

**Breakwater Repairs****Battery Pt.****Lunenburg, Nova Scotia****Project No.R.074340.001**

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 will 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 will not relieve the Contractor of any duties and responsibilities under the Contract.

## 4. Measurement

Responsibilities

- .1 Notify *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. **Permission and approval must be granted from High Liner Foods to access the site through their property. The contractor is to contact Highliner Foods, 100 Battery Point, Lunenburg, NS, attn.: Jeff Wiest, # 1-902-634-6409.**
- .2 Should interferences occur, take directions from *Departmental Representative*.
- .3 Do not unreasonably encumber site with materials or equipment.
- .4 Move stored products or equipment which interfere with operations of *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 and adjacent properties as a result of operations. Any said damage will be repaired to original condition 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) [1995] [2005] and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements will apply.
- .2 Meet or exceed requirements of specified standards, codes and referenced documents. When a standard or code is outdated, the latest edition will 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 will 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 elevations. Perform all layout work, and
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- 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 will not be allowed any extra compensation or time for completion because of this 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 will 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, 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.
- .3 Submit schedule to and obtain acceptance from *Departmental Representative* for any shut-down or closure of active service or
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facility. Adhere to approved schedule and provide notice to affected parties.

- .4 Where unknown services are encountered, immediately advise *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 will 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 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 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

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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 will be as binding as if called for by both. The Contractor shall understand that the work herein described will be complete in every detail, notwithstanding that every item necessarily involved is not particularly mentioned, and Contractor will be held to provide all labour, materials and equipment necessary for the entire completion of the work and will 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, per General Conditions as stated in the contract.

12. Cutting, Fitting and Patching

- .1 Execute cutting (including excavation), fitting and patching required to make work fit properly.
- .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.
- .3 Obtain *Departmental Representative's* approval before cutting, boring or sleeving,

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- or excavating adjacent to load-bearing members.
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.
- .2 Provide "as built" cross sections of any excavation, dredging or fill work.
14. Payment .1 Payment for all work under this contract to be according to the specification.
- .2 No separate payment will 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.
- .3 Dimensional changes as directed by the *Departmental Representative* to suit existing conditions, but not resulting in additional work or materials, will 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, 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 will be deemed that Contractor is conversant with site conditions. **Permission and approval must be granted from High Liner Foods to access the**
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site through their property. The contractor is to contact Highliner Foods, 100 Battery Point, Lunenburg, NS, attn.: Jeff Wiest, # 1-902-634-6409.

- .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.
- .3 Advise the Canadian Coast Guard, Marine Communication and Traffic Services (MCTS) at 1-800-686-8676 sufficiently in advance of commencement of work or deploying or removing site markings in order to allow for appropriate notice to shipping/mariners.
- .4 Any material or equipment used in the construction will be marked in accordance to the "Collision Regulations" of the Canadian Shipping Act 2001" when located in the waterway.
16. Maintenance of Shipping .1 Liaise with the local port officials to coordinate activities such that any interference 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 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

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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 sub-contractors must be registered under the Workers Compensation Act and provide evidence of good standing.
- .2 At completion of Contract and before final payment is made, the Contractor will 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 will govern, but in no instance will the standards established by the drawings and this Specification, which exceed such requirements, be reduced.
22. Protection and Repair .1 Repair any damage resulting from operations under this contract. Any damage of adjacent properties impacted during construction must be repaired and returned to original conditions.
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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 with 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 will be disposed of in suitable locations off the site. This includes costs of disposing of contaminated materials such as creosote treated timber. Disposal is the responsibility of the Contractor.
- .2 Material from the work will 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 boreholes 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, items of historical or scientific interest such as cornerstones and contents, commemorative plaques, inscribed tablets, and similar objects found during course of work.
- .2 Give immediate notice to *Departmental Representative* and await written instructions before proceeding with work in this area.
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- .3 Relics, antiquities and items of historical or scientific interest remain her Majesty's property.

Temporary  
Navigational  
Buoys

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

[http://www.ccg-gcc.gc.ca/eng/CCG/ATN\\_Aids\\_To\\_Navigation\\_System](http://www.ccg-gcc.gc.ca/eng/CCG/ATN_Aids_To_Navigation_System)

- .2 The Contractor shall coordinate the bouy 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 bouy's.
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Weigh Scales

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- |                       |    |   |
|-----------------------|----|---|
|                       | .2 | Remove ramps, scales and scale house when no longer required.   |
| 5. <u>Operation</u>   | .1 | <i>Departmental Representative's</i> representative at scales will weigh materials.                     |
| 6. <u>Maintenance</u> | .1 | Maintain scale platform and scale mechanism clean and free from gravel, asphalt, snow, ice, and debris. |
|                       | .2 | Maintain approach ramps in good condition free from sags and ruts.                                      |
|                       | .3 | Have scales retested and recertified if requested by <i>Departmental Representative</i> .               |
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Project Particulars And Measurement

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PROJECT PARTICULARS

1. Description of Work .1 The work under this contract consists of the furnishing of all labour, equipment, materials, transportation and supervision as required by the Tender Documents necessary for the repair of the Battery Pt Breakwater Structure in Lunenburg, Nova Scotia.
- .2 The work includes but is not limited to:
- .1 Repairs to the existing breakwater including the removal, salvage and reinstatement of existing material in conjunction with the placement of new materials to raise and widen the breakwater crest and establish a gravel roadway over the deteriorated concrete deck.

PROJECT MEASUREMENT

1. 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.

2. Measurement For Payment **Division 01**

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 will constitute a lump sum for measurement purposes.

Weigh Scales: Supply, installation, maintenance and removal of weigh scales will be measured for payment by the lump sum.

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Project Particulars And Measurement

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**Division 32**

Granular Base: Supply and installation of granular base, including compaction, will be measured for payment by the square meter placed.

**Division 35**

Corestone: The supply and installation of corestone will be measured by the metric tonne placed.

Filterstone: The supply and installation of filterstone will be measured for payment by the metric tonne placed.

Armourstone: The supply and installation of armourstone will be measured for payment by the metric tonne placed.

Mobilization and Demobilization will be measured for payment by lump sum. Fifty percent (50%) of the allocation for mobilization and demobilization will be paid upon commencing the project and the remainder upon completing the project.

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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 may 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.  |
|    |                           | .4 | Reproductions for submissions: opaque diazo prints.  |
| 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 <i>Departmental Representative</i> .   |
|    |                           | .3 | Accepted samples will become standards of workmanship and material against which, installed work will be checked on project.   |
| 5. | <u>Miscellaneous Data</u> | .1 | Provide certificates, methodologies, designs and test results as required.   |
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Submissions / Shop Drawings

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6. Coordination of Submissions
- .1 Review shop drawings, product data, samples and miscellaneous data prior to submission.
  - .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 copies.
7. Submission Requirements
- .1 Schedule submissions at least 14 days before dates reviewed submissions will be needed.
  - .2 Submit number of opaque diazo 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:
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Submissions / Shop Drawings

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- .1 Date
  - .2 Project title and number.
  - .3 Contractor's name and address.
  - .4 Identification and quantity of each shop drawing, product data and sample submitted.
  - .5 Other pertinent data.
- .4 Submissions shall include:
    - .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 CSA or CGSB numbers.
    - .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 The review of shop drawings by Public Works and Government Services Canada or its authorized consultant is for the sole purpose of ascertaining conformance with the general concept. This review shall not mean that Public Works and Government Services Canada 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
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Submissions / Shop Drawings

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generality of the foregoing, the 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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Health and Safety

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1.1 RELATED WORK

Not used

1.2 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.

1.3 SUBMITTALS

.1 Make submittals in accordance with Section 01 33 00.

.2 Submit site-specific Health and Safety Plan prior to commencement of Work.

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Health and Safety

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.1 Submit within 10 work days of notification of Bid Acceptance. 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 & 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.

.8 Submit WHMIS MSDS - Material Safety Data Sheets.

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1.4 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 (COSH) as well as any other regulations made pursuant to the Act.

.1 The Canada Labour Code can be viewed at:

[www.http://laws.justice.gc.ca/en/L-2/](http://laws.justice.gc.ca/en/L-2/)

.2 COSH can be viewed at:

[www.http://laws.justice.gc.ca/eng/SOR-86-304/ n e .html](http://laws.justice.gc.ca/eng/SOR-86-304/n e .html)

.3 A copy may be obtained at:

Canadian Government Publishing Public Works & Government Services Canada  
Ottawa, Ontario, K1A 0S9 Tel: (819) 956-4800 (1-800-635-7943) Publication No. L31-85/2000 E or F)

.3 Observe construction safety measures of:

.1 Part 8 of National Building Code

.2 Municipal by-laws and ordinances.

.4 In case of conflict or discrepancy between above specified requirements, the more stringent shall apply.

.4 In case of conflict or discrepancy between above specified requirements, the more stringent shall apply.

.5 Maintain Workers Compensation Coverage in good standing for duration of Contract. Provide proof of clearance through submission of Letter in Good Standing.

.6 Medical Surveillance: Where prescribed by legislation or regulation, obtain and

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maintain worker medical surveillance documentation.

1.5 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, sub-contractors 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.

1.6 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 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

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Health and Safety

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traffic around and adjacent to the Work and create a safe environment.

.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. Provide security guard where adequate protection cannot be achieved by other means.

1.7 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 measures to rectify situation and prevent damage or harm. Advise Departmental Representative verbally and in writing.

1.8 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.

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- 1.9 PERMITS
- .1 Post permits, licenses and compliance certificates, specified in section 01 10 10, 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.
- 1.10 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.
- 1.11 PROJECT/SITE CONDITIONS
- .1 Following are potential health, environmental and safety hazards at the site for which Work may involve contact with: Marine Related work and associated hazards. Existing Lighthouse.
  - .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.
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1.12 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.

1.13 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
-

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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.

.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 PWGSC 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.

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.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.

1.14 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.

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.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 Conduct Formal Inspections on a minimum monthly basis. Use standardized safety inspection forms. Distribute to subcontractors.

.3 Follow-up and ensure corrective measures are taken.

.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.

1.15 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.

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.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.

1.16 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.

.2 Brief persons of disciplinary protocols to be taken for non compliance. Post rules on site.

1.17 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

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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.

1.18 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 \$5000.00.
- .2 Submit report in writing.

1.19 HAZARDOUS PRODUCTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS).
- .2 Keep MSDS data sheets for all products delivered to site.
  - .1 Post on site.
  - .2 Submit copy to Departmental Representative.

1.20 Not used  
1.21 Not used

1.22 CONFINED SPACES

- .1 Abide by occupational health and safety regulations regarding work in confined spaces.
-

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1.23 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.

1.24 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

PART 1- General1.1 REFERENCES

- .1 MBCA: Migratory Birds Convention Act, Environment Canada, 1994.
- .2 Fisheries Act, Department of Fisheries and Oceans Canada.
- .3 Canadian Coast Guard Regulations, Department of Fisheries and Oceans Canada.
- .4 Canadian Shipping Act, Transport Canada, 2001.
- .5 Not used

1.2 DEFINITIONS

- .1 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.
- .2 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.
- .3 Invasive (or alien) species: refers to a species or subspecies introduced outside its normal distribution whose establishment and spread threaten ecosystems, habitats or species with economic or environmental harm.
- .4 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.

1.3 TRANSPORTATION

- .1 Do not overload trucks when hauling aggregate material. Secure contents against spillage.
- .2 Maintain trucks clean and free of mud, dirt and other foreign matter.

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- 
- .3 Not used.
- .4 Avoid potential release of contents and of any foreign matter onto highways, roads and access routes used for the Work. Immediately clean any spillage and soils.
- .5 Before commencement of work, advise the PWGSC Representative of the existing roads and temporary routes proposed to be used to access work areas and to haul material to and from the site.
- .6 Construction activities must comply with all/any conditions of the Navigable Waters Protection Act (NWPA) permit issued by Transport Canada.
- 1.4 DISPOSAL OF DREDGED MATERIAL Not used
- 1.5 CONCRETE PLACEMENT Not used
- 1.6 PETROLEUM, OIL AND LUBRICANTS
- .1 Comply with Federal and Provincial laws, regulations, codes and guidelines for the storage of fuel and petroleum products on site.
- .2 Do not place fuel storage tanks and store fuel or other petroleum products within a 30 meter buffer zone of watercourses and wetlands. Do not fuel or lubricate equipment within this 30 meter buffer zone. Obtain approval from Departmental Representative of acceptable location on site for fuel storage and equipment service.
- .3 Do not dump petroleum products or any other deleterious substances on ground or in the water.
- .4 Be diligent and take all necessary precautions to avoid spills and contaminate the soil and water (both surface and subsurface) when
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handling petroleum products on site and during fueling and servicing of vehicles and equipment.

- .5 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.
- .6 Maintain vehicles and equipment in good working order to prevent leaks on site.
- .7 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.

1.7 DISPOSAL OF WASTES

- .1 Do not bury rubbish, demolition debris and waste materials on site.
- .2 Dispose and recycle 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.

1.8 WATER QUALITY

- .1 Conduct work near the water in such a manner to limit turbidity and reduce sediment suspension in the water to an absolute minimum at all times.
  - .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 Departmental Representative to minimize interference and
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impact to harbour users.

- .3 Do not washdown equipment within a 30 meter buffer zone of a wetland, watercourse or other identified environmentally sensitive area.

1.9 BLASTING

Not used

1.10 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 Equip equipment and machinery with purposely designed mufflers to reduce noise on site to lowest possible level. Maintain mufflers in good operating condition at all times.

1.11 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.

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- .6 Should nests of migratory birds in wetlands be encountered during work, immediately notify the Departmental Representative for directives to be followed.
- .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.
- 1.12 FISH AND FISH HABITAT
- .1 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.
- .2 To minimize the possibility of fish habitat contamination, 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 other all miscellaneous tools and equipment previously used in a marine environment.
- .3 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.
- .4 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
-

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- 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.
  - .5 Do not perform cleaning and washdown within a 30 meter buffer zone of a wetland, watercourse or other identified environmentally sensitive area.
  - .6 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,
    - .3 Include the following:
      - .1 Date and location where equipment was previously used in a watercourse or wetland;
      - .2 Type of work performed.
      - .3 Dates of washdown for each piece of equipment;
      - .4 Cleaning method and cleaning agent(s) used.
  - .7 Keep Record of Assurance Logbook updated from project to project. Upon request, submit logbook to *Departmental Representative* review.
  - .8 Abide by requirements and recommendations of the Federal Department of Environment and the Department of Fisheries and Oceans - Habitat Management Division in cleaning and washdown of equipment.
- 
- 1.13 AIR QUALITY .1 Keep airborne dust and dirt resulting from the work on site to an absolute minimum.
-

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Environmental Protection Procedures  
for Marine Work

- .2 Apply dust control measures to roads, parking lots and work areas.
- .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 control during the entire course of the work.
- .4 Do not use oil or any other petroleum products for dust control.

1.14 FIRES

- .1 Fires and burning of rubbish on site is not permitted.

1.15 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 and *Departmental representative* will be contacted.

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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 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*.
    - .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 test.
    - .4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.
    - .2 Notify *Departmental Representative*

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Testing Laboratory Services

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- sufficiently in advance of operations to allow for assignment of laboratory personal and scheduling of test.
- .2 Notify *Departmental Representative* sufficiently in advance of operations to allow for assignment of laboratory personal and scheduling of test.
- .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 *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 Contract and make good damage resulting from Contractor's use of roads . **Permission and approval must be granted from High Liner Foods to access the site through their property. The contractor is to contact Highliner Foods, 100 Battery Point, Lunenburg, NS, attn.: Jeff Wiest, # 1-902-634-6409.**
    - .3 The contractor is to 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 will be considered incidental to this contract. Any delays associated with such activity will 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 in the office.
    - .2 Keep one up-to-date copy of contract documents, bulletins and other materials as specified under Section 01 10 10.
  
  3. Departmental Representative's Site Office .1 Provide temporary office for sole use of *Departmental Representative*, complete with heat and lights. Insulated office required

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## Temporary Facilities

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- during October to May. Locate on or adjacent to site.
- .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 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 *Departmental Representative*.
  - .4 Washroom facilities not required in the office. Provide outside sanitary facilities to approval.
  - .5 Equip office with six chairs, flat 1200 X 2400 X 25 table with writing surface and 4 drawer lockable filing cabinet.
  - .6 Maintain 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 to make his own arrangements for on-site storage areas.
5. Sanitary Facilities
- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
  - .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.
6. Parking
- .1 Contractor to make own arrangements to provide parking space for work force.

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## Temporary Facilities

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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.
- .2 Install temporary facilities for power such as pole lines and cables to approval of local power supply authority.
8. Water Supply .1 Arrange, pay for and maintain temporary water supply in accordance with governing regulations and ordinances.
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 caused by the work.
- .2 Types and location of barricades, etc. to 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.
10. Security .1 Contractor to make his own arrangements for security of his equipment, materials, damages resulting from fire and theft.
11. Site Signs and Notices .1 Only Project Identification and Consultant/ 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*.

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Temporary Facilities

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- .3 Signs and notices for safety or instruction to be in English and French languages, or commonly understood graphic symbols.
12. Removal of  
Temporary  
Facilities
- .1 Remove temporary facilities from site when directed by *Departmental Representative*.
- .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 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 manufacturers instructions. *Departmental Representative* will designate which document is to be followed.
  3. Fastenings-General .1 All fastenings are to be the sizes indicated on the contract plans and are to be hot dipped galvanized to CSA-G164 Latest Edition 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, adulteration and soiling of material and equipment during delivery, handling and storage. Immediately remove rejected material and equipment from site.
  - .2 Prevent damage, adulteration 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 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 substitution may be submitted only after award of Contract. Such requests must include statements of respective costs of items originally specified and proposed substitutions.
- .2 Proposals will be considered by *Departmental Representative* if:
    - .1 Products selected by tenderer from those specified, are not available, or
    - .2 Delivery date of products from those specified would unduly delay completion of Contract, or
    - .3 Alternative products to those specified, which are brought to attention of, and considered by *Departmental Representative* as equivalent to those specified and will result in a credit to 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

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Material and Equipment

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design or drawing changes required as result of substitution.

- .4 Amounts of all credits arising from approval of substitutions will be determined by *Departmental Representative* and Contract price will be reduced accordingly. No substitutions will be permitted without prior written approval of *Departmental Representative*.
- .5 The Department Representative reserves the right for acceptance or rejection of substitution of materials.

## 7. Construction

Equipment and Plant .1

On 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.

- .2 Maintain construction equipment and plant in good operating order.

## 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 Remove rejected materials from site.

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Project Record Documents

Page 1

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1. Record Drawings
    - .1 *Departmental Representative* will provide two sets of white prints for record drawing purposes.
    - .2 Maintain project record drawings and accurately record deviations from contract documents caused by site conditions and changes ordered by *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 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

Page 1

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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 create hazardous conditions.
  2. Cleaning During Construction .1 Maintain the work, at least on a daily basis free from accumulations 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.

**Job Title****Job Location****Job Location****Project No.**

Concrete Formwork and Falsework

Page 1

**Formerly SECTION 03100**PART 1 - GENERAL

- 1.1 Related Work .1 Refer to other Specification Sections for related information.
- .2 Refer to **Section 01 33 00** for Shop Drawing/Submissions requirements.
- 1.2 Reference Standards .1 Do concrete formwork and falsework in accordance with CSA standard A23.1-94 (or latest edition), Concrete Materials and Methods of Concrete Construction, except where stricter standards specify otherwise.
- .2 CSA S269.1-1975 (or latest edition), Falsework for Construction Purposes
- 1.3 Submissions .1 Shop Drawings:
- .1 **Upon request**, submit to *Departmental Representative* for review four (4) sets of formwork and falsework shop drawings, in accordance with **Section 01 33 00**, at least four (4) weeks prior to erection. All such drawings to be stamped and signed by a Professional Engineer registered in the Province of Nova Scotia.
- .2 Clearly indicate method and schedule of construction, materials, arrangement of joints, ties, shores, liners, and locations of temporary embedded parts. Comply with CSA S269.1 for falsework drawings.
- .2 Product Data/Samples:
- .1 Provide product data and samples for form ties.
- .3 Provide submissions in accordance with **Section 01 33 00**.
- 1.4 Measurement for Payment .1 This item will not be measured separately.

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Concrete Formwork and Falsework

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PART 2 - PRODUCTSPART 2 - PRODUCTS

- 2.1 Materials
- .1 Formwork lumber: plywood and wood formwork materials to CSA A23.1
  - .2 Falsework materials: to CSA S269.1
  - .3 Form stripping agent: colourless mineral oil, free of kerosene, with viscosity between 70 and 110 s Saybolt Universal, 15 to 14 mm<sup>2</sup>/s at 40DC, flash-point minimum 150DC, open cup.
  - .4 Form ties: removable or snap-off metal ties, fixed or adjustable length, free of devices leaving holes larger than 25 mm diameter in concrete surface. **When forms are removed, no metal will be less than 50 mm from the surface of the concrete.**

PART 3 - EXECUTION

- 3.1 Erection
- .1 Verify lines and levels before proceeding with formwork and ensure dimensions agree with drawings.
  - .2 Construct forms to produce finished concrete conforming to shape, dimensions, locations and levels indicated within tolerances required by CSA A23.1
  - .3 Line forms with material only as approved by *Departmental Representative*.
  - .4 Construct falsework in accordance with CSA S269.1
  - .5 Align form joints and make watertight. Keep form joints to minimum.
  - .6 **Use 25 mm chamfer strips on external corners.**
  - .7 Clean formwork in accordance with CSA A23.1, before placing concrete.

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- .8 Leave formwork in place for at least [seven] days, exclusive for days when temperature falls below 5NC, unless otherwise directed by *Departmental Representative*.
  
- .9 Re-use of formwork and falsework subject to requirements of CSA A23.1
  
- .10 All holes from form ties and rods to be plugged with mortar to requirements of CSA A23.1. **When forms are removed, no metal will be less than 25 mm from the surface of the concrete.**