

Wharf Construction**Marie Joseph Wharf****Guysborough County, Nova Scotia****Project No. R.076162.001**

General Instructions

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1. Documents Required .1 Maintain at job site, one copy each of following:
 - .1 Contract drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Reviewed shop drawings/submissions.
 - .5 Change orders.
 - .6 Other modifications to Contract.
 - .7 Field test reports.
 - .8 Copy of approved work schedule.
 - .9 Manufacturer's installation and application instructions.

 2. Site Conditions .1 Records of existing structures and geotechnical reports may be available for inspection at the offices of Public Works and Government Services Canada, 1713 Bedford Row, Halifax, N.S. This material is not necessarily up to date and is for information purposes only. It should be complemented by site visits and consultation with appropriate expertise.

 3. Work Schedule And Completion Dates .1 Prepare and submit to the *Departmental Representative* within 5 days of notification of Contract award, one copy of the construction schedule in the form of a bar chart showing the dates for commencement and completion of each major activity of the work, including the work of Subcontractors; dates for submissions, review and return of shop drawings, etc.; the dates of Substantial and Final Completion; and intended man hours of labour and equipment for each major item of work. If the schedule as submitted is unacceptable in any way, submit without delay a revised schedule satisfactory to the *Departmental Representative*.
 - .2 The *Departmental Representative* is to notify the Contractor in writing of acceptance of the Construction Schedule. Comply with the

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Construction Schedule at all times. If, for any reason, the Construction Schedule is not followed, immediately notify the *Departmental Representative* of the change and submit a revised schedule for acceptance. Upon written acceptance by the *Departmental Representative*, this schedule shall become the Construction Schedule.

- .3 Whenever required, give further written particulars concerning this schedule. The submission to and acceptance by the *Departmental Representative* of the Contractor's Construction Schedule or the furnishing of details and particulars thereto shall not relieve the Contractor of any duties and responsibilities under the Contract.

4. Measurement

Responsibilities

- .1 Notify the *Departmental Representative* sufficiently in advance of operations to permit required measurements for payment purposes.

5. Contractor's Use
of Site

- .1 Co-operate with users of existing facilities.
- .2 Should interferences occur, take directions from the *Departmental Representative*.
- .3 Do not unreasonably encumber site with materials or equipment.
- .4 Move stored products or equipment which interfere with operations of present users, *Departmental Representative* or other Contractors.
- .5 Obtain and pay for use of additional storage or work areas needed for operations.

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- .6 Comply with all regulations and authorities having jurisdiction over the work, whether on land or on water.
- .7 Ensure no damage occurs to existing structures as a result of operations. Any damage shall be repaired at Contractor's expense.
- .8 Provide temporary barriers and warning signs in location where work is adjacent to areas used by public.
6. Codes and Standards
- .1 Perform work in accordance with National Building Code of Canada NBC 2010, Nova Scotia Building Code Act and Regulations and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
- .2 Meet or exceed requirements of specified standards, codes and referenced documents. When a standard or code is outdated, the latest edition shall supersede the referenced date.
- .3 Observe and enforce construction safety measures by Canadian Construction Safety Code and Construction Safety Code of Nova Scotia. In the event of conflict between any provisions of above authorities the most stringent provision shall apply.
7. Project Meetings
- .1 *Departmental Representative* will arrange project meetings and assume responsibility for setting times and recording and distributing minutes.
8. Setting Out of Work
- .1 Do all detail surveys necessary for the work, including locating and maintaining working points, and establishing lines and

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elevations. Perform all layout work and carefully preserve benchmarks, reference points and stakes.

.2 Provide such masts, scaffolds, batter boards, lines, straight edges, templates and other devices as may be necessary to facilitate layout, construction and inspection of the work. Whenever necessary, suspend work for such reasonable time as may be necessary to permit the *Departmental Representative* to check or inspect any portion of the Work. The Contractor shall not be allowed any extra compensation or time for completion due to suspension of work.

.3 Elevations for the various grades and features of the specified works to be referenced and properly related to a benchmark, which shall be approved by the *Departmental Representative*.

.4 Verify all grades, lines, levels and dimensions shown on the drawings and report any errors or inconsistencies to the *Departmental Representative* before commencing work. Provide and maintain well-built batterboards at all points to facilitate the progress of the work. Establish all other grades, lines and levels required to facilitate the work.

9. Existing Services .1

Where work involves breaking into or connecting to existing services, carry out work at times directed by governing authorities, with minimum of disturbance to pedestrian and vehicular traffic.

.2 Before commencing work, establish location and extent of service lines in area of work and notify *Departmental Representative* of findings.

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.3 Submit schedule to and obtain acceptance from *Departmental Representative* for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.

.4 Where unknown services are encountered, immediately advise the *Departmental Representative* and confirm findings in writing.

10. Contract Documents .1

Contract Drawings:

.1 The drawings for the Work consist of all drawings listed in these "Plans And Specifications" marked "A" and any additional drawings issued at a later date by the *Departmental Representative*.

.2 *Departmental Representative* may furnish additional drawings to assist in proper execution of work. These drawings will be issued for clarification only. Such drawings shall have same meaning and intent as if they were included with plans referred to in Contract Documents.

.3 The drawings indicate the extent and general dimensions of the work. Make all necessary measurements to ensure that the result of the work is in accordance with the intent.

.4 Any items shown on plans or referenced in this specification shall be considered as incidental to the work and not an extra if they are not included for measurement for payment in Section 01 29 00.

.5 Verify all existing conditions in field prior to proceeding with work.

.2 Contract Specifications:

.1 The general requirements and technical specifications are written solely for the General Contractor. They are

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organized into the NMS format of separate divisions and sections.

.2 Specification language is of the 'Short Form' type. For example, where the word "provide" occurs, interpret it to mean "the Contractor shall furnish all labour, material and equipment necessary to complete the work".

.3 This Specification and accompanying drawings are intended to describe and provide for a finished project. They are intended to be complementary, and what is called for by either shall be as binding as if called for by both. The Contractor shall understand that the work herein described shall be complete in every detail, notwithstanding that every item necessarily involved is not particularly mentioned, and Contractor shall be held to provide all labour, materials and equipment necessary for the entire completion of the work and shall not avail himself of any errors or omissions.

11. Permits and Regulations .1 Apply for, obtain and pay for all necessary permits, approvals and other authorizations required for the work.
- .2 Comply with all by-laws, ordinances and regulations of all authorities having jurisdiction.
- .3 Pay for any Municipal permits.
12. Cutting, Fitting and Patching .1 Execute cutting (including excavation), fitting and patching required to make work fit properly.

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- .2 Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.
- .3 Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work.
- .4 Obtain the *Departmental Representative's* approval before cutting, boring or sleeving, or excavating adjacent to load-bearing members.
- .5 Perform underwater cutting as required.
13. Record of Construction .1 As work progresses, maintain accurate records to show all deviations from the contract drawings, with particular reference to work which will be concealed. Prior to the inspection of the work for the issuance of the *Final Certificate of Completion*, provide the *Departmental Representative* with one set of white prints of the drawings with all deviations shown neatly thereon.
14. Payment .1 Payment for all work under this contract to be according to the "Articles of Agreement".
- .2 No separate payment shall be made for work specified under *General Conditions*, *Supplementary Conditions* or any sections of *Specification* under *Division 01*. The cost of this work is to be considered as overhead and to be included in the unit prices of the *Contract*. Exceptions are the *Departmental Representative's Site Office*, *Mobilization/Demobilization*, *Sitework*, *Demolition and Removals*, and electrical systems, as shown separately in the *Unit Price Table*.
- .3 Dimensional changes as directed by the *Departmental Representative* to suit existing
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conditions, but not resulting in additional work or materials, shall not be considered as extra to the Contract.

15. Site Examination .1 All parties tendering should visit the site of the work prior to submission of tenders and make themselves thoroughly acquainted with site conditions, access issues, physical site constraints, conditions of existing objects to be removed, tides, degree of exposure and all information necessary for the proper carrying out of the work covered by the drawings and this Specification. Submission of Tender shall be deemed that Contractor is conversant and familiar with site conditions.
- .2 The *Departmental Representative* will give no consideration whatsoever to any claim by the Contractor resulting from failure to have made all the necessary investigations prior to tendering.
16. Maintenance of Shipping .1 Liaise with the local port officials to coordinate activities such that any interference to current wharf users is minimized.
17. Cooperation & Assistance to Departmental Representative .1 Co-operate with *Departmental Representative* on inspection of work.
- .2 Provide assistance when requested.
- .3 Provide small motor boat with operator and sounding chain for *Departmental Representative's* use when requested.
18. Datum .1 The datum referred to in this Specification is Chart Datum. Chart Datum is, by International Agreement a plane below which

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the tide will seldom fall. The Canadian Hydrographic Service has adopted the plane of the lowest normal tide (L.N.T.) as Chart Datum. As the rise, fall, and range of tides varies daily, the Canadian Tide and Current Tables, as issued by the Canadian Hydrographic Service, should be consulted for tidal predictions and other tidal information relating to the work.

19. Contractor's
Representative .1 Continuously maintain on the site an authorized representative to whom communication may be addressed and who will be competent to speak for the Contractor in discussing work methods.
20. Workers
Compensation .1 Contractor and all Subcontractors must be registered under the Workers' Compensation Act and shall provide evidence of good standing.
- .2 At completion of Contract and before final payment is made, the Contractor shall present to the *Departmental Representative* a Letter of Certification from the Workers' Compensation Board showing that all required assessments are paid in connection with all trades.
21. Laws, Standards
Taxes and Fees .1 Comply with all laws and standards governing all or any part of the work, pay all applicable taxes and pay for all permits and certificates required in respect of the execution of the work. Where variances exist between the requirements of agencies governing all or any part of the work, the most restrictive shall govern, but in no instance shall the standards established by the drawings and this Specification, which exceed such requirements, be reduced.

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22. Protection and Repair .1 Repair any damage resulting from operations under this contract.
23. Location of Equipment and Fixtures .1 Location of equipment, fixtures or any appurtenances indicated are to be considered approximate.
24. Inspection and Testing .1 The *Departmental Representative* may employ an Inspector and/or Testing Company to ensure work conforms to the Contract.
25. Disposal of Debris .1 Debris, including construction materials not incorporated in the work, oil products and containers and other materials of this nature, shall be disposed of in suitable locations off the site. Disposal is the responsibility of the Contractor.
- .2 Material from the work shall not be permitted to go adrift or otherwise become a menace to navigation.
26. Existing Soils Conditions .1 Any information pertaining to soils and all borehole logs are furnished by the *Departmental Representative* as a matter of general information only and borehole descriptions or logs are not to be interpreted as descriptive of conditions at locations other than those described by the boreholes themselves.
27. Relics And Antiquities .1 Protect relics, antiquities and items of historical or scientific interest such as cornerstones and contents, commemorative plaques, inscribed tablets and similar objects found during course of work.

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.2 If relics or antiquities are found, give immediate notice to the *Departmental Representative* and await written instructions before proceeding with work in the area.

.3 Relics, antiquities and items of historical or scientific interest remain her Majesty's property.

28. Temporary
Navigational
Buoys

.1 The Contractor shall maintain temporary buoys to mark the position of the outer end of the structure as construction proceeds. All buoys are to meet the requirements of Canadian Coast Guard Standard TP968-1984 and be equipped with radar reflectors.

.2 The Contractor shall coordinate the buoy installation with the local harbour authority.

.3 The Contractor is responsible for all costs associated with the supply, installation and removal of all temporary navigational buoys.

Wharf Construction**Marie Joseph Wharf****Guysborough County, Nova Scotia****Project No. R.076162.001**PROJECT PARTICULARS1. Description
of Work

- .1 The work under this Contract involves construction of a new wharf ell extension on the existing "L-shaped" Marie Joseph wharf structure in Marie Joseph, Nova Scotia.
- .2 Work shall include but is not limited to:
 - .1 Select removal of members/materials at the north end of the existing wharf structure, disposal of unsuitable existing members/materials and salvaging and reinstalling suitable members/materials.
 - .2 Supply and installation of new treated timber bearing and batter piles for the new wharf structure.
 - .3 Construction and installation of reinforced concrete pile caps, wharf slab on steel deck, and wheel guards.
 - .4 Supply and installation of new timber wales, fenders, sheathing and ladders, including steel hold-fasts and rungs.
 - .5 Supply and installation of galvanized steel materials including ladder materials, bolts, pile shoes, etc.
 - .6 Supply and installation of miscellaneous items including PVC deck drains, PVC conduit/sleeves, etc.
 - .7 Installation of new cast iron mooring cleats.
 - .8 All fasteners and connectors as required, indicated and intended.
 - .9 All labour, materials and everything required for a complete electrical installation in accordance with, but not necessarily limited to, the electrical drawings and specifications.
 - .10 All other ancillaries, incidentals and work necessary to complete the project as required, indicated and intended.

Wharf Construction**Marie Joseph Wharf****Guysborough County, Nova Scotia****Project No. R.076162.001**PROJECT MEASUREMENT

2. General .1 This section details the measurement method to be used for payment purposes. Incidental items covered in the various sections of the Specification are to be allowed for in the pricing of each pay item.
3. Measurement For Payment
- Lump Sum Items: The following items (1-4) are to be measured separately for costing purposes, then combined and submitted as one item under the Lump Sum Items in the Tender Documents:**
- .1 *Departmental Representative's Site Office.*
- .2 Mobilization and Demobilization.
- .3 Sitework, Demolition and Removals.
- .4 Electrical Systems.
- .1 Departmental Representative's Site Office: All work associated with the supply, maintenance and removal from site of the *Departmental Representative's* site office per Section 01 51 00 of the Specification shall constitute a lump sum for measurement purposes.
- .2 Mobilization and Demobilization: All work associated with the mobilization and demobilization of all equipment required to perform and complete the work as outlined in the Contract Drawings, including Contractor's site office, etc., shall constitute a lump sum for measurement purposes.
- .3 Sitework, Demolition and Removals: Sitework, demolition and removals shall constitute a lump sum for measurement purposes. Sitework, demolition and removals shall include but is not limited to:
- .1 Removal and disposal of north face of existing timber wharf structure, within

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Project Particulars And Measurement

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- defined removal limits, including debris boom.
- .2 Complete removal of all encountered unsuitable materials, debris and fill material within defined work area.
 - .3 Disposal off-site of timber and other excavated components and materials (including timbers treated with creosote or other preservatives and all other debris) at a facility approved by the Nova Scotia Department of Environment and Labour.
 - .4 All other incidentals and work necessary to complete the project as required, indicated and intended and not included as a unit price item or elsewhere.
- .4 Electrical Systems: Electrical work shall include, but is not necessarily limited to:
- .1 Protecting, maintaining and/or rerouting of existing active services/drains and electrical conduits adjacent to the wharf.
 - .2 Provision of all labour, materials and everything required for a complete electrical installation in accordance with, but not necessarily limited to, the electrical drawings and specifications.
 - .3 Supply and installation of a new electrical power service, 200 amp., 120/240 Volt delivered to site via utility supplied, 1 phase, overhead pole line including pole, conductors and pole mounted utility transformer.
 - .4 Supply and installation of a new electrical service entrance, complete with utility meter, service entrance rated disconnect switch, panel board, EEMAC 4X separate enclosure for panel, junction box, lighting control, treated timbers, plywood backboard, concrete and concrete formwork.
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Project Particulars And Measurement

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- .5 Installation of LED luminaires on new and existing poles and supply and installation of wiring and control of LED luminaires. LED luminaires and mounting brackets will be supplied by others.
- .6 Supply and installation of direct buried PVC conduits and direct buried teck cables including teck pulled through existing conduit sleeves and under wharf cabling.
- .7 Supply and installation of wiring for receptacles and Derrick motor starter.
- .8 Supply and installation of complete bollard system and power centre units, including mounting brackets and plates, timber posts, plywood, and all associated hardware.
- .9 Supply and installation of all other ancillaries, incidentals and work necessary for a complete electrical installation in accordance with, but not necessarily limited to, the electrical drawings and specifications.

Unit Price Items: The following outlines the unit of measurement of the unit price items as indicated in the tender documents.

.5 Division 03:

Supply and Installation of Reinforced Concrete (35 MPa):

- .1 Cast-in-place reinforced concrete for pile caps shall be measured for payment by the cubic metre (m³) place measure (CMPM). Calculations shall be based on concrete pile cap dimensions indicated on the drawings, under the steel deck.
- .2 Cast-in-place reinforced concrete for wharf deck including wheel guard shall be measured for payment by the square metre (m²) place measure (SMPM) calculated from neat plan view

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dimensions. Steel deck shall not be measured separately but shall be considered incidental to the work.

- .3 Supply and installation of bolts and all associated hardware including PVC conduit/sleeves at pile caps and PVC deck drains shall not be measured separately but shall be considered incidental to the work.

.6 **Division 06:**

Supply and Installation of Dimension Timber:

- .1 Treated dimension timber for wales, sheathing and fenders shall be measured for payment by the cubic metre (m³). Calculations shall be based on timber dimensions indicated on the drawings.
- .2 Supply and installation of bolts, hardware, bolt sleeves, nuts, washers, etc., shall not be measured but shall be considered incidental to the work.

.7 **Division 31:**

Supply and Installation of Timber Bearing and Batter Piles:

- .1 Supply of timber bearing and batter piles shall be measured for payment by the linear meter of piling agreed to by the *Departmental Representative* at time of ordering. Lengths shall be the lengths between cut-off elevations and assumed tip elevations, plus one meter for cut-off.
- .2 Installation of timber bearing piles shall be measured for payment per each successfully installed as agreed to by the *Departmental Representative*.
- .3 Pile shoes, driving templates, equipment, other incidentals, etc., required for supply and installation of timber bearing and batter piles shall

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not be measured but shall be considered incidental to the work.

.8 **Division 35:**

Supply and Installation of Treated Timber Ladders and Cast Iron Mooring Cleats:

- .1 Supply and installation of treated timber ladders, including holdfasts and rungs, shall be measured for payment per each. Bolts and hardware shall not be measured separately but shall be considered incidental to the work.
- .2 Supply and installation of painted mooring cleats shall be measured for payment per each. Bolts, hardware, grouting and painting shall not be measured separately but shall be considered incidental to the work.

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Submissions / Shop Drawings

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| 1. | <u>General</u> | .1 | Submit to <i>Departmental Representative</i> , for review, shop drawings, product data, samples and other information specified. |
| | | .2 | Until submission is reviewed, work involving relevant product shall not proceed. |
| 2. | <u>Shop Drawings</u> | .1 | Drawings to be originals prepared by Contractor, Subcontractor, Supplier or Distributor which illustrate appropriate portion of work showing fabrication, layout, setting or erection details as specified in appropriate Sections. |
| | | .2 | Identify details by reference to sheet and detail numbers shown on Contract Drawings. |
| | | .3 | Maximum sheet size 860 X 1120 mm. |
| 3. | <u>Product Data</u> | .1 | Certain Specification Sections specify that manufacturer's standard schematic drawings, catalogue sheets, diagrams, schedules, performance charts, illustrations and other standard descriptive data will be accepted in lieu of shop drawings. |
| 4. | <u>Samples</u> | .1 | Submit samples in sizes and quantities specified. |
| | | .2 | Construct field samples and mock-ups at locations acceptable to the <i>Departmental Representative</i> . |
| | | .3 | Accepted samples shall become standards of workmanship and material against which the installed work will be checked on project. |
| 5. | <u>Miscellaneous Data</u> | .1 | Provide certificates, methodologies, designs and test results as required. |
| 6. | <u>Coordination of Submissions</u> | .1 | Review shop drawings, product data, samples and miscellaneous data prior to submission to the <i>Departmental Representative</i> . |
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- .2 Verify:
 - .1 Field Measurements.
 - .2 Field Construction Criteria.
 - .3 Catalogue numbers and similar data.
- .3 Coordinate each submission with requirements of work and Contract documents. Individual submissions will not be reviewed until all related information is available.
- .4 Contractor's responsibility for errors and omissions in submission is not relieved by *Departmental Representative's* review of submissions.
- .5 Contractor's responsibility for deviations in submission from requirements in Contract documents is not relieved by *Departmental Representative's* review of submission, unless *Departmental Representative* gives written acceptance of specified deviations.
- .6 Notify *Departmental Representative*, in writing at time of submission, of deviations from requirements of Contract documents stating reasons for deviations.
- .7 After *Departmental Representative's* review, distribute final copies.

7. Submission Requirements

- .1 Schedule submissions at least 14 days before dates reviewed submissions will be needed.
- .2 Submit number of copies of shop drawings, product data which Contractor requires for distribution, plus 2 copies which will be retained by *Departmental Representative*.
- .3 Accompany submissions with transmittal letter in duplicate containing, at a minimum:
 - .1 Date.
 - .2 Project title and number.

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- .3 Contractor's name and address.
- .4 Identification and quantity of each shop drawing, product data and sample submitted.
- .5 All other pertinent data.
- .4 Submissions shall include, at a minimum:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Contractor.
 - .2 Sub-Contractor.
 - .3 Supplier.
 - .4 Manufacturer.
 - .5 Separate detailer, when pertinent.
 - .4 Identification of product or material.
 - .5 Relation to adjacent structure or materials.
 - .6 Field dimensions, clearly identified as such.
 - .7 Specification Section Number.
 - .8 Applicable standards, such as ASTM, CSA or CGSB numbers, etc.
 - .9 Contractor's stamp, initialled or signed, certifying review of submission, verification of field measurements and compliance with Contract documents.

8. Shop Drawings

- Review .1 Review of shop drawings by the *Departmental Representative* is for the sole purpose of ascertaining conformance with the general concept. This review shall not mean that the *Departmental Representative* approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the construction and Contract Documents. Without restricting the generality of the foregoing, the

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Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for coordination of the work of all sub-trades.

9. Other Reviews .1 As for shop drawings above, other reviews are for the sole purpose of ascertaining conformance with the general concept.

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Special Procedures on Fire Safety Requirements

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1. Description of Section .1 Fire Safety Requirements.
 - .2 Hot Work Permit.
 - .3 Existing Fire Protection and Alarm Systems.
 2. Related Sections .1 Section 01 35 29 - Health and Safety Requirements.
 3. References .1 National Fire Code 2010.
 - .2 National Building Code 2010.
 4. Definitions .1 Hot Work defined as:
 - .1 Welding work.
 - .2 Cutting of materials by use of torch or other open flame devices.
 - .3 Grinding with equipment which produces sparks.
 - .4 Use of open flame torches such as for roofing work.
 5. Submittals .1 Submit copy of Hot Work Procedures and sample of Hot Work permit to *Departmental Representative* for review, within 14 calendar days of acceptance of bid.
 - .2 Submit in accordance with section 01 33 00 - Submissions / Shop Drawings.
 6. Fire Safety Requirements .1 Implement and follow fire safety measures during Work. Comply with following:
 - .1 National Fire Code 2010.
 - .2 National Building Code 2010.
 - .3 Federal and Provincial Occupational Health and Safety Acts and Regulations.
 - .2 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, *Departmental Representative*
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Special Procedures on Fire Safety Requirements

will advise on the course of action to be followed.

7. Hot Work Authorization
- .1 Obtain *Departmental Representative's* written "Authorization to Proceed" before conducting any form of Hot Work on site.
 - .2 To obtain authorization submit to *Departmental Representative*:
 - .1 Contractor's typewritten Hot Work Procedures to be followed on site as specified below.
 - .2 Description of the type and frequency of Hot Work required.
 - .3 Sample Hot Work Permit to be used.
 - .3 Upon review and confirmation that effective fire safety measures will be implemented and followed during performance of hot work, *Departmental Representative* will give authorization to proceed as follows:
 - .1 Issue one written "Authorization to Proceed" covering the entire project for duration of work, or;
 - .2 Subdivide the work into pre-determined, individual activities, each activity requiring a separately written authorization to proceed.
 - .4 Requirement for individual authorization will be based on:
 - .1 Nature or phasing of work;
 - .2 Risk to Facility operations;
 - .3 Quantity of various trades needing to perform hot work on project, or;
 - .4 Other situation deemed necessary by *Departmental Representative* to ensure fire safety on premises.
 - .5 Do not perform any Hot Work until receipt of *Departmental Representative's* written "Authorization to Proceed" for that portion of work.

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Special Procedures on Fire Safety Requirements

- .6 In tenant occupied Facility, coordinate performance of Hot Work with Facility Manager through the *Departmental Representative*. When directed, perform Hot Work only during non-operative hours of the Facility. Follow *Departmental Representative's* directives in this regard.
8. Hot Work Procedures .1 Develop and implement safety procedures and work practices to be followed during the performance of Hot Work.
- .2 Hot Work Procedures to include:
- .1 Requirement to perform hazard assessment of site and immediate work area beforehand for each hot work event in accordance with Safety Plan specified in section 01 35 29 - Health and Safety Requirements.
- .2 Use of a Hot Work Permit system with individually issued permit by Contractor's Superintendent to worker or Subcontractor granting permission to proceed with Hot Work.
- .3 Permit required for each Hot Work event.
- .4 Designation of a person on site as a Fire Safety Watcher responsible to conduct a fire safety watch for a minimum duration of 60 minutes immediately following the completion of the Hot Work.
- .5 Compliance with fire safety codes, standards and occupational health and safety regulations specified.
- .6 Site specific rules and procedures in force at the site as provided by the Facility Manager.
- .3 Generic procedures, if used, must be edited and supplemented with pertinent information tailored to reflect specific project conditions. Label document as being the Hot Work Procedures for this Contract.

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Special Procedures on Fire Safety Requirements

- .4 Procedures shall clearly establish responsibilities of:
 - .1 Worker performing hot work.
 - .2 Person issuing the Hot Work Permit.
 - .3 Fire Safety Watcher.
 - .4 Subcontractor(s) and Contractor.

- .5 Brief all workers and Subcontractors on Hot Work Procedures and of Permit system. Stringently enforce compliance.

- 9. Hot Work Permit .1 Hot Work Permit to include the following:
 - .1 Project name and project number.
 - .2 Building name and specific room or area where hot work will be performed.
 - .3 Date of issue.
 - .4 Description of hot work type needed.
 - .5 Special precautions to be followed, including type of fire extinguisher needed.
 - .6 Name and signature of permit issuer.
 - .7 Name of worker to which the permit is issued.
 - .8 Permit validity period not to exceed 8 hours. Indicate start time/date and termination time/date.
 - .9 Worker's signature with time/date of hot work completion.
 - .10 Stipulated time period of safety watch.
 - .11 Fire Safety Watcher's signature with time/date.

- .2 Permit to be typewritten form. Industry Standard forms shall only be used if all data specified above is included on form.

- .3 Each Hot Work Permit to be completed in full, signed and returned to Contractor's Superintendent for safe keeping on site.

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10. Fire Protection and Alarm Systems .1 Fire protection and alarm systems shall not be:
- .1 Obstructed.
 - .2 Shut-off, unless approved by *Departmental Representative*.
 - .3 Left inactive at the end of a working day or shift.
- .2 Do not use fire hydrants, standpipes and hose systems for purposes other than firefighting.
- .3 Costs incurred, from the fire department, Facility Owner and users, resulting from negligently setting off false alarms will be charged to the Contractor in the form of financial progress payment reductions and holdback assessments against the Contract.
11. Documents On Site .1 Keep Hot Work Permits and Hazard assessment documentation on site for duration of Work.
- .2 Upon request, make available to *Departmental Representative* or to authorized safety Representative for inspection.

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Special Procedures on Lockout Requirements

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1. Description of Section .1 Procedures to isolate and lockout electrical facility and other equipment from energy sources.
 2. Related Sections .1 Section 01 35 29 - Health and Safety Requirements.
 3. References .1 CSA C22.1-12, Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations.
.2 CAN/CSA-C22.3 No.1-06, Overhead Systems.
.3 CSA C22.3 No.7-06, Underground Systems.
.4 COSH: Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.
 4. Definitions .1 Electrical Facility: means any system, equipment, device, apparatus, wiring, conductor, assembly or part thereof that is used for the generation, transformation, transmission, distribution, storage, control, measurement or utilization of electrical energy, and that has an amperage and voltage that is dangerous to persons.
.2 Guarantee of Isolation: means a guarantee by a competent person in control or in charge that a particular facility or equipment has been isolated.
.3 De-energize: in the electrical sense, that a piece of equipment is isolated and grounded, e.g. if the equipment is not grounded, it cannot be considered de-energized (DEAD).
.4 Guarded: means that an equipment or facility is covered, shielded, fenced, enclosed, inaccessible by location, or otherwise protected in a manner that, to the extent that is reasonably practicable, will prevent
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or reduce danger to any person who might touch or go near such item.

.5 Isolate: means that an electrical facility, mechanical equipment or machinery is separated or disconnected from every source of electrical, mechanical, hydraulic, pneumatic or other kind of energy that is capable of making it dangerous.

.6 Live/alive: means that an electrical facility produces, contains, stores or is electrically connected to a source of alternating or direct current of an amperage and voltage that is dangerous or contains any hydraulic, pneumatic or other kind of energy that is capable of making the facility dangerous to persons.

5. Compliance Requirements

.1 Comply with the following in regards to isolation and lockout of electrical facilities and equipment:

- .1 Canadian Electrical Code.
- .2 Federal and Provincial Occupational Health and Safety Acts and Regulations.
- .3 Regulations and code of practise as applicable to mechanical equipment or other machinery being de-energized.
- .4 Procedures specified herein.

.2 In event of conflict between any provisions of above authorities the most stringent provision will apply.

6. Submittals

.1 Submit copy of lockout procedures, sample of lockout permit and lockout tags proposed for use in accordance with Section 01 33 00 - Submissions / Shop Drawings. Submit within 14 calendar days of acceptance of bid.

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7. Isolation of Existing Services
- .1 Obtain *Departmental Representative's* written authorization prior to working on existing live or active electrical facilities and equipment and before proceeding with isolation of such item.
 - .2 To obtain authorization, submit to *Departmental Representative* the following documentation:
 - .1 Written request to isolate the particular service or facility, and;
 - .2 Copy of Contractors Lockout Procedures.
 - .3 Make a Request for Isolation for each event, unless directed otherwise by *Departmental Representative*, as follows:
 - .1 Fill-out standard form in current use at the Facility as provided by *Departmental Representative*, or;
 - .2 Where no form exist, make written request indicating:
 - .1 The equipment, system or service to be isolated and its location.
 - .2 Duration of isolation period (i.e. start time & date and completion time & date).
 - .3 Voltage of service feed to system or equipment being isolated.
 - .4 Name of person making the request.
 - .4 Do not proceed with isolation until receipt of written notification from *Departmental Representative* granting the Isolation Request and authorization to proceed with the work.
 - .1 Note that *Departmental Representative* may designate another person at the Facility being authorized to grant the Isolation Request.

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- .5 Conduct safe, orderly shutdown of equipment or facility. De-energize, isolate and lockout power and other sources of energy feeding the equipment or facility.
 - .6 Determine in advance, as much as possible, in cooperation with the *Departmental Representative*, the type and frequency of situations which will require isolation of existing services.
 - .7 Plan and schedule shut down of existing services in consultation with the *Departmental Representative* and the Facility Manager. Minimize impact and downtime of Facility operations. Follow *Departmental Representative's* directives in this regard.
 - .8 Conduct hazard assessment as part of the process in accordance with health and safety requirements specified Section 01 35 29 - Health and Safety Requirements.
8. Lockouts
- .1 De-energize, isolate and lockout electrical facility, mechanical equipment and machinery from all potential sources of energy prior to working on such items.
 - .2 Develop and implement clear and specific lockout procedures to be followed as part of the Work.
 - .3 Prepare typed written Lockout Procedures describing safe work practices, procedures, worker responsibilities and sequence of activities to be followed on site by workforce to safely isolate an active piece of equipment or electrical facility and effectively lockout and tag-out its sources of energy.
 - .4 Include as part of the Lockout Procedures a system of lockout permits managed by Contractor's Superintendent or other

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qualified person designated by him/her as being "in-charge" at the site.

- .1 A lockout permit shall be issued to specific worker providing a Guarantee of Isolation before each event when work must be performed on a live equipment or electrical facility.
- .2 Duties of person managing the permit system to include:
 - .1 Issuance of permits and lockout tags to workers.
 - .2 Determining permit duration.
 - .3 Maintaining record of permits and tags issued.
 - .4 Making a Request for Isolation to *Departmental Representative* when required as specified above.
 - .5 Designating a Safety Watcher, when one is required based on type of work.
 - .6 Ensuring equipment or facility has been properly isolated.
 - .7 Collecting and safekeeping lockout tags returned by workers as a record of the event.
- .5 Clearly establish, describe and allocate responsibilities of:
 - .1 Workers.
 - .2 Person managing the lockout permit system.
 - .3 Safety Watcher.
 - .4 Subcontractor(s) and General Contractor.
- .6 Generic procedures, if used, must be edited and supplemented with pertinent information to reflect specific project requirements.
 - .1 Incorporate site specific rules and procedures in force at site as provided by Facility Manager through the *Departmental Representative*.

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- .2 Clearly label the document as being the Lockout procedures applicable to work of this Contract.
- .7 Use energy isolation lockout devices specifically designed and appropriate for type of facility or equipment being locked out.
- .8 Use industry standard lockout tags.
- .9 Provide appropriate safety grounding and guards as required.
- 9. Conformance .1 Brief all workers and Subcontractors on requirements of this section. Stringently enforce use and compliance.
- 10. Documents on Site .1 Post Lockout Procedures on site in common location for viewing by workers.
 - .2 Keep copies of Request for Isolation forms and lockout permits and tags issued to workers on site for full duration of Work.
 - .3 Upon request, make available to *Departmental Representative* or to authorized safety representative for inspection.

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Health and Safety Requirements

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1. Related Work .1 Section 01 35 24 - Special Procedures on Fire Safety Requirements.
 - .2 Section 01 35 25 - Special Procedures on Lockout Requirements.
 2. Definitions .1 COSH: Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.
 - .2 Competent Person: means a person who is:
 - .1 Qualified by virtue of personal knowledge, training and experience to perform assigned work in a manner that will ensure the health and safety of persons in the workplace, and;
 - .2 Knowledgeable about the provisions of occupational health and safety statutes and regulations that apply to the Work and;
 - .3 Knowledgeable about potential or actual danger to health or safety associated with the Work.
 - .3 Medical Aid Injury: any minor injury for which medical treatment was provided and the cost of which is covered by Workers' Compensation Board of the province in which the injury was incurred.
 - .4 PPE: personal protective equipment.
 - .5 Work Site: where used in this section shall mean areas, located at the premises where Work is undertaken, used by Contractor to perform all of the activities associated with the performance of the Work.
 3. Submittals .1 Make submittals in accordance with Section 01 33 00.

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- .2 Submit site-specific Health and Safety Plan prior to commencement of Work.
 - .1 Submit within 5 work days of notification of Bid Acceptance. Allow for 5-10 days for Department review and recommendations prior to the commencement of work. Provide 3 copies.
 - .2 *Departmental Representative* will review Health and Safety Plan and provide comments.
 - .3 Revise the Plan as appropriate and resubmit within 5 work days after receipt of comments.
 - .4 *Departmental Representative's* review and comments made of the Plan shall not be construed as an endorsement, approval or implied warranty of any kind by Canada and does not reduce Contractor's overall responsibility for Occupational Health and Safety of the Work.
 - .5 Submit revisions and updates made to the Plan during the course of Work.
 - .3 Submit name of designated Health and Safety Site Representative and support documentation specified in the Safety Plan.
 - .4 Submit building permit, compliance certificates and other permits obtained.
 - .5 Submit copy of Letter in Good Standing from Provincial Workers Compensation or other Department of Labour organization.
 - .1 Submit update of Letter of Good Standing whenever expiration date occurs during the period of Work.
 - .6 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
 - .7 Submit copies of incident reports.

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Health and Safety Requirements

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- .8 Submit WHMIS MSDS - Material Safety Data Sheets.
4. Compliance Requirements
- .1 Comply with Occupational Health and Safety Act for Province of Nova Scotia, and Regulations made pursuant to the Act.
- .2 Comply with Canada Labour Code - Part II (entitled Occupational Health and Safety) and the Canada Occupational Health and Safety Regulations as well as any other regulations made pursuant to the Act.
- .1 The Canada Labour Code can be viewed at the following web address:
[www.http://laws-lois.justice.gc.ca/eng/acts/L-2_fulltext.html](http://laws-lois.justice.gc.ca/eng/acts/L-2_fulltext.html).
- .2 Canadian Occupational Health and Safety Regulations can be viewed at:
<http://laws-lois.justice.gc.ca/eng/regulations/SOR-86-304/index.html>.
- .3 A copy may be obtained at:
Canadian Government Publishing Public Works & Government Services Canada
Ottawa, Ontario, K1A 0S9 Tel: 819-956-4800 or 1-800-635-7943 Publication No. L31-85/2000 (E or F).
- .3 Treasury Board of Canada Secretariat (TBS):
- .1 Treasury Board, Fire Protection Standard April 1, 2010 www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=17316§ion=text.
- .4 Canadian Standards Association (CSA):
- .1 CSA S350-M1980(R2003), Code of Practice for Safety in Demolition of Structures.
- .5 Observe construction safety measures of:
- .1 NBC 2010, Division B, Part 8.
- .2 Municipal by-laws and ordinances.

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- .6 In case of conflict or discrepancy between above specified requirements, the more stringent shall apply.
- .7 Maintain Workers Compensation Coverage in good standing for duration of Contract. Provide proof of clearance through submission of Letter in Good Standing.
- .8 Medical Surveillance: Where prescribed by legislation or regulation, obtain and maintain worker medical surveillance documentation.
5. Responsibility .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons and environment adjacent to the site to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by all workers, Subcontractors and other persons granted access to Work Site with safety requirements of Contract Documents, applicable federal, provincial, and local by-laws, regulations, and ordinances, and with site-specific Health and Safety Plan.
6. Site Control and Access .1 Control the Work and entry points to Work Site. Approve and grant access only to workers and authorized persons. Immediately stop and remove non-authorized persons.
- .1 *Departmental Representative* will provide names of those persons authorized by *Departmental Representative* to enter onto Work Site and will ensure that such authorized persons have the required knowledge and training on Health and Safety pertinent to their reason for being at the site, however, Contractor remains responsible

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for the health and safety of authorized persons while at the Work Site.

- .2 Isolate Work Site from other areas of the premises by use of appropriate means.
 - .1 Erect fences, hoarding, barricades and temporary lighting as required to effectively delineate the Work Site, stop non-authorized entry, and to protect pedestrians and vehicular traffic around and adjacent to the Work and create a safe environment. See Section 01 51 00 - Temporary Facilities for minimum acceptable requirements.
 - .2 Post signage at entry points and other strategic locations indicating restricted access and conditions for access.
 - .3 Use professionally made signs with bilingual message in the 2 official languages or international known graphic symbols.
 - .3 Provide safety orientation session to persons granted access to Work Site. Advise of hazards and safety rules to be observed while on site.
 - .4 Ensure persons granted site access wear appropriate PPE. Supply PPE to inspection authorities who require access to conduct tests or perform inspections.
 - .5 Secure Work Site against entry when inactive or unoccupied and to protect persons against harm.
7. Protection
- .1 Give precedence to safety and health of persons and protection of environment over cost and schedule considerations for Work.
 - .2 Should unforeseen or peculiar safety related hazard or condition become evident during performance of Work, immediately take

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- measures to rectify situation and prevent damage or harm. Advise *Departmental Representative* verbally and in writing.
8. Filing of Notice .1 File Notice of Project with pertinent provincial health and safety authorities prior to beginning of Work.
.1 *Departmental Representative* will assist in locating address if needed.
9. Permits .1 Post permits, licenses and compliance certificates, specified in Section 01 10 10 - General Instructions, at Work Site.
.2 Where a particular permit or compliance certificate cannot be obtained, notify *Departmental Representative* in writing and obtain approval to proceed before carrying out applicable portion of work.
10. Hazard Assessments .1 Perform site specific health and safety hazard assessment of the Work and its site.
.2 Carryout initial assessment prior to commencement of Work with further assessments as needed during progress of work, including when new trades and Subcontractors arrive on site.
.3 Record results and address in Health and Safety Plan.
.4 Keep documentation on site for entire duration of the Work.
11. Project/Site Conditions .1 Following are potential health, environmental and safety hazards at the site for which Work may involve contact with:
.1 Existing hazardous substances or contaminated wharf materials:
.1 Pressure treated timber.

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- .2 Known latent site and environmental conditions:
 - .1 Wildlife activity.
 - .2 Water tidal action.
 - .3 Electrical.
 - .3 Facility on-going operations:
 - .1 Continued pedestrian use of wharf.
 - .2 Continued vehicular use of wharf.
 - .3 Continued vessel use of wharf for fisheries industry.
 - .4 Vessel travel around area of Work.
 - .2 Above items shall not be construed as being complete and inclusive of potential health and safety hazards encountered during Work.
 - .3 Include above items in the hazard assessment of the Work.
 - .4 MSDS Data sheets of pertinent hazardous and controlled products stored on site can be obtained from *Departmental Representative*.
12. Meetings
- .1 Attend pre-construction health and safety meeting, convened and chaired by *Departmental Representative*, prior to commencement of Work, at time, date and location determined by *Departmental Representative*. Ensure attendance of:
 - .1 Superintendent of Work.
 - .2 Designated Health & Safety Site Representative.
 - .3 Subcontractors.
 - .2 Conduct regularly scheduled tool box and safety meetings during the Work in conformance with Occupational Health and Safety regulations.
 - .3 Keep documents on site.

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13. Health and Safety Plan .1 Prior to commencement of Work, develop written Health and Safety Plan specific to the Work. Implement, maintain, and enforce Plan for entire duration of Work and until final demobilization from site.
- .2 Health and Safety Plan shall include the following components:
- .1 List of health risks and safety hazards identified by hazard assessment.
 - .2 Control measures used to mitigate risks and hazards identified.
 - .3 On-site Contingency and Emergency Response Plan as specified below.
 - .4 On-site Communication Plan as specified below.
 - .5 Name of Contractor's designated Health & Safety Site Representative and information showing proof of his/her competence and reporting relationship in Contractor's company.
 - .6 Names, competence and reporting relationship of other supervisory personnel used in the Work for occupational health and safety purposes.
- .3 On-site Contingency and Emergency Response Plan shall include:
- .1 Operational procedures, evacuation measures and communication process to be implemented in the event of an emergency.
 - .2 Evacuation Plan: site and floor plan layouts showing escape routes, marshalling areas. Details on alarm notification methods, fire drills, location of firefighting equipment and other related data.
 - .3 Name, duties and responsibilities of persons designated as Emergency Warden(s) and deputies.

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- .4 Emergency Contacts: name and telephone number of officials from:
 - .1 General Contractor and Subcontractors.
 - .2 Pertinent Federal and Provincial Departments and Authorities having jurisdiction.
 - .3 Local emergency resource organizations.
 - .5 Harmonize Plan with Facility's Emergency Response and Evacuation Plan. *Departmental Representative* will provide pertinent data including name of Public Works and Facility Management contacts.

- .4 On-site Communication Plan:
 - .1 Procedures for sharing of work related safety information to workers and Subcontractors, including emergency and evacuation measures.
 - .2 List of critical work activities to be communicated with Facility Manager which have a risk of endangering health and safety of Facility users.

- .5 Address all activities of the Work including those of Subcontractors.

- .6 Review Health and Safety Plan regularly during the Work. Update as conditions warrant to address emerging risks and hazards, such as whenever new trade or Subcontractor arrive at Work Site.

- .7 *Departmental Representative* will respond in writing, where deficiencies or concerns are noted and may request re-submission of the Plan with correction of deficiencies or concerns.

- .8 Post copy of the Plan, and updates, prominently on Work Site.

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14. Safety Supervision
- .1 Employ Health & Safety Site Representative responsible for daily supervision of health and safety of the Work.
 - .2 Health & Safety Site Representative may be the Superintendent of the Work or other person designated by Contractor and shall be assigned the responsibility and authority to:
 - .1 Implement, monitor and enforce daily compliance with health and safety requirements of the Work.
 - .2 Monitor and enforce Contractor's site-specific Health and Safety Plan.
 - .3 Conduct site safety orientation session to persons granted access to Work Site.
 - .4 Ensure that persons allowed site access are knowledgeable and trained in health and safety pertinent to their activities at the site or are escorted by a competent person while on the Work Site.
 - .5 Stop the Work as deemed necessary for reasons of health and safety.
 - .3 Health & Safety Site Representative must:
 - .1 Be qualified and competent person in occupational health and safety.
 - .2 Have site-related working experience specific to activities of the Work.
 - .3 Be on Work Site at all times during execution of the Work.
 - .4 All supervisory personnel assigned to the Work shall also be competent persons.
 - .5 Inspections:
 - .1 Conduct regularly scheduled safety inspections of the Work on a minimum bi-weekly basis. Record deficiencies and remedial action taken.
 - .2 Follow-up and ensure corrective measures are taken.

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Health and Safety Requirements

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- .6 Cooperate with Facility's Occupational Health and Safety representative should one be designated by *Departmental Representative*.
- .7 Keep inspection reports and supervision related documentation on site.
15. Training
- .1 Use only skilled workers on Work Site who are effectively trained in occupational health and safety procedures and practices pertinent to their assigned task.
- .2 Maintain employee records and evidence of training received. Make data available to *Departmental Representative* upon request.
- .3 When unforeseen or peculiar safety-related hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise *Departmental Representative* verbally and in writing.
16. Minimum Site Safety Rules
- .1 Notwithstanding requirement to abide by federal and provincial health and safety regulations; ensure the following minimum safety rules are obeyed by persons granted access to Work Site:
- .1 Wear appropriate PPE pertinent to the Work or assigned task; minimum being hard hat, safety footwear, safety glasses and hearing protection.
- .2 Immediately report unsafe condition at site, near-miss accident, injury and damage.
- .3 Maintain site and storage areas in a tidy condition free of hazards causing injury.
- .4 Obey warning signs and safety tags.

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Health and Safety Requirements

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- .2 Brief persons of disciplinary protocols to be taken for noncompliance. Post rules on site.
17. Correction of Non-Compliance
- .1 Immediately address health and safety non-compliance issues identified by Authority Having Jurisdiction or by *Departmental Representative*.
- .2 Provide *Departmental Representative* with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 *Departmental Representative* will stop Work if non-compliance of health and safety regulations is not corrected in a timely manner.
18. Incident Reporting
- .1 Investigate and report the following incidents to *Departmental Representative*:
- .1 Incidents requiring notification to Provincial Department of Occupational Safety and Health, Workers Compensation Board or to other regulatory Agency.
- .2 Medical aid injuries.
- .3 Property damage in excess of \$10,000.00.
- .4 Interruptions to Facility operations resulting in an operational lost to a Federal department in excess of \$5,000.00.
- .2 Submit report in writing.
19. Hazardous Products
- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS).

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Health and Safety Requirements

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- .2 Keep MSDS data sheets for all products delivered to site.
- .1 Post on site.
 - .2 Submit copy to *Departmental Representative*.
20. Blasting .1 Blasting or other use of explosives is not permitted on site.
21. Power Actuated Devices .1 Use powder actuated fastening devices only after receipt of written permission from *Departmental Representative*.
22. Confined Spaces .1 Abide by occupational health and safety regulations regarding work in confined spaces.
23. Site Records .1 Maintain on Work Site copy of safety related documentation and reports stipulated to be produced in compliance with Acts and Regulations of Authorities Having Jurisdiction and of those documents specified herein.
- .2 Upon request, make available to *Departmental Representative* or authorized Safety Officer for inspection.
24. Posting of Documents .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on Work Site in accordance with Acts and Regulations of Province having jurisdiction.
- .2 Post other documents as specified herein, including:
 - .1 Site specific Health and Safety Plan.
 - .2 WHMIS data sheets.

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Environmental Protection Procedures
for Marine Work

1.1 References

- .1 Canada Shipping Act, Transport Canada, 2001, amended 2013-12-01
- .2 Canadian Coast Guard Regulations, Fisheries and Oceans Canada
- .3 Canadian Environmental Assessment Act, 2012, amended 2013-11-25
- .4 Canadian Environmental Protection Act, 1999, amended on 2014-03-28
- .5 Fisheries Act, 1985, Fisheries and Oceans Canada, amended 2013-11-25
- .6 Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters, 1998
- .7 Migratory Birds Convention Act, 1994, Environment Canada, amended 2010-12-10
- .8 Navigation Protection Act, 1985. Transport Canada, amended 2014-04-01
- .9 Nova Scotia - Environment Act
- .10 Species at Risk Act, 2002, amended 2013-03-08
- .11 The Federal Policy on Wetland Conservation, 1991, Environment Canada
- .12 Transportation of Dangerous Goods Act, 1992, Transport Canada, amended 2009-06-16
- .13 Workplace Hazardous Materials Information System, Health Canada.

1.2 Definitions

- .1 Archaeological resources: all tangible evidence of human activity that is of historical, cultural or scientific interest. Examples include features, structures, archaeological objects or remains at or from an archaeological site, or an object recorded as an isolated archaeological find.
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for Marine Work

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- .2 Buffer zone: a vegetated land that protects watercourses from adjacent land uses. It refers to the land adjacent to watercourses, such as streams, rivers, lakes, ponds, oceans, and wetlands, including the floodplain and the transitional lands between the watercourse and the drier upland areas.
 - .3 Deleterious substance: (a) any substance that, if added to any water, would degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by man of fish that frequent that water, or (b) any water that contains a substance in such quantity or concentration, or that has been so treated, processed or changed, by heat or other means, from a natural state that it would, if added to any other water, degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by man of fish that frequent that water.
 - .4 Fish habitat: spawning grounds and any other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly in order to carry out their life processes.
 - .5 Hazardous material: Product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to the environment or adversely affect health of persons, animals, or plant life when released into the environment.
 - .6 Invasive or alien species: refers to a species or subspecies introduced outside its normal distribution whose establishment and
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for Marine Work

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spread threaten ecosystems, habitats or species with economic or environmental harm.

.7 Navigable water: a canal and any other body of water created or altered as a result of the construction of any work.

.8 Surface watercourse: refers to the bed and shore of a river, stream, lake, creek, pond, marsh, estuary or salt-water body that contains water for at least part of each year.

.9 Wetlands: land where the water table is at, near or above the surface or which is saturated for a long enough period to promote such features as wet-altered soils and water tolerant vegetation. Wetlands include organic wetlands or "peatlands," and mineral wetlands or mineral soil areas that are influenced by excess water but produce little or no peat.

1.3 Transportation

.1 Transport hazardous materials and hazardous waste in compliance with the Transportation of Dangerous Goods Act.

.2 Eliminate free board spillage when excavating, loading and hauling excavated material.

.3 Trucks transporting any wet excavated material will have watertight boxes.

.4 Do not overload trucks when hauling excavated material.

.5 Maintain trucks clean and free of mud, dirt and other foreign matter.

.6 Secure contents against spillage. Avoid potential release of contents and of any foreign matter onto highways, roads and access routes used for the work. Immediately clean any ground spills and soils to extent as directed by authority having jurisdiction.

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Environmental Protection Procedures
for Marine Work

- .7 Prior to commencement of work, advise and seek approval from the *Departmental Representative* of the existing roads and temporary routes / roads (including the construction of any temporary causeways or in-water access roads for the purposes of carrying out the work) proposed to be used to access work areas and to haul material to and from the site.
 - .8 Construction material and debris is not to become waterborne.
 - .9 Any tools, equipment, vehicles, temporary structures or parts thereof used or maintained for the purpose of building or placing a work in navigable water are not to remain in place after the completion of the project.
 - .10 Vessels are to be permitted safe access through the worksite at all times, and assisted as necessary.
 - .11 All materials and equipment used in construction must be marked in accordance with the Collision Regulations of the *Canada Shipping Act, 2001* when located on the waterway.
 - .12 Advise the Canadian Coast Guard, Marine Communication and traffic Services (MCTS) at (902) 564-7751 or toll free at 1-800-686-8676 sufficiently in advance of commencement of work or when deploying or removing site markings in order to allow for appropriate Notices to Shipping/Mariners action.
 - .13 Work activities must comply with any/all conditions of the Navigation Protection Act (NPA) approval issued by Transport Canada. A copy of the NPA approval will be provided to the Contractor and must be kept on-site while the work is in progress.
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Wharf Construction**Marie Joseph Wharf****Guysborough County, Nova Scotia****Project No. R.076162.001**Environmental Protection Procedures
for Marine Work1.4 Temporary Causeways
and Access Roads

- .1 It will be the Contractor's responsibility to gain access to the work area. The construction and removal of temporary causeways and access roads will be at the Contractor's expense and will be removed immediately after work is deemed complete by the *Departmental Representative*.
- .2 It will be the Contractor's responsibility to identify a location for the disposal of material imported by the Contractor for the construction of temporary causeways and access roads.
- .3 All material used for construction of temporary causeways and access roads must be clean and free from excessive fines, organics, debris and non-toxic (i.e., free of fuel, oil, grease and/or any other contaminants), non-ore bearing and from a provincially approved non-water source.
- .4 Material is to be screened, if required, to ensure that no fines or stones less than 0.2 kilograms are placed in the work. Gradation of the material to be imported for the construction of the causeways, roads etc. shall be within the following limits:

IMPERIAL SIZE	METRIC SIZE	PERCENT PASSING
18"	450 mm	100
8"	200 mm	44-75
4"	100 mm	24-50
2"	50 mm	7-14

- .5 Heavy machinery and equipment must be operated from a dry platform only. Temporary causeways and access roads shall be constructed at an elevation such that machinery and equipment is operating completely out of the water at all stages of

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the tide. If tidal work is being carried out, machinery and equipment shall be relocated back to a suitable elevation to prevent operating in submerged waters.

- .6 The Contractor is to maintain temporary buoys to mark the position of the access road including the outer toe as construction proceeds. All buoys are to meet requirements of the applicable Canadian Coast Guard standard and be equipped with radar reflectors.

1.5 Operation of Machinery

- .1 Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species and noxious weeds.
- .2 Whenever possible, operate machinery on land above the high water mark, on ice, or from a floating barge in a manner that minimizes disturbance to the banks and bed of the water body.
- .3 Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water.

1.6 Containment and Spill Management

- .1 Comply with Federal (*CEPA Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*) and Provincial regulations, codes, standards and guidelines for the storage of fuel and allied petroleum products on site.
- .2 Do not dump petroleum products or any other deleterious substances on ground or in the water.
- .3 Be diligent and take all necessary precautions to avoid spills and contaminate the soil and water (both surface and subsurface) when handling petroleum products
-

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- on site and during fueling and servicing of vehicles and equipment.
- .4 Maintain on site appropriate emergency spill response equipment consisting of at least one 250-litre (55 gallon) overpack spill kit for containment and cleanup of spills.
 - .5 Maintain vehicles and equipment in good working order to prevent leaks on site.
 - .6 In the event of a petroleum spill, immediately notify the *Departmental Representative* and the Canadian Coast Guard (CCG) at 1-800-565-1633 (24 hour report line). Perform clean-up in accordance with all regulations and procedures stipulated by authority having jurisdiction.
 - .7 Materials such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, or other chemicals are not to enter the watercourse.
 - .8 Develop a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance.
- 1.8 Hazardous
Material Handling
- .1 Store and handle hazardous materials in accordance with applicable federal and provincial regulations, codes, standards and guidelines. Store in location that will prevent spillage into the environment.
 - .2 Label containers to WHMIS requirements and keep MSDS data sheets on site for all hazardous materials.
 - .3 Maintain inventory of hazardous materials and hazardous waste stored on site. List items by product name, quantity and date when stored.
-

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- .4 Store and handle flammable and combustible materials in accordance with National Fire Code.
- 1.9 Disposal of Wastes
- .1 Do not bury rubbish, construction and demolition debris (i.e., concrete, creosote timbers, steel, impacted soil materials etc.) and waste materials on site.
- .2 Dispose and recycle construction and demolition debris and waste materials in accordance with Provincial Waste Management Regulations.
- .3 Do not dispose of hazardous waste, volatile materials (such as mineral spirits, paints, thinners etc.) and petroleum products into waterways, storm or sanitary sewers or in waste landfill sites.
- .4 Dispose of hazardous waste in accordance with applicable federal and provincial, regulations, codes, standards and guidelines.
- .5 Concrete waste:
- .1 Do not discharge residual or rejected concrete on site.
- .2 Immediately clean any accidental release of concrete on site prior to solidification.
- .3 Do not wash and clean concrete vehicles on site.
- .4 Perform dumping of residual material and truck cleaning operations only at the concrete plant. Follow environmental regulations and good practices as approved by the Provincial Department of the Environment and other authorities having jurisdiction.
- 1.10 Water Quality
- .1 Visual monitoring for suspended solids shall occur daily during periods of inwater works, and other related works. If any changes occur in the turbidity of the water in the vicinity of the work area as a result of
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construction activities, the work should immediately stop and the Department of Fisheries and Oceans - Fisheries Protection Program contacted at (902) 426-3909 to determine if additional mitigation measures are required.

- .2 Where work may affect the water quality adjacent to water intake lines used by lobster holding facilities, fish processing facilities and other harbour users, schedule work in cooperation with the Harbour Authority as directed by *Departmental Representative* to minimize interference and impact to harbour users.
 - .3 Do not wash down equipment within a 30 metre buffer zone of a wetland, watercourse or other identified environmentally sensitive area.
 - .4 Develop and implement an **Erosion and Sediment Control Plan** for the site that minimizes risk of sedimentation of the water body during all phases of the work. Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized, suspended sediment has resettled to the bed of the water body or settling basin and runoff water is clear. The plan should, where applicable, include:
 - a) Installation of effective erosion and sediment control measures before starting work to prevent sediment from entering the water body.
 - b) Measures for managing water flowing onto the site, as well as water being pumped / diverted from the site such that sediment is filtered out prior to the water entering a water body. For example, pumping / diversion of water to a vegetated area, construction of a settling basin or other filtration system.
 - c) Site isolation measures (e.g., silt boom or silt curtain) for containing
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- suspended sediment where in-water work is required (e.g., excavation, dredging, underwater cable installation).
- d) Measures for containing and stabilizing waste material (e.g., excavated material, dredging spoils, construction waste and materials, commercial logging waste, uprooted or cut aquatic plants, accumulated debris) above the high water mark of nearby water bodies to prevent re-entry.
 - e) Regular inspection and maintenance of erosion and sediment control measures and structures during the course of the work.
 - f) Repairs to erosion and sediment control measures and structures if damage occurs.
 - g) Removal of non-biodegradable erosion and sediment control materials once site is stabilized.
- .5 Water contamination by preservative treated wood:
- .1 Preservative treated lumber and timber, whether plant or site treated, shall be cured for a minimum of 30 days from date of the treatment application before their installation in areas which will be in contact with the water.
 - .2 Do not cut treated wood lumber over the surface of a watercourse or wetland.
 - .3 Do not use liquid applied preservative products over the surface of a watercourse or wetland.
 - .4 Wood treated with Chromate Copper Arsenate (CCA) or Ammoniac Copper Zinc Arsenate (ACZA) must be CSA or American Wood Preserver Association (AWPA) approved.
 - .5 Do not use timber and lumber treated with creosote, petroleum and pentachlorophenol for any part of the work.
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1.11 Socioeconomic
Restrictions

- .1 Abide by municipal and provincial regulations for any restrictions on work performed during the night time and on flood lighting of the site. Obtain applicable permits.
- .2 Place flood lights in opposite direction of adjacent residential and business areas.
- .3 Work equipment and machinery must be equipped with purposely designed mufflers to reduce noise on site to lowest possible level. Maintain mufflers in good operating condition at all times.

1.12 Bird and Bird
Habitat

- .1 Become knowledgeable with and abide by the Migratory Birds Convention Act (MBCA) in regards to the protection of migratory birds, their eggs, nests and their young encountered on site and in the vicinity.
 - .2 Minimize disturbance to all birds on site and adjacent areas during the entire course of the Work.
 - .3 Do not approach concentrations of seabirds, waterfowl and shorebirds when anchoring equipment, accessing wharves or ferrying supplies.
 - .4 During night time work, position flood lights in opposite direction of nearby bird nesting habitat.
 - .5 Do not use beaches, dunes and other natural previously undisturbed areas of the site to conduct work unless specifically approved by the *Departmental Representative*.
 - .6 Should nests of migratory birds in wetlands be encountered during work, immediately notify *Departmental Representative* for directives to be followed.
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- .1 Do not disturb nest site and neighbouring vegetation until nesting is completed.
- .2 Minimize work immediately adjacent to such areas until nesting is completed.
- .3 Protect these areas by following recommendations of Canadian Wildlife Service.

1.13 Fish Protection

- .1 Avoid wet, windy and rainy periods that may increase erosion and sedimentation.
 - .2 Ensure that all in-water activities, or associated in-water structures, do not interfere with fish passage, constrict the channel width, or reduce flows.
 - .3 Screen any water intakes or outlet pipes to prevent entrainment or impingement of fish. Entrainment occurs when a fish is drawn into a water intake and cannot escape. Impingement occurs when an entrapped fish is held in contact with the intake screen and is unable to free itself.
 - .4 Be aware of the risk for contamination of the fish habitat at the site as a result of alien species being introduced in the water.
 - .5 To minimize the possibility of fish habitat contamination and the spread of aquatic invasive (alien species), all construction equipment which will be immersed into the water of a watercourse, or has the possibility of coming into contact with such water during the course of the work, must be cleaned and washed to ensure that they are free of marine growth and alien species.
 - .1 Equipment shall include boats, barges, cranes, excavators, haul trucks, pumps, pipe lines and all other miscellaneous tools and equipment previously used in a marine environment.
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- .6 Cleaning and washing of equipment shall be performed immediately upon their arrival at the site and before use in or over the body of water.
 - .7 Conduct cleaning and washing operations as follows:
 - .1 Scrape and remove heavy accumulation of mud and dispose appropriately.
 - .2 Wash all surfaces of equipment by use of a pressurized fresh water supply.
 - .3 Immediately follow with application of a heavy sprayed coating of undiluted vinegar or other environmentally approved cleaning agent to thoroughly remove all plant matter, animals and sediments.
 - .4 Check and remove all plant, animal and sediment matter from the all bilges and filters.
 - .5 Drain standing water from equipment and let fully dry before use.
 - .6 Upon removal from the water, drain standing water from equipment and let fully dry before removal off the site.
 - .8 Do not perform cleaning and washdown within a 30 metre buffer zone of a wetland, watercourse or other identified environmentally sensitive area.
 - .9 Record of Assurance Logbook:
 - .1 Maintain an on-going log of past and present usage and washdowns of all equipment to illustrate mitigation measures undertaken against fish habitat contamination by alien species.
 - .2 Write data in a hard cover bound logbook to include the following:
 - .1 Date and location where equipment was previously used in a watercourse or wetland;
 - .2 Type of work performed.
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- .3 Dates of wash down for each piece of equipment;
 - .4 Cleaning method and cleaning agent(s) used.
-
- .10 Keep Record of Assurance Logbook updated from project to project. Upon request, submit logbook to *Departmental Representative* for review.
 - .11 Contractors are to position their vessels and water borne equipment associated with pile driving in a manner that will prevent damage to sensitive fish habitat (eel grass beds, kelp beds, shellfish beds and salt marshes, etc.
 - .12 Pile cut-offs, waste or any miscellaneous materials are to be recovered for disposal in a designated facility.
 - .13 The deposition of a deleterious substance in water frequented by fish is not permitted. The Fisheries Act prohibits the deposit of any deleterious substance into waters frequented by fish.
- 1.14 Air Quality
- .1 Keep airborne dust and dirt resulting from the work on site to an absolute minimum.
 - .2 Dust suppression by the application of water must be employed, when required. Apply dust control measures to roads, parking lots and work areas. The *Departmental Representative* shall determine locations where water is to be applied, the amount of water to be applied, and the times at which it shall be applied. Waste oil must not to be used for dust control under any circumstances.
 - .3 Spray surfaces with water or other environmentally approved product. Use purposely suited equipment or machinery and apply in sufficient quantity and frequency to provide effective result and continued dust
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- control during the entire course of the work.
- .4 Do not use oil or any other petroleum products for dust control.
- 1.15 Fires .1 Fires and burning of rubbish on site is not permitted.
- 1.16 Archaeological .1 All construction personnel are responsible for reporting any unusual materials unearthed during construction to the construction supervisor. If the find is believed to be an archaeological resource, the construction supervisor will immediately stop work in the vicinity of the find and notify his / her immediate supervisor.
- .2 If an archaeological and / or historically significant item is discovered during excavation, work in the area will be stopped immediately and the *Departmental Representative* will be contacted as well as the provincial Archaeological Services unit:
- a) Nova Scotia - NS Department of Communities, Culture and Heritage, Special Places Program - Nova Scotia Museum telephone: (902) 424-6461
- .3 Work can only resume in the vicinity of the find when authorized by the PWGSC Project Manager and Construction Supervisor, after approval has been granted by the Nova Scotia Department of Communities, Culture and Heritage.
- .4 In the event of the discovery of human remains or evidence of burials, the excavation work will immediately cease and nearest law enforcement agency will be contacted immediately by the PWGSC Project Manager and/or the Construction Supervisor.
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Testing Laboratory Services

Page 1

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1. Related Requirements .1 Particular requirements for inspection and testing to be carried out by a testing laboratory designated by *Departmental Representative* are specified under various sections.

 2. Appointment and Payment .1 *Departmental Representative* will appoint and pay for services of testing laboratory except for the following:
 - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspection and testing performed exclusively for Contractor's convenience.
 - .3 Testing, adjustment and balancing of conveying systems, mechanical and electrical equipment and systems.
 - .4 Mill tests and certificates of compliance.
 - .5 Tests specified to be carried out by Contractor under the supervision of *Departmental Representative*.
 - .6 Concrete mix designs.
 - .7 Re-Inspection and retesting required as a result of failed materials.
 - .2 Where tests or inspections by designated testing laboratory reveal work not in accordance with Contract requirements, Contractor shall pay costs for additional tests or inspections as *Departmental Representative* may require to verify acceptability of corrected work.
-
3. Contractor's Responsibilities .1 Furnish labour and facilities to:
 - .1 Provide access to work to be inspected and tested.
 - .2 Facilitate inspections and tests.
 - .3 Make good work disturbed by inspection and tests.

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Testing Laboratory Services

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- .4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.
- .2 Notify the *Departmental Representative* sufficiently in advance of operations to allow for assignment of laboratory personal and scheduling of tests.
- .3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.
- .4 Pay costs for uncovering and making good work that is covered before required inspection or testing is completed and approved by the *Departmental Representative*.

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Temporary Facilities

Page 1

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1. Access .1 Provide and maintain adequate access to project site.
 - .2 If authorized to use existing roads or structures for access to project site, maintain such roads for duration of the Contract and make good damage resulting from Contractor's use of roads.
 - .3 The Contractor shall maintain full access to the work site. Should a court injunction be required ordering a person or group to refrain from impeding access to the site, such as a demonstration, picketing or union action, then obtaining the injunction and any associated costs shall be considered incidental to this Contract. Any delays associated with such activity shall also be considered incidental to this Contract.

 2. Contractor's Site Office .1 Establish on the site of the work and keep open at all times during the execution of the work an office where all letters, orders, notices and other communications may be received or acknowledged either by the Contractor or his authorized agent or representative. Provide a telephone and fax machine in the office.
 - .2 Keep one up-to-date copy of the Contract Documents, bulletins and other materials as specified under Section 01 10 10 - General Instructions.

 3. *Departmental Representative's* Site Office .1 Provide furnished temporary office for sole use of *Departmental Representative* complete with heat, lights, phone/fax connection and internet connection. Insulated office required if used during October to May. Locate on or adjacent to site.
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Temporary Facilities

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- .2 Inside dimensions minimum 5 m long x 3 m wide x 2.4 m high, with floor 0.3 m above grade, complete with 4-50% opening windows and one lockable door.
- .3 Arrange and pay for telephone and fax machine installation and service in *Departmental Representative's* office for the *Departmental Representative's* exclusive use. Long distance calls placed on this phone by the *Departmental Representative* will be paid for by the *Departmental Representative*. Obtain and pay for wired or wireless internet connection. Computer will be provided by *Departmental Representative*.
- .4 Washroom facilities not required in the office. Provide outside sanitary facilities to approval of *Departmental Representative*.
- .5 Equip office with six chairs, flat 1200 X 2400 X 25 table with writing surface, 4 drawer lockable filing cabinet, drafting table, and work desk with padded chair.
- .6 Contractor shall maintain *Departmental Representative's* site office in clean condition.
4. Storage Sheds .1 Provide adequate weather tight sheds with raised floors for storage of materials, tools and equipment which are subject to damage by weather.
- .2 Contractor shall make own arrangements for on-site storage areas.
5. Sanitary Facilities .1 Contractor shall provide sanitary facilities for work force in accordance with governing regulations and ordinances, and to approval of the *Departmental Representative*.

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Temporary Facilities

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- .2 Contractor shall post notices, take such precautions as required by local health authorities and keep area and premises in sanitary condition.
6. Parking .1 Contractor shall make own arrangements to provide parking space for work force.
7. Power .1 Arrange, pay for and maintain temporary electrical power supply in accordance with governing regulations and ordinances.
- .2 Install temporary facilities for power such as pole lines and cables to approval of local power supply authority, as required.
8. Water Supply .1 Arrange, pay for and maintain temporary water supply in accordance with governing regulations and ordinances, as required.
9. Barricades .1 Provide and maintain sufficient barricades, fencing, notices, warning signs, light signals, etc., for the protection of adjoining property and to warn others and workmen engaged on the job of the dangers inherent in the work.
- .2 Types and location of barricades, etc., shall be in accordance with local regulations and to the satisfaction of *Departmental Representative*.
- .3 The presence of such barricades, lights, etc., shall not relieve the Contractor of the responsibility for any damages or safety infractions.
10. Security .1 Contractor shall make own arrangements for security of equipment, materials and damages resulting from fire, weather and theft.

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Temporary Facilities

11. Site Signs and Notices .1 Only Project Identification and Contractor signboards and notices for safety or instruction are permitted on site.
- .2 Format, location and quantity of site signs and notices to be accepted by *Departmental Representative*.
- .3 Signs and notices for safety or instruction to be in English or commonly understood graphic symbols.
12. Removal of Temporary Facilities .1 Remove temporary facilities from site when directed by *Departmental Representative*, or at the end of the work.
- .2 When project is closed down for a period of time, keep temporary facilities operational until no longer required by *Departmental Representative*.

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Material and Equipment

Page 1

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1. General .1 Use new material and equipment unless otherwise specified.
- .2 Submit following information for any or all materials and products proposed for supply within 7 days of request by *Departmental Representative*:
- .1 Name and address of manufacturer.
- .2 Trade name, model and catalogue number.
- .3 Performance, descriptive and test data.
- .4 Manufacturer's written installation or application instructions.
- .5 Evidence of arrangements to procure.
- .3 Provide material and equipment of specified design and quality, performing to published ratings and for which replacement parts are readily available.
- .4 Use products of one manufacturer for equipment or material of same type or classification unless otherwise specified.
2. Manufacturers Instructions .1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.
- .2 Notify *Departmental Representative* in writing of any conflict between these specifications and manufacturer's written instructions. *Departmental Representative* will designate which document is to be followed.
3. Fasteners General .1 All fasteners shall be sizes indicated on Contract Drawings and shall be hot dipped galvanized to CSA G164, unless otherwise noted.
4. Delivery and Storage .1 Deliver, store and maintain packaged material and equipment with manufacturer's seal and labels intact.

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Material and Equipment

Page 2

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- .2 Prevent damage, alteration and soiling of material and equipment during delivery, handling and storage. Immediately remove rejected material and equipment from site.
- .3 Store material and equipment in accordance with supplier's written instructions.
5. Conformance .1 When material or equipment is specified by standard or performance specifications, upon request of *Departmental Representative*, obtain from manufacturer an independent testing laboratory report, stating that material or equipment meets or exceeds specified requirements.
6. Substitution .1 Proposals for substitutions may be submitted only after award of the Contract. Such requests must include statements of respective costs of items originally specified and proposed substitutions.
- .2 Proposals will be considered by *Departmental Representative* only under one of the following circumstances:
- .1 Products selected by tenderer from those specified are not available.
- .2 Delivery date of products from those specified would unduly delay completion of the Contract.
- .3 Alternative products to those specified which are brought to attention of and considered by the *Departmental Representative* as equivalent to those specified and will result in a credit to the Contract amount.
- .3 Should proposed substitution be accepted either in part or in whole, assume full responsibility and costs when substitution affects other work on project. Pay for design or drawing changes required as a result of substitution.

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Material and Equipment

.4 Amounts of all credits arising from approval of substitutions will be determined by *Departmental Representative* and Contract price shall be reduced accordingly. No substitutions shall be permitted without prior written approval of *Departmental Representative*.

.5 *Departmental Representative* reserves the right for acceptance or rejection of substitution of materials.

7. Construction

Equipment and Plant .1

Upon request, prove to the satisfaction of *Departmental Representative* that the construction equipment and plant are adequate to manufacture, transport, place and finish work to quality and production rates specified. If inadequate, replace or provide additional equipment or plant as directed and required.

.2 Maintain construction equipment and plant in good operable condition.

8. Damaged and

Rejected Materials .1

Immediately replace, repair or otherwise make good any material damaged, broken or defaced during construction to the satisfaction of *Departmental Representative*.

.2 Contractor shall remove rejected materials from site.

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1. Record Drawings
 - .1 *Departmental Representative* will provide two sets of black and white prints for record drawing purposes.
 - .2 Maintain project record drawings and accurately record deviations from the Contract Documents caused by site conditions and changes ordered and approved by the *Departmental Representative*.
 - .3 Mark changes in red coloured ink.
 - .4 Record following information:
 - .1 Elevations of various elements in relation to Chart Datum.
 - .2 Field changes in dimensions and details.
 - .3 Changes made by Change Order.
 - .5 Make drawings available for *Departmental Representative's* review during the course of construction.
 - .6 At completion of project and prior to final inspection, neatly transfer notations to second set and submit both sets to *Departmental Representative*.

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Cleaning

1. General .1 Conduct cleaning and disposal operations to comply with ordinances and antipollution laws.
.2 Store volatile waste in covered metal containers and remove from premises at end of each working day.
.3 Prevent accumulation of waste which may create hazardous conditions.
2. Cleaning During Construction .1 Maintain the work, at least on a daily basis, free from accumulation of waste material and debris.
.2 Provide on-site containers for collection of waste materials and debris.
.3 Remove waste materials and debris from site.
.4 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet concrete or newly painted surfaces.
3. Final Cleaning .1 In preparation for acceptance of the project on an interim or final certificate of completion, perform final cleaning.
.2 Remove grease, dust, dirt, stains and other foreign materials from finished surfaces.

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Construction/Demolition Waste Management and Disposal

PART 1 - GENERAL

- 1.1 Description of Work .1 Text, schedules and procedures for systematic Waste Management Program for construction, deconstruction, demolition and renovation projects, including:
- .1 Diversion of Material.
 - .2 Waste Audit (WA) - Schedule A.
 - .3 Waste Reduction Workplan (WRW) - Schedule B.
 - .4 Demolition Waste Audit (DWA) - Schedule C.
 - .5 Cost/Revenue Analysis Workplan (CRAW) - Schedule D.
 - .6 Materials Source Separation Program (MSSP).
 - .7 Canadian Governmental Responsibility for the Environment Resources - Schedule E.
- 1.2 Definitions .1 Demolition Waste Audit (DWA): Relates to actual waste generated from project.
- .2 Materials Source Separation Program (MSSP): Consists of series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.
 - .3 Recyclable: Ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse by others.
 - .4 Recycle: Process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
 - .5 Recycling: Process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not

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include burning, incinerating, or thermally destroying waste.

- .6 Reuse: Repeated use of product in same form but not necessarily for same purpose. Reuse includes:
 - .1 Salvaging reusable materials from re-modelling projects before demolition stage for resale, reuse on current project or as storage for use on a future project.
 - .2 Returning reusable items including pallets or unused products to vendors.
- .7 Salvage: Removal of structural and non-structural materials from deconstruction and disassembly projects for the purpose of reuse or recycling.
- .8 Separate Condition: Refers to waste sorted into individual types.
- .9 Source Separation: Acts of keeping different types of waste materials separate beginning from first time they became waste.

1.3 Materials Source Separation Program (MSSP)

- .1 Prepare MSSP and have ready for use prior to project start-up.
- .2 Implement MSSP for waste generated on project in compliance with approved methods and as reviewed by Authorities Having Jurisdiction.
- .3 Provide on-site facilities for collection, handling, and storage of anticipated quantities of reusable and recyclable materials.
- .4 Provide containers to deposit reusable and recyclable materials.

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Construction/Demolition Waste Management and Disposal

- .5 Locate containers in locations to facilitate deposit of materials without hindering daily operations.
 - .6 Locate separated materials in areas which minimize material damage.
 - .7 Collect, handle, store on-site and transport off-site, salvaged materials in separate condition and transport to recycling facility.
- 1.4 Storage, Handling and Protection
- .1 Unless specified otherwise, materials for removal become the Contractor's property.
 - .2 Protect, stockpile, store and catalogue salvaged items.
 - .3 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to approved local facility.
 - .4 Protect structural components not removed for demolition from movement or damage.
 - .5 Support affected structures. If safety of facility is endangered, cease operations and immediately notify the *Departmental Representative* and *Authorities Having Jurisdiction*.
 - .6 Protect surface drainage, mechanical and electrical from damage and blockage.
 - .7 Separate and store materials produced during dismantling of structures in designated areas.
 - .8 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for

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acceptance by designated facilities. On-site source separation is recommended.

- 1.5 Disposal of Wastes .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of any waste into waterways, storm or sanitary sewers.
- .3 Remove materials from deconstruction as deconstruction/disassembly Work progresses.
- .4 Prepare project plan to verify destination and quantities on a material-by-material basis as identified in pre-demolition material audit.
- 1.6 Use of Site and Facilities .1 Execute work with least possible interference or disturbance to normal use of premises.
- .2 Provide security measures which are to be approved by *Departmental Representative*.
- 1.7 Scheduling .1 Coordinate Work with other activities on site to ensure timely and orderly progress of Work.

PART 2 - PRODUCTS

2.1 (NOT USED)

PART 3 - EXECUTION

- 3.1 Application .1 Handle waste materials not reused, salvaged or recycled in accordance with applicable acts, regulations and codes.
- 3.2 Cleaning .1 Remove tools and waste materials at completion of Work and leave work area in clean and orderly condition.
- .2 Clean-up work areas as work progresses.

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- .3 Source separate materials to be reused or recycled into specified sort areas.

3.3 Diversion of Materials

- .1 Separate materials from general waste stream and stockpile in separate piles or containers, as reviewed by *Departmental Representative* and consistent with applicable fire regulations and as follows, at a minimum:
 - .1 Mark containers or stockpile areas.
 - .2 Provide instruction on disposal practices.
- .2 On-site sale or distribution of salvaged materials to third parties will not be permitted.

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1. Related Sections .1 Section 01 33 00 - Submissions / Shop Drawings.
 2. Submittals .1 Submittals: Submit in accordance with Section 01 33 00 - Submissions / Shop Drawings.
 - .2 Defective products shall be rejected, regardless of previous inspections. Replace products at Contractor's expense.
 3. Final Cleaning .1 In preparation for acceptance of the project on an interim or final certificate of completion, perform final cleaning.
 - .2 Remove grease, dust, dirt, stains and other foreign materials from finished surfaces.
 4. As-Builts and Samples .1 Maintain, in addition to requirements in General Conditions, at site for *Departmental Representative*, at least one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to the Contract.
 - .5 Reviewed shop drawings, product data and samples.
 - .6 Field test records.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
 - .2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks and secure storage.
 - .3 Label record documents and file in accordance with Section numbers used in this Specification Document. Label each document "PROJECT RECORD" in neat, large, printed letters.
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- .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
 - .5 Keep record documents and samples available for viewing and inspection by *Departmental Representative*.
5. Recording Actual Site Conditions
- .1 Record information on set of blue line opaque drawings, and in copy of Project Manual, as provided by the *Departmental Representative*.
 - .2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.
 - .3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
 - .4 On Contract Drawings and shop drawings mark each item to record actual construction including, at a minimum:
 - .1 Measured depths of pile tips and driving records.
 - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - .4 Field changes of dimension and detail.
 - .5 Changes made by change orders.
 - .6 Details not on the original Contract Drawings.
 - .7 References to related shop drawings and modifications.
 - .8 Other pertinent information as specified or indicated.

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- .5 Specifications: Mark each item to record actual construction including, at a minimum:
 - .1 Manufacturer, trade name and catalogue number of each product actually installed, particularly optional items and substituted items.
 - .2 Changes made by Addenda and Change Orders.
- .6 Other Documents: Maintain manufacturer's certifications and field test records required by individual specification sections.
- 6. Final Survey .1 Submit final site survey certificate in accordance with Section 01 71 00 - Project Record Documents certifying that elevations and locations of completed Work are in conformance, or where not in conformance, with Contract Documents.