and drawings for new work are to be accessible for viewing by the Departmental Representative when required. Maintenance Manuals and drawings for existing work are available for viewing from the Departmental Representative, when required.
 - .2 Additions, relocation or removal of electrical equipment are to be recorded, dated and initialed by the Contractor or the Departmental Representative on the "as-built" prints where applicable.

- .3 "As-built" drawings are to be revised accordingly to indicate any deviations to the originals.
- .4 The Contractor shall ensure that all new electrical work is recorded in log "Record of Electrical Work".

1. **Compliance Requirements**
 - .1 Comply with the Canada Labour Code Part II and the Canada Occupational Health and Safety Regulations.
 - .2 Comply with the Provincial Occupational Health and Safety Act and supporting Occupational General Safety Regulations as amended from time to time.
 - .3 Observe and enforce construction safety measures required by the following statutes and authorities:
 - .1 The National Building Code of Canada, Part 8.
 - .2 The National Fire Code of Canada.
 - .3 Provincial Workers Compensation Board.
 - .4 Municipal Statutes and Ordinances.
 - .4 The Contractor and his/her personnel must adhere to the Federal Government 'NO SMOKING' Policy while in Federal facilities and/or Scent Free Policy if applicable.
 - .5 All sub-contractors shall adhere to the above qualifications.
2. **Submittals**
 - .1 **Prior to Award** The successful bidder is to provide (within seven (7) calendar days after closing):
 - .1 Documentation indicating that the Contractor has successfully completed a recognized current (within the last 3 yrs.) **EXTERNAL SAFETY AUDIT**. This audit to be performed by an independent company/person qualified to conduct safety audits.
 - .2 A letter of good standing from Worker's Compensation Board.
 - .3 Signed statement by Owner of company that the company will maintain Worker's Compensation Board coverage for the life of the Standing Offer Agreement (SOA) / Service Contract (SC), including sub-contractor.
 - .4 **Before Work Begins** The successful bidder is to provide :
 - .1 The Contractor has prepared, through risk assessment, a site-specific health and safety management plan.
3. **Training**
 - .1 **Before Work Begins** the successful bidder is to provide documentation:
 - .1 Certification of training for safety for all personnel that will be involved with the Standing Offer Agreement/Service Contract. Updated list complete with licenses shall be kept on site including personnel changes.
 - .2 Training for workers shall include (but not limited to)
 - .1 Safe operation of tools and equipment.
 - .2 Proper use and maintenance of personal protective equipment (PPE).
 - .3 Safe work practices and procedures for their given work tasks or function.
 - .4 Site conditions and minimum site safety rules.

4. **Fastening Devices Explosive Actuated** .1 Power activated devices using explosives shall not be used.
5. **Confined Spaces** .1 All work in confined spaces will be carried out in compliance with the Canada Occupational Safety and Health Regulations, Part XI.
- .2 The Contractor to provide and maintain all equipment as required by any person to enter and/or perform work in a safe manner, in compliance with the Canada Occupational, Safety and Health Regulations, Part XI.
- .3 The Contractor to provide and maintain training, as required by the Canada Occupational Safety and Health Regulations, Part XI.
- .1 The Contractor and/or his employees shall provide proof of training and qualifications when requested by the Departmental Representative.
- .4 The Contractor to provide the Departmental Representative with a copy of an "Entry Permit" for each and every entry into the confined space to ensure compliance with the Canada Occupational Safety and Health Regulations, Part XI.
- .5 The Contractor to have a hazard assessment of the confined space performed.
- .1 The Contractor to provide the Departmental Representative with a copy of the hazard assessment.
6. **Fall Protection** .1 All work carried out above the mandatory height restrictions, as stated in Canada Labour Code, Part II, Section 12.10(1), from an unsafe/unguarded structure and/or scaffolding, will be done in compliance with the Canadian Occupational Safety and Health Regulations, Part XII, Section 12.10.
- .2 The components of a fall protection system shall meet the standards as outlined in the Canadian Occupational Safety and Health Regulations, Part XII, Section 12.10 (2).
- .3 The Contractor is to ensure fall protection equipment is maintained, inspected and tested by a qualified technician as required by the Canadian Occupational Safety and Health Regulations, Part XII, Section 12.3.
7. **Lockouts** .1 Prepare Lockout Procedures in writing. Describe safe work practices, work functions and sequence of activities to be followed on site to safely isolate all potential energy sources and lockout/tag out facilities and equipment.

8. Safety
- .1 **NOTE: This Area contains fibrous Asbestos.** All copies of the formal Hazard Assessments conducted by the Contractor throughout the duration of the work shall be retained and made available to the Departmental Representative immediately upon request.
 - .2 It is the Contractor's responsibility to be familiar with all applicable Safety Acts, Regulations, Codes and Standing Offer Agreement requirements. These must be identified and addressed in the Safety Plan, by identifying Standard Operating Procedures (SOP) and safe work practices (SWP) which incorporate clear and specific control measures, applicable rules, procedures and practices, all of which shall become mandatory.
 - .3 Post the Safety Plan at a common location on the site visible to all workers and persons accessing the site. Ensure that all employees, including sub-contractors' personnel, are advised of such Safety Plan and of the posted location.
 - .4 The Contractor shall ensure all workers and authorized persons entering the work site are notified of and abide by the posted Safety Plan, safety rules, procedures, safe work practices and applicable Safety Acts, Regulations, and codes. Any person not complying with these shall not be permitted on the site.
 - .5 Shall ensure that all applicable personal protective equipment (PPE) is used.
 - .6 The Departmental Representative shall coordinate arrangements for the Contractor to be briefed on site safety within 14 days of award of Standing Offer Agreement.

Electrical

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| 1. Environmental | .1 | All work is to be performed in accordance with the Federal Environmental Protection Act and the Provincial Environmental Acts and Regulations. |
| 2. Disposal of Wastes | .1 | Do not bury rubbish and waste materials on site unless approved by Departmental Representative. |
| | .2 | Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers. |
| 3. Drainage | .1 | Provide temporary drainage and pumping as necessary to keep excavations and site free from water. |
| | .2 | Do not pump water containing suspended materials into waterways, sewer or drainage systems. |
| | .3 | Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements. |
| 4. Site Clearing and Plant Protection | .1 | Protect trees and plants on site and adjacent properties where indicated. |
| | .2 | Wrap in burlap, trees and shrubs adjacent to construction work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2 m. |
| | .3 | Protect roots of designated trees to drip line during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones. |
| | .4 | Minimize stripping of topsoil and vegetation. |
| | .5 | Restrict tree removal to areas indicated or designated by Departmental Representative. |
| 5. Work Adjacent to Waterways | .1 | Do not operate construction equipment in waterways. |
| | .2 | Do not use waterway beds for borrow material. |
| | .3 | Do not dump excavated fill, waste material or debris in waterways. |
| | .4 | Design and construct temporary crossings to minimize erosion to waterways. |
| | .5 | Do not skid logs or construction materials across waterways. |
| | .6 | Avoid indicated spawning beds when constructing temporary crossings of waterways. |

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|----|-------------------|----|--|
| | | .7 | Do not blast under water or within 100 m of indicated spawning beds. |
| 6. | Pollution Control | .1 | Maintain temporary erosion and pollution control features installed under this contract. |
| | | .2 | Control emissions from equipment and plant to local authorities emission requirements. |
| | | .3 | Prevent sandblasting and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures. |
| | | .4 | Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads. |
| 7. | Open Fire | .1 | Fires on site are not permitted. |

**1. Journeyperson
Electrician**

.1

The journeyperson electrician shall:

- .1 Carry out and assist in various types of building electrical maintenance as requested by Public Works and Government Services Canada. Maintenance types defined in Section 1, Paragraph 9, Service Definitions.
- .2 Relocate, install or repair electrical equipment; such as, but not limited to, lighting fixtures, receptacles, relays, pac poles, wiring runs, panels, breakers, portable equipment, or any other electrical requirements requested by Public Works and Government Services Canada; such as, testing, calibrating, programming or electrical measurements.
- .3 Inform the Departmental Representative of any "phase unbalance" (voltage or current) produced by new or additional equipment in a new or existing system. Carry out adjustments and record results.
- .4 Produce all certificates and permits upon request of the Departmental Representative.
- .5 Instruct the Departmental Representative on-site of any new operating procedures when installing or modifying new or existing equipment.
- .6 Shall immediately inform the Departmental Representative of any unsafe situations or conditions related to the work site.

Electrical

PART 1 - GENERAL .1 Materials to new, CSA certified, and manufactured to standard quoted, where applicable.

PART 2 - PRODUCTS

2.1 Conduit .1 Flexible metal conduit: to CSA C22.2 No. 56-1977.
.2 Electrical metallic tubing: to CSA C22.2 No. 83-1985.

2.2 Conduit Fittings .1 Fittings for raceways: to CSA C22.2 No. 18-1992.

PART 3 - EXECUTION

3.1 Installation Guidelines

.1 Minimum size conductors for branch circuit wiring shall be #12 RW 90, X-link.

.2 E.M.T. and RW 90 conductors to be installed for branch circuit wiring. No BX cable allowed.

.3 All E.M.T. and flexible conduit to have #14 insulated green ground wire minimum.

.4 All E.M.T. to have steel set screw couplings and connectors. (no cast).

.5 Flexible conduit and #12 RW 90 conductors to be installed as fixture drops from junction boxes. No BX cable allowed. Over 1.5 metres, use 1/2" flex.

.6 All new circuits to be colour-coded and numbered at breakers, junction boxes and wiring devices. Include panel number and circuit number on each conductor.

.7 No splices allowed inside panelboards (distribution, power and lighting).

.8 Panel Directories are to be brought up to date with each new circuit change or installation.

.9 Receptacles to be nylon faced, specification grade:
Type: Hubbell 5252. Other manufacturer's #5262.

.10 Switches to be nylon faced, specification grade:
Type: Hubbell 1201 - 15 ampere or equal
Hubbell 1221 - 20 ampere or equal

Electrical

- .11 Any replacement or new installation of fluorescent fixtures is to contain energy saving ballasts and lamps:
Type: Surface-mounted - CFI = Director-2 series with Halophane lens or equal.
Recessed - CFI - PrismaLite lens or equal.
Electronic Ballast Type - Advance Rapid Start or EBT Instant Start, or equal.
Lamp Type - 32 Watt, 3500 K, T-8, G.E. or equal.
- 3.2 Installation
- .1 Note: BX and PVC not acceptable.
- .2 Flexible metal conduit runs shall not exceed 1.5 meters.
- .3 install separate ground wire in E.M.T.
- .4 Lugs, terminals, screws used for termination of wiring to be suitable for copper conductors.
- .5 Minimum acceptable size wire to be used is #12 AWG copper conductors.

**JOB SLIP
ELECTRICAL**

Requisition #: _____

Location: _____

Date: _____

Description of Work: _____

WORK TIME	
Start Time:	
Completion Time:	
No. of Persons:	
Provincial License #	
Apprentice:	
Total Hours Worked:	
Material Cost:	
Grand Total:	

Signed By:

Departmental Representative

Contractor (or his/her Designate)

NOTE: Use separate job slip for each day.