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PART 1 - GENERAL

1.1 Description of
Work

- .1 The work of this contract involves infilling of an existing water area; construction of a new service area; and repairs and reconstruction of the existing breakwater. The work is to be carried out at West Point Harbour, Prince County, Prince Edward Island and includes but is not limited to:
 - .1 Supply and install a floating silt boom the full length of the construction limits;
 - .2 Salvage and place existing breakwater armour, concrete and fill materials within limits of new work.
 - .3 Supply and place Type 1 Fill (Premium Borrow);
 - .4 Supply and place Type 2 Fill (0.1 to 400kg Corestone);
 - .5 Supply and place Type 3 Fill (200-800kg Filterstone);
 - .6 Supply and place Type 4 Fill (2-4 tonne armourstone);
 - .7 Supply and place geotextile materials;
 - .8 Supply and place surface gravel for new service area. Fine grade to final grades.
- .2 All work to be carried out in accordance with the requirements of these specifications and drawings, construction schedule and time and order of completion.
- .3 Contractor to work with the Harbour Authority and Departmental Representative to coordinate work to not disrupt facility operations.

1.2
Familiarization
with Site

- .1 All bidders, before submitting their tender, should inspect and examine the site and its surroundings and the extent of underground facilities and shall satisfy themselves as to the form and nature of the work and materials necessary for the completion of the work, the means of access to the site, the accommodation they may require, and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. No allowance shall be made subsequently in this connection on account of error or negligence to properly observe and determine the conditions that will apply.
- .2 Obtain prior permission from both the Harbour Authority and the Departmental Representative before carrying out such site inspection.

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- .3 Contractors are required to review the list of potential site hazards provided in Section 01 35 28 Part 1.9 Hazard Assessments and submit a Site Specific Safety Plan for the purpose of visiting the site.
- .4 No extra payment will be made to the Contractor, above the Contract Price, for costs resultant from failure to determine the conditions that affect the Work.
- .5 Bidders are required to wear all appropriate personal protective equipment and take all precautionary measures necessary to ensure their safety during any pre-tender site visits.
- .6 Geotechnical information has been obtained for the site. Geotechnical Report 121910312 prepared by Stantec dated January 15, 2010 is available upon request to the Departmental Representative.

1.3 Codes and Standards

- .1 Perform work in accordance with the National Building Code of Canada, National Fire Code of Canada and any other code of provincial or local application, including all amendments up to project tender closing date provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
- .2 Materials and workmanship must meet or exceed requirements of specified standards, codes and referenced documents.
- .3 Unless otherwise indicated, the latest editions of referenced standards, codes and documents will apply.

1.4 Weigh Scales

- .1 Weigh scales are to be certified as having met the requirements of Statutes of Canada, Chapter 36, Weights and Measures Act, 1971 and subsequent amendments. Display certificate in a prominent position.
- .2 No payment will be made for materials weighed on non certified scales.

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1.5 Documents
Required

- .1 Maintain at job site, one copy each of the following:
- .1 Contract Drawings
 - .2 Specifications
 - .3 Addenda
 - .4 Reviewed Shop Drawings
 - .5 Change orders
 - .6 Other modifications to contract
 - .7 Field test reports
 - .8 Copy of approved work schedule
 - .9 Health & Safety Plan and other Safety related documents
 - .10 Waste Reduction Work Plan
 - .11 Material Source Separation Plan
 - .12 Permits and Approvals
 - .13 Other documents as stipulated elsewhere in the Contract Documents.

1.6 Permits

- .1 Contractor to apply and pay for any necessary municipal, provincial, federal, or other permits, approvals or authorizations prior to commencing work.
- .2 Submit to Departmental Representative, copy of application submissions and approval documents received for above referenced authorities.

1.7 Existing
Buildings

- .1 Execute work with least possible interference or disturbance to adjacent building operations, occupants, public and normal use of premises, parking lot and lookout area. Arrange with Harbour Authority and Departmental Representative to facilitate execution of work.
- .2 Provide temporary dust screens, barriers, warning signs in locations where renovation and alteration work is adjacent to areas which will be operative during such work.

1.8 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

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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 Make all required connections to existing services, carry out such operations at the times directed by governing authorities, and which minimum disturbance to vehicular traffic.
- .4 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties, local authority and public utilities.
- .5 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .6 Protect, relocate or maintain existing active services as required. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction over service. Record locations of maintained, re-routed and abandoned service lines.
- .7 Record the locations of maintained, re-routed and abandoned service lines. Include on the record drawings specified in Section 01 78 00 - Closeout Submittals.

1.9 Contractor's Use of Site

- .1 Do not unreasonably encumber site with materials or equipment. Coordinate storage of material and equipment (if space is available) with the Harbour Authority.
- .2 Move stored products or equipment, which interfere with operations of Users or other Contractor's or access to water by others.
- .3 Obtain and pay for use of additional off-site storage or work areas needed for operations.
- .4 Maintain all roads, streets, lanes, walks, driveways, free from mud and debris tracked from construction site, on a daily basis.

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1.10 Security

- .1 Watch the site at all times, including weekends and holidays. No compensation will be paid by Public Works and Government Services Canada (PWGSC) for materials of work stolen, lost, damaged or destroyed.

1.11 Setting Out
the Work

- .1 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated.
- .2 Obtain services of a Registered Prince Edward Island Land Surveyor to provide layout of coordinated points provided.
- .3 Protect and maintain all survey/reference points. If survey/ reference points are damaged or moved, replace as per (.2) above.
- .4 Provide devices and qualified personnel as required to layout and construct work.
- .5 Supply all stakes and markers required for laying out work.
- .6 Do detail surveys to create required cross sections, during construction, as outlined in Section 35 31 23.13.
- .7 Provide and maintain temporary buoys, to define the work, as outlined in Section 35 31 23.13.

1.12 Limit of
Operations

- .1 The Contractor will only be allowed to limit operations within the defined project limits unless authorized in writing by Departmental Representative.
- .2 The Contractor shall facilitate and make safe the continued use and operation of all other areas of the site at all times.

end

1.1 Related
Sections

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 35 28 - Health and Safety Requirements.
- .3 Section 01 74 21 - Construction/ Demolition Waste Management.

1.2 Submittals
Sections

- .1 Upon award of contract and prior to commencement of work, submit to Departmental Representative the following work management documents:
 - .1 Work Schedule as specified herein;
 - .2 Shop Drawing Submittal Schedule specified in Section 01 33 00;
 - .3 Waste Management Plan specified in Section 01 74 21;
 - .4 Health and Safety Plan specified in Section 01 35 28.

1.3 Work Schedule

- .1 Upon acceptance of bid submit:
 - .1 Detailed work schedule submitted within 5 calendar days of contract award.
- .2 Schedule to indicate all calendar dates from commencement to completion of all work within the time stated in the accepted bid.
- .3 Provide sufficient details in schedule to clearly illustrate entire implementation plan, depicting efficient coordination of tasks and resources, to achieve completion of work on time and permit effective monitoring of work progress in relation to established milestones.
- .4 Work schedule content to include as a minimum the following:
 - .1 Bar (GANTT) Charts, indicating all work activities, tasks and other project elements, their anticipated durations, planned dates for achieving key activities and major project milestones supported with;
 - .2 Generally bar charts derived from commercially available computerized project management system are preferred but not mandatory.
- .5 Schedule work in cooperation with the Department

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Representative. Incorporate within work schedule, items identified by Departmental Representative during review of schedule.

- .6 Completed schedule shall be approved by Departmental Representative. When approved, take necessary measures to complete work within scheduled time. Do not change schedule without Departmental Representative's approval.
- .7 Schedule updates:
 - .1 Submit when requested by Departmental Representative.
 - .2 Provide information and pertinent details explaining reasons for necessary changes to implementation of plan.
 - .3 Identify problem areas, anticipate delays, impact on schedule and proposed corrective measures to be taken.
- .8 Departmental Representative will make interim reviews and evaluate progress of work based on approved schedule. Frequency of such reviews will be as decided by Departmental Representative. Address and take corrective measures on items identified by reviews and as directed by Departmental Representative. Update schedule accordingly.
- .9 In every instance, change or deviation from the work schedule, no matter how minimal the risk or impact on safety or inconvenience to tenant or public might appear, will be subject to prior review and approval by the Departmental Representative.
- .10 Be aware that the facility must be kept operational for the full duration of work of this contract. Services to areas used by fishers and tourist users must also be maintained at all times.
- .11 Make allowance in the construction schedule of the following specific activities:
 - .1 Preconstruction meeting
 - .2 Deficiency review
 - .3 Deficiency clean-up
 - .4 Construction close-out
 - .5 Substantial completion
 - .6 Project record drawings (as-built) submission
 - .7 Warranties submission
- .12 The contract completion date has been set such that the work will be complete prior to the start of both the fishing season and the related holding season. Noting there is an intake line within the harbor for the holding facility.

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- .13 It is estimated that the following percent of Work will be complete:
1. 30% by April 1, 2015; and
 2. 70% between April 1, 2015 and the end of Contract (as defined by the Tender documents).

1.4 Operational Restrictions

.1 The Contractor must recognize that nearby parking area and wharf access will be affected by implementation of this contract. The Contractor must perform the work with utmost regard to the safety and convenience of the general public. All work activities must be planned and scheduled with this in mind. The Contractor will not be permitted to disturb any portion of the area without providing temporary facilities as necessary to ensure safe and direct passage through disturbed or otherwise affected areas.

- .2 Facility circulation maintained:
- .1 Ensure that entrances, roadways, loading zones and other circulation routes are maintained free and clear providing safe and uninterrupted passage for facility users and public at all times during the entire work.
 - .2 Maintain those areas clean and free of construction materials and equipment.
 - .3 Maintain fire escape routes accessible and fire fighting access open all times for the duration of the project.
 - .4 Supply, place and maintain barriers around all buildings to permit safe access to buildings. No heavy equipment or trucks will be permitted to cross barriers.

- .3 Dust and Dirt Control:
- .1 Effectively plan and implement dust control measures and cleaning activities as an integral part of all construction activities. Review all measures with the Departmental Representative before undertaking work, especially for major dust generating activities.
 - .2 Roadway Dust Control shall be considered incidental to the project. No extra compensation will be paid for water ordered and applied on Saturdays, Sundays or holidays
 - .3 Fresh water to Departmental Representative's approval.
 - .4 Apply water with equipment approved by Departmental Representative.
 - .5 Apply water with distributors equipped with means of shut-off and with spray system to ensure uniform application.
 - .6 Do not allow debris and construction waste to

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accumulate on site and contribute to the propagation of dust.

.7 As work progresses, maintain construction areas in a tidy condition at all times.

.8 Inform workers and make them sensitive to the need for dust and dirt control. Stringently enforce rules and regulations, immediately address non-compliance.

1.5 Project Meetings

- .1 Schedule and administer project meetings, held on a minimum bi-monthly basis, for entire duration of work and more often when directed by Departmental Representative as deemed necessary due to progress of work of particular situation.
- .2 Prepare agenda for meetings.
- .3 Notify participants in writing 4 working days in advance of meeting date.
 - .1 Ensure attendance of all subcontractors;
 - .2 Departmental Representative will provide list of other attendees to be notified.
- .4 Hold meetings at project site or where approved by Departmental Representative.
- .5 Preside at meetings and record minutes.
 - .1 Indicate significant proceedings and decisions. Identify action items by parties.
 - .2 Distribute to participants by mail or by facsimile within 3 calendar days after each meeting.
 - .3 Make revisions as directed by Departmental Representative.
 - .4 Departmental Representative will advise whether submission of minutes by email is acceptable. Decision will be based on compatibility of software among participants.

1.6 Work Coordination

- .1 The general contractor is responsible for coordinating the work of the various trades and pre-determining where the work of such trades interfaces with each other.
 - .1 Designate one person from own employ having overall responsibility to review contract documents and shop drawings, plan and manage such coordination.
- .2 The general contractor shall convene meetings between trades whose work interfaces and ensure that they are

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fully aware of the areas and the extent of where
interfacing is required.

.1 Provide each trade with the plans and specs of
the interfacing trade, as required, to assist them in
planning and carrying out their respective work.

.3 Submission of shop drawings and ordering of
prefabricated equipment or prebuilt components shall
only occur once coordination meeting for such items
has taken place between trades and all conditions
affecting the work of the interfacing trades has been
made known and accounted for.

.4 Work Cooperation:

.1 Ensure cooperation between trades in order to
facilitate the general progress of the work and avoid
situations of spatial interference.

.2 Ensure that each trade provides all other trades
reasonable opportunity for the completion of the work
and in such a way as to prevent unnecessary delays and
the need to remove and replace completed work.

.5 No extra costs to the Contract will be considered by
the Departmental Representative as a result of
Contractor's failure to effectively coordinate all
portions of the work. Disputes between the various
trades as a result of their not being informed of the
areas and extent of interface work shall be the sole
responsibility of the General Contractor to be resolved
at own cost.

end

- 1.1 Testing Requirements Specified Elsewhere
- .1 Additional and particular requirements for inspection and testing to be carried out and paid for by the Contractor are specified under various technical sections of the specifications.
- 1.2 Appointment and Payment
- .1 The Contractor will arrange and pay for the services of an independent testing firm to carry out the following tests:
.1 All inspection and testing in accordance with the requirements of 1.4 below.
- 1.3 Contractor's Related 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.
- .2 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.
- .3 Pay costs for uncovering and making good work that is covered before required inspection or testing is completed and accepted by Departmental Representative.
- .4 Provide Departmental Representative with two (2) sets of fully documented test reports, submitted immediately following the testing operations.
- 1.4 Miscellaneous Inspection and Testing Requirements
- .1 Testing of material at source, including collection of sample materials by testing firm to verify compliance with material specifications.
- .2 Follow up testing of material delivered to sites.
- .3 Monitoring placement and verifying compaction and placement.
- .4 Materials to be tested as provided above include:
.1 Type 1 Fill - Premium Borrow.
.2 Type 2 Fill - Corestone.
.3 Type 3 Fill - Filterstone.
.4 Type 4 Fill - Armourstone.
.5 Surface Gravel.
- .5 Carry out tests as specified under Section 01 45 00.
- end

PART 1 - GENERAL

1.1 Related
Sections

- .1 Section 01 14 10 - Scheduling and Management of Work.
- .2 Section 01 35 28 - Health and Safety Requirements.
- .3 Section 01 78 00 - Closeout Submittals.
- .4 Section 31 23 33.01 - Excavating, Trenching and Backfilling.
- .5 Section 31 32 19.01 - Geotextiles.
- .6 Section 35 31 23.13 - Rubble Mound Breakwater.

1.2 Administrative

- .1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .5 Notify Departmental Representative in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for

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deviations.

- .6 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .7 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative's review.
- .8 .1 Submittal Format:
 - .1 Paper originals, or alternatively clear and fully legible photocopies of originals. Facsimiles are not acceptable, except in special circumstances pre-approved by Departmental Representative. Poorly printed non-legible photocopies or facsimiles will not be accepted and be returned for re-submission.
 - .2 Rock Submission:
 - .1 Sample quantities to be determined by Testing Laboratory.
- .9 Make changes or revision to submissions which Departmental Representative may require, consistent with contract documents and resubmit.
- .10 Keep one reviewed copy of each submission on site.

1.3 Shop Drawings and Product Data

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by the Contractor to illustrate details of a portion of work.
- .2 Submit shop drawings bearing stamp and signature of qualified professional engineer registered or licensed in the Province of Prince Edward Island, Canada.
- .3 Shop Drawing Submittal Schedule:
 - .1 Submit, within 10 working days of contract award, in format acceptable to Departmental Representative, a submittal schedule listing all shop drawings to be submitted for project as specified in various sections of the specifications.
 - .2 Schedule to indicate proposed submission date for each item, status of review and anticipated product delivery date to site. Track all submissions for entire project.
 - .3 As work progresses, revise schedule identifying

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- items which have been reviewed and finalized and indicating those outstanding.
- .4 Update schedule at stipulated dates or project time intervals predetermined and agreed upon with Departmental Representative at commencement of work.
- .4 Shop Drawing Quantities: submit sufficient copies required by the General Contractor and sub-contractors, plus 3 copies which will be retained by Departmental Representative.
- .5 Shop Drawings Format:
- .1 Opaque white prints or photocopies of original drawings or standard drawings modified to clearly illustrate work specific to project requirements. Maximum sheet size to be 1000 x 707 mm.
- .2 Product data from manufacturer's standard catalogue sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products, to be original full colour brochures, clearly marked indicating applicable data and deleting information not applicable to project.
- .3 Poorly legible drawings, photocopies or facsimiles will not be accepted and will be returned not reviewed.
- .6 Shop Drawings Content:
- .1 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where items or equipment attach or connect to other items or equipment, confirm that all interrelated work have been coordinated, regardless of section or trade from which the adjacent work is being supplied and installed.
- .7 Allow 7 days for Departmental Representative's review of each submission.
- .8 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .9 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.
- .10 Be advised that costs and expenses incurred by Departmental Representative to conduct more than one review of incorrectly prepared shop drawing submittal

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for a particular material, equipment or component of work may be assessed against the Contractor in the form of a financial holdback to the Contract.

- .11 Accompany submissions with transmittal letter containing:
 - .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.
 - .5 Other pertinent data.
- .12 Submissions include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Relationship to adjacent work.
- .13 After Departmental Representative's review, distribute copies.
- .14 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .15 The review of shop drawings by Public Works and Government Services Canada (PWGSC) is for sole purpose of ascertaining conformance with general concept.
 - .1 This review shall not mean that PWGSC approves detail design inherent in shop drawings,

PWGSC
Breakwater Repair and
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responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.

.2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

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1.1 Related Sections

- .1 Section 31 23 33.01 - Excavating, Trenching and Backfilling.
- .2 Section 35 31 23.13 - Rubble Mound Breakwater.

1.2 Measurement Procedures

- .1 Traffic Control will not be measured for payment. Work performed under this section will be incidental to work involved in other sections.

1.3 References

- .1 Manual of Uniform Traffic Control Devices for Canada.
- .2 Prince Edward Island - Temporary Workplace Traffic Control Manual 2005.

1.4 Protection of Public Traffic

- .1 Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul materials or equipment.
- .2 When working on travelled way:
 - .1 Place equipment in position to present minimum of interference and hazard to travelling public.
 - .2 Do not leave equipment on travelled way overnight.
 - .3 Do not close lanes without approval of Departmental Representative.
 - .4 Provide and maintain road access and egress to buildings, adjacent parking and wharf areas.

1.5 Informational and Warning Devices

- .1 Provide and maintain signs, and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.

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- .2 Supply and erect signs, delineators, barricades and miscellaneous warning devices as specified in Part D, Temporary Conditions Signs and Devices, of UTCD manual and Prince Edward Island Temporary Workplace Traffic Control Manual 2005.
- .3 Place signs and other devices in locations recommended in UTCD manual and Prince Edward Island Temporary Workplace Traffic Control Manual 2005.
- .4 Meet with Departmental Representative prior to commencement of Work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of Departmental Representative. At a minimum, provide the following:
 - .1 40 traffic cones
 - .2 40 plastic traffic posts
 - .3 2 Construction Zone signs
 - .4 2 Construction Ahead signs
 - .5 2 Work Zone signs
 - .6 2 Construction Ends signs
- .5 Continually maintain traffic control devices in use by:
 - .1 Checking signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
 - .2 Removing or covering signs which do not apply to conditions existing from day to day.
- .6 All signs to be legible in both of Canada's Official Languages.

1.6 Control of Public Traffic

- .1 Provide competent flag persons, trained in accordance with, and properly equipped as specified in, UTCD manual and Prince Edward Island - Temporary Workplace Traffic Control Manual 2005 in following situations:
 - .1 When public traffic is required to pass working vehicles or equipment that block all or part of travelled roadway.
 - .2 When it is necessary to institute one-way traffic system through construction area or other blockage where traffic volumes are heavy, approach speeds are high and traffic signal system is not in use.
 - .3 When persons or equipment are employed on travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.
 - .4 When entering or exiting construction site with equipment, trucks or personnel.

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.5 Where temporary protection is required while other traffic control devices are being erected or taken down.

.6 For emergency protection when other traffic control devices are not readily available.

.7 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.

.8 Delays to public traffic due to contractor's operators: maximum 5 minutes.

.2 On a daily basis, sweep for 250 meters on each side of the construction limits. Remove all mud, silt, clay and other materials to result in roadway being free from any foreign materials.

1.7 Operational Requirements

.1 Maintain existing conditions for traffic throughout period of contract except that, when required for construction under contract and when measures have been taken as specified and approved by Departmental Representative to protect and control public traffic.

.2 Maintain existing conditions for traffic crossing right-of-way.

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1.1 Related
Sections

- .1 Section 01 10 10 - General Instructions.
- .2 Section 01 14 10 - Scheduling and Management of Work.
- .3 Section 01 33 00 - Submittal Procedures.

1.2 Submittals

- .1 Submit to Departmental Representative copies of the following documents, including updates:
 - .1 Site Specific Health and Safety Plan.
 - .2 Building Permit, compliance certificates and other permits obtained.
 - .3 Letter of good standing from Provincial Workers Compensation organization.
 - .4 Reports and directives issued by Federal and Provincial Safety Officer or other authority having jurisdiction.
 - .5 Accident and Incident Reports.
 - .6 MSDS data sheets.
- .2 Upon request by Departmental Representative, submit other documents and reports as stipulated to be produced and maintained by Federal and Provincial Occupational Health and Safety Regulations and as specified herein.
- .3 Submit above documents in accordance with Section 01 33 00.

1.3 Compliance
Requirements

- .1 Comply with the Occupational Health and Safety Act for the Province of Prince Edward Island, and the Occupational Health and Safety Act Regulations made pursuant to the Act.
- .2 Comply with Canada Labour Code Part II, and the Canada Occupational Safety and Health Regulations made under Part II of the Canada Labour Code.
- .3 Observe and enforce construction safety measures required by:
 - .1 National Building Code of Canada;
 - .2 Provincial Worker's Compensation Board;
 - .3 Municipal statutes and ordinances.
 - .4 Use the latest edition of standards, codes and documents unless otherwise indicated.

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- .4 In the 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 will advise on the course of action to be followed.
- .5 A copy of the Canada Labour Code, Part II may be obtained by contacting:

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)

- .6 Maintain Workers Compensation Coverage for duration of Contract.

1.4 Responsibility

- .1 Be responsible for health and safety of persons on site, of property and for protection of persons and public circulating adjacent to work operations to extent that they may be affected by conduct of the Work.
- .2 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 statutes, regulations and ordinances, and with site-specific Health and Safety Plan.

1.5 Site Control and Access

- .1 Control work site and entry points to construction areas.
 - .1 Delineate and isolate construction areas from other areas of site by use of appropriate means.
 - .2 Post notices and signage at entry points and at other strategic locations identifying entrance onto site to be restricted to authorized persons only.
 - .3 Signage must be professionally made, bilingual in both official languages or display internationally understood graphic symbols.
- .2 Approve and grant access to site only to workers and authorized persons.
 - .1 Immediately stop non-authorized persons from circulating in construction areas and remove from site.
 - .2 Provide site safety orientation to all persons before granting access. Advise of site conditions,

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hazards and mandatory safety rules to be observed on site.

- .3 Secure site at night time to extent required to protect against unauthorized entry. Provide security guard where protection cannot be achieved by other means.
- .4 Ensure persons granted access to site wear appropriate personal protective equipment (PPE) suitable to work and site conditions.
 - .1 Provide such PPE to authorized persons who require access to perform inspections or other approved purposes.
- .5 Contractor is to be solely responsible for the construction, the maintenance and the structural and load carrying capability of any infill areas, haul roads, or causeways that the Contractor deems as necessary to complete the work.

1.6 Protection

- .1 Carry out work placing emphasis on health and safety of the public, facility personnel, construction workers and protection of the environment.
- .2 Erect safety barricades, lights and signage on site to effectively delineate work areas, protect pedestrian and vehicular traffic around and adjacent to work and to create a safe working environment.
- .3 Should unforeseen or peculiar safety related hazards or conditions become evident during performance of work, immediately take measures to rectify the situation and prevent damage or harm. Advise Departmental Representative verbally and in writing.

1.7 Filing of Notice

- .1 File Notice of Project and other Notices with Provincial authorities prior to commencement of work.
 - .1 Departmental Representative will assist in locating address for Filing Notice of Project if needed.

1.8 Permits

- .1 Post on site permits, licenses, and compliance certificates.
- .2 Where particular permit or compliance cannot be obtained at the required stage of work, notify

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Departmental Representative in writing and obtain his/her approval to proceed before carrying out that portion of work.

1.9 Hazard Assessments

- .1 Conduct site specific health and safety hazard assessment before commencing project and during course of work. Identify risks and hazards resulting from site conditions, weather conditions and work operations.
 - .1 Perform ongoing assessments addressing new risks and hazards as work progresses.
 - .2 Also, conduct assessment when the scope of work has been changed by Change Order and when potential hazard or weakness in current health and safety practices are identified by Departmental Representative or by an authorized safety representative.
- .2 Record results in writing and address in Health and Safety Plan.
- .3 Be aware of the following list of potential hazards at the Site:
 - .1 Slippery, wet, jagged or uneven walking and driving surfaces.
 - .2 Material handling equipment, including cranes, may be present.
 - .3 Public vehicle, vessel and pedestrian traffic.
 - .4 All other hazards that are present when working on a breakwater structure.
 - .5 Working in a harsh marine environment.
 - .6 Working over water.
 - .7 Overhead power lines.
 - .8 Active marine fishery and recreational harbor.
 - .9 Unknown load carrying capacity of all structures at the harbor facility.
- .4 Above list of hazards shall not be construed as being complete nor all inclusive of hazards that may be encountered on site nor hazards that may be encountered during the work.
- .5 Maintain on site one boat with gas motor and licensed operator in case of emergency.
- .6 Tidal conditions are present, address issues relative to tides on site specific health and safety hazard assessment.
- .7 Keep copy of all assessments and MSDS sheets on site.

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1.10 Health and
Safety Meetings

- .1 Attend pre-construction health and safety meeting conducted by Departmental Representative. Having the following persons in attendance:
 - .1 Site Superintendent;
 - .2 Person designated to perform on-site health and safety site supervision;
 - .3 Departmental representative will advise of date, time and location.
- .2 Conduct health and safety meetings and tool box briefings on site. Hold on a regular and pre-scheduled basis during entire work in accordance with requirements and frequency as stipulated in Provincial Occupational Health and Safety Regulations.
 - .1 Keep workers informed of potential hazards and provide safe work practices and procedures to be followed.
 - .2 Take written minutes and post on site.

1.11 Health and
Safety Plan

- .1 Develop written site-specific Project Health and Safety Plan, based on hazard assessments, prior to commencement of work.
 - .1 Submit copy to Departmental Representative within 7 calendar days of acceptance of bid.
 - .2 Submit updates as work progresses.
- .2 Health and Safety Plan shall contain three (3) parts with the following information:
 - .1 Part 1 - Hazards: List of individual health risks and safety hazards identified by hazard assessment process.
 - .2 Part 2 - Safety Measures: Engineering controls, personal protective equipment and safe work practices used to mitigate hazards and risks listed in Part 1 of Plan.
 - .3 Part 3a - Emergency Response: Standard operating procedures, evacuation measures and emergency response in the occurrence of an accident, incident or emergency.
 - .1 Include response to all hazards listed in Part 1 of Plan.
 - .2 Evacuation measures to complement the Facility's existing Emergency Response and Evacuation Plan. Obtain pertinent information from Departmental Representative.
 - .3 List names and telephone numbers of officials to contact, including:
 - .1 General Contractor and all Subcontractors;

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- .2 Federal and Provincial Departments as stipulated by laws and regulations and local emergency resource organizations, as needed based on nature of emergency or accident;
- .3 Officials from PWGSC and Site Facility Management. Departmental Representative will provide list.
- .4 Part 3b - Site Communications:
 - .1 Procedures used on site to share work related safety issues between workers, subcontractors and general contractor.
 - .2 List of critical tasks and work activities, to be communicated with the Facility Manager, which has risk of affecting tenant operations, or endangering health and safety of facility personnel and the general public. Develop list in consultation with the Departmental Representative.
- .3 Prepare Health and Safety Plan in a three column format, addressing the three parts specified above, as follows:

Column 1	Column 2	Column 3
Part 1	Part 2	Part 3a / 3b
Identified	Safety	Emergency Response &
Hazards	Measures	Site Communications

- .4 Develop plan in collaboration with subcontractors. Address work activities of all trades. Revise and update plan as subcontractors arrive on site.
- .5 Implement and enforce compliance with requirements of plan for full duration of work to final completion and demobilization from site.
- .6 As work progresses, review and update plan. Address additional health risks and safety hazards identified by ongoing hazard assessments.
- .7 Post copy of plan and updates on site.
- .8 Submission of the Health and Safety Plan and updates to the Departmental Representative is for review and information purposes only. Departmental Representative's receipt, review and any comments made of the plan shall not be construed to imply approval in part or in whole of such plan by Departmental Representative and shall not be interpreted as a warranty of being complete and accurate or as a confirmation that all health and safety requirements

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of the Work have been addressed and that it is legislative compliant. Furthermore, Departmental Representative's review of the plan shall not relieve the contractor of any of his legal obligations for Occupational Health and Safety provisions specified as part of the work and those required by provincial legislation.

1.12 Safety
Supervision and
Inspections

- .1 Designate one person to be present on site at all times, responsible for supervising health and safety of the work.
 - .1 Person to be competent in Occupational Health and Construction Safety as defined in the Provincial Occupational Health and Safety Act.
- .2 Assign responsibility, obligation and authority to such designated person to stop work as deemed necessary for reasons of health and safety.
- .3 Conduct regularly scheduled informal safety inspections of work site on a minimum bi-weekly basis.
 - .1 Note deficiencies and remedial action taken in a log book or diary.
- .4 Keep inspection reports on site.

1.13 Training

- .1 Ensure that all workers and other persons granted access to site are competently trained and knowledgeable on:
 - .1 Safe use of tools and equipment;
 - .2 How to wear and use personal protective equipment (PPE);
 - .3 Safe work practices and procedures to be followed in carrying out the work;
 - .4 Site conditions and minimum safety rules to be observed on site, as given at site orientation session.
 - .5 Wearing flotation devices if working in proximity of waterway.

1.14 Minimum Site
Safety Rules

- .1 Notwithstanding the requirement to abide by Federal and Provincial Health and Safety Regulations, the following safety rules shall be considered minimum requirements to be obeyed by all persons granted site access:
 - .1 Wear personal protective equipment (PPE) appropriate to function and task on site; the minimum

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requirements being hard hat, safety footwear, eye protection and flotation device;

- .2 Immediately report unsafe activity or condition at site, near-miss accident, injury and damage;
 - .3 Maintain site in tidy condition;
 - .4 Obey warning signs and safety tags.
- .2 Brief workers on site safety rules and on disciplinary measures to be taken by Departmental Representative for violation or non-compliance of such rules. Post rules on site.

1.15 Accident Reporting

- .1 Investigate and report the following incidents and accidents:
- .1 Those as required by Provincial Occupational Health and Safety Act and Regulations;
 - .2 Injury requiring medical aid as defined in the Canadian Directory of Safety Terms-1987, published by the Canadian Society of Safety Engineers (C.S.S.E.) as follows:
 - .1 Medical Aid Injury: any minor injury for which medical treatment was provided and the cost of which is covered by Worker's Compensation Board of the province in which the injury was incurred.
 - .3 Property damage in excess of \$5,000.00;
 - .4 Interruption to facility operations with potential loss to a federal department in excess of \$5,000.00;
 - .5 Those which require notification to Worker's Compensation Board or other regulatory agencies as stipulated by applicable law or regulations.
- .2 Send written report to Departmental Representative for all above cases.

1.16 Tools and Equipment Safety

- .1 Routinely check and maintain tools, equipment and machinery for safe operation.
- .2 Conduct checks as part of site safety inspections. When requested, submit proof that checks and maintenance have been carried out.
- .3 Tag and immediately remove from site items found faulty or defective.

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1.17 Hazardous
Products

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

1.18 Powder
Actuated Devices

- .1 Use powder actuated fastening devices only after receipt of written permission from Departmental Representative.

1.19 Posting of
Documents

- .1 Post on site safety documentation as stipulated by Authorities having jurisdiction and as specified herein. Place in a common visible location.

1.20 Site Records

- .1 Maintain on site a copy of all health and safety documentation and reports specified to be produced as part of the work and received from authorities having jurisdiction.
- .2 Upon request, make available to Departmental Representative and to other authorized safety representative for review. Provide copy when directed by Departmental Representative.

1.21 Safety Boat

- .1 Maintain on site at all times one boat complete with gas motor and operator to assist in rescue operations if needed.

end

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 01 74 21 - Construction/Demolition Waste Management.
- .2 Section 31 32 19.01 - Geotextiles.

1.2 Measurement Procedures

- .1 Measure Floating Silt Boom on a lump sum basis. The lump sum basis shall include all materials, tools, equipment and labour necessary to carry out and maintain the work.
- .2 Measure geotextile for material separation in accordance with Section 31 32 19.01.

PART 2 - PRODUCTS

2.1 Materials

- .1 Materials for geotextiles to meet requirements specified under "Geotextiles" Section 31 32 19.01.
- .2 Flotation shall be provided by either PVC pipe with closed ends or foam and shall have sufficient buoyancy to provide continuous support and a minimum 100 mm freeboard. Minimum flotation typically 375 mm diameter.
- .3 Silt curtain load lines attached along the flotation material will be 12 mm steel cable or 25 mm nylon or polypropylene rope.

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PART 3 - EXECUTION

3.1 Preparation

- .1 The silt curtain of the boom will have a sleeve sewn along the entire top edge so as to contain the flotation and the load line within the sleeve. A sleeve is also sewn along the bottom edge so as to contain the ballast. The ballast will hold the fabric down and prevent sediment laden water from seeping out under the bottom of the curtain.
- .2 The silt boom should be placed a minimum of 5 meters beyond the work area. The silt curtain depth should be 750 mm deeper than the maximum expected high-tide water depth.
- .3 Anchors (kedge anchors, concrete blocks, and danforth anchors) will be used to provide positive positioning to ensure the silt curtain will not be dislocated.
- .4 Provide sewn in chain or other means to ensure bottom of silt boom rests on basin bottom.

3.2 Maintenance

- .1 The silt boom will be maintained in a like-new condition. Repairs required because of damages will be made immediately or as instructed by the Site Representative.
- .2 A sufficient amount of replacement geotextile filter fabric and flotation material will be maintained on site for emergency repairs.

3.3 Decommissioning

- .1 Following completion of all construction activities in the contract, the contractor will dismantle the entire silt boom. This work will include the removal of all flotation, silt curtains fabric, steel cable, steel chain anchors and all other items incorporated into the work.

end

1.1 REFERENCES

- .1 WHMS: Workplace Hazardous Materials Information System, Health Canada.
- .2 Transportation of Dangerous Goods Act. Transport Canada, updated 2009-06-16.
- .3 Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters, Department of Fisheries and Oceans Canada, 1998.
- .4 MBCA: Migratory Birds Convention Act, Environment Canada, updated 2010-12-10.
- .5 Canadian Coast Guard Regulations, Department of Fisheries and Oceans Canada.
- .6 Canadian Shipping Act, Transport Canada, updated 2013-12-01.
- .7 AWPA: American Wood Preserver Association
- .8 NPA: Navigation Protection Act, Transport Canada, updated 2014-04-01.

1.2 DEFINITIONS

- .1 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.
- .2 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
- .3 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.
- .4 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.

- .5 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 Transport hazardous materials and hazardous waste in compliance with Federal Transportation of Dangerous Goods Act.
- .2 Do not overload trucks when hauling material. Secure contents against spillage.
- .3 Maintain trucks clean and free of mud, dirt and other foreign matter.
- .4 Avoid potential release of contents and of any foreign matter onto highways, roads and access routes used for the Work. Take extra care when hauling material and other hazardous materials. Immediately clean any spillage and soils.
- .5 Before commencement of work, advise the Departmental 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 All project work must follow the Canada Shipping Act regulations and requirements for inspection and certification of vessels used in the project as well as the appropriate training and certification of competency for operators.
- .7 Comply with any/all conditions of a Navigation Protection Act permit issued by Transport Canada.

1.4 HAZARDOUS MATERIAL HANDLING

- .1 Handle and store hazardous materials on site in accordance with WHMIS procedures and requirements.
- .2 Store all hazardous liquids in location and manner to prevent their spillage into the environment.
- .3 Maintain written inventory of all hazardous materials kept on site. List product name, quantity and storage date.

- .4 Keep MSDS data sheets on site for all items.

1.5 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 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 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.
- .8 All work equipment must be free from loose petroleum fluid or lubricants harmful to the marine environment.

1.6 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 project waste management requirements specified in section 01 74 21.

.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 laws, regulations, codes and guidelines.

1.7 SOIL QUALITY

.1 Any stockpiled soil must be covered and/or dyked to prevent erosion and release of sediment laden water. Wherever possible, exposed soil should be replanted or sodded to ensure soil stabilization.

.2 Excavated material is to be dewatered and stabilized for reuse within the work.

1.8 WATER QUALITY

.1 Conduct work in such a manner to limit turbidity and reduce sediment suspension in the water to an absolute minimum at all times.

.2 Visually monitor the water turbidity of the surrounding areas adjacent to the work and up to the established dredge limit of 200 meter.

.1 Should excessive change occur in the turbidity beyond the 200 meters which differs from existing conditions of the surrounding water bodies, such as a distinct color difference; notify the Departmental Representative to obtain appropriate mitigation measures to be followed.

.3 The contract completion date has been set in advance of the opening of the fishing (and holding) season at the facility.

.4 Do not wash down equipment within a 30 meter buffer zone of a wetland, watercourse or other identified environmentally sensitive area.

.5 Any construction debris entering the marine environment will be retrieved.

.6 The construction material used must be clean and non-toxic (free of fuel, oil, grease, and/or any contaminants).

.7 A silt curtain must be installed before commencing the

work; it must be maintained throughout; and it must be removed at completion.

- .8 Excavated material reused in the service area must be stabilized to ensure that new fill can be placed upon it and that the all fill material remains in the service area and does not enter any water body.
- .9 Do not enter/impact any wetlands without prior approval from the Departmental Representative.
- .10 Heavy machinery and equipment must be operated from a dry platform. Temporary causeways or access roads must be constructed to ensure that equipment is out of the water at all times.

1.9 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 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. All loads are to be properly secured.
- .4 Adequate signage and safety measures must be supplied during transportation of materials and equipment to the harbour.
- .5 Where work may affect the water quality within the harbour or in adjacent fishing or aquaculture areas schedule the work with the Harbour Authority and Departmental Representative to mitigate any possible impact.

1.10 BIRD AND BIRD HABITAT

- .1 Become knowledgeable with 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

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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.
 - .1 Do not disturb nest site and neighboring 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.
- .7 Ensure that food scraps and garbage are not left at the work site.
- .8 Vegetated buffer zones will be created around nests to avoid impacting nests or birds caring for pre-fledged chicks at the direction of the Departmental Representative.

1.11 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 arrival at the site and before use in or over the body of water.
- .4 Conduct cleaning and washing operations as follows:

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- .1 Scrap 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.
- .5 Do not perform equipment cleaning or wash down 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 wash downs 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 wash down 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 for review.
- .8 Abide by requirements and recommendations of the Federal Department of Environment Canada and the Department of Fisheries and Oceans - Habitat Protection and Sustainable Development Branch in cleaning and wash down of equipment.

1.12 AIR QUALITY

- .1 Keep airborne dust and dirt resulting from the work on site to an absolute minimum.
- .2 Apply dust control measures to roads, parking lots and work areas.

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- .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.

1.13 FIRES

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

end

PART 1 - GENERAL

- 1.1 Related Sections .1 Section 31 23 33.01 - Excavating, Trenching and Backfilling.
- 1.2 Inspection .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents.
- .5 Quality control is considered incidental to the work.
- 1.3 Independent Inspection Agencies .1 Independent Inspection/Testing Agencies may be engaged by Departmental Representative for purpose of additional inspecting and/or testing portions of Work. Cost of such services will be borne by Departmental Representative. All other testing shall be paid for by the Contractor as outlined under Section 01 29 83 "Payment Procedures for Testing Laboratory".
- .2 Provide equipment required for executing inspection and testing by appointed agencies.
- .3 Employment of additional inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4 If defects are revealed during inspection and/or

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testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to Departmental Representative. Pay costs for retesting and reinspection.

- .5 The Contractor shall be required to provide the services of an independent testing firm to carry out specified tests and to submit reports.

1.4 Access to Work

- .1 Allow inspection/testing agencies access to Work.
- .2 Co-operate to provide reasonable facilities for such access.

1.5 Rejected Work

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 Material designated for the work may be rejected at any time if it does not meet the requirements of the contract documents.

1.6 Reports

- .1 The Contractor shall provide and pay for the following:
 - .1 Submit 3 copies of inspection and test reports to Departmental Representative.
 - .2 Provide copies of reports from quarry, manufacturer or fabricator of material being inspected or tested.
 - .3 Rock Reports:
 - .1 Provide reports of Type 2, 3 and 4 (ie core, filter and armourstone) fill and gravel as specified. At a minimum, provide two of each of the following tests:
 - .1 Specific Gravity;
 - .2 Absorption;
 - .3 Micro Deval;
 - .4 Soundness;

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- .5 Freeze Thaw.
- .4 Provide report of Type 1 Fill (Premium Borrow) as specified. At a minimum, the following tests are required.

<u>Test</u>	<u>Procedure</u>	<u>Frequency</u>
Determination of % passing 75 um sieve	ASTM C-117	One per 1000 tonnes as delivered to the job.
Standard Proctor Density	ASTM D-698	Same as above.
Optimum Moisture	ASTM D-698	Same as above.
Field Density Determination	ASTM D-2922	One per 200 m2 (top 4 - 300 mm thick lifts only) Min. 100 tests
Thickness Determination		Same as above.

end

PART 1 - GENERAL

1.1 Site Access
and Parking

- .1 Build and maintain temporary access roads as required and provide snow removal and dust control during period of work.
- .2 Maintain new and existing roads and parking areas at site, where used by Contractor, for duration of contract.
 - .1 Keep clean and free of mud and dirt by washing on a regular basis.
 - .2 Provide snow removal in areas located within construction site or enclosed by work (if required).
 - .3 Make good and repair damage resulting from Contractor's use of existing roads, asphalted areas and lawns on site.

1.2 Contractor's
Site Office

- .1 Be responsible for and provide own site office, including electricity, heat, lights and telephone. Locate site office as directed by Departmental Representative and in coordination with the Harbour Authority.

1.3 Material
Storage

- .1 Locate site storage trailers in location of least interference with existing facility operations as approved by the Harbour Authority.
- .2 Material storage space on site is limited.

1.4 Sanitary
Facilities

- .1 Provide sanitary facilities for workforce in accordance with governing regulations and ordinances.
- .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.5 Power

- .1 Arrange, pay for and maintain temporary electrical power supply in accordance with governing regulations and ordinances.

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- .2 Supply and install all temporary facilities for power such as pole lines, meter socket, underground cables, etc., as required and to approval of local power supply authority.
- 1.6 Water Supply
 - .1 Arrange, pay for and maintain temporary water supply in accordance with governing regulations and ordinances.
- 1.7 Construction Sign and Notices
 - .1 Erect a self-supporting project sign in location provided by Departmental Representative.
 - .2 Departmental Representative will provide a vinyl sign facing for installation by Contractor on sign framework. Sign frame to be plywood face of approximately 1200x2400mm in size, complete with required wood framing at 400 mm o.c. and support posts. All materials, other than vinyl sign facing, to be supplied and installed by Contractor.
 - .3 Install sign plumb and level in neat wood framework and securely anchor in ground by posts to withstand wind pressure of 160 km/h.
 - .4 Contractor or subcontractor advertisement sign boards are not permitted on site.
 - .5 Safety and Instruction Signs and Notices:
 - .1 Signs and notices for safety and instruction shall be in both official languages or commonly understood graphic symbols conforming to CAN3-Z321.
 - .6 Maintenance and Disposal of Site Signs:
 - .1 Maintain approved signs and notices in good condition for duration of project and dispose of off site on completion of project or earlier if directed by Departmental Representative.
- 1.8 Removal of Temporary Facilities
 - .1 Remove temporary facilities from site when directed by Departmental Representative.

end

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PART 1 - GENERAL

- | | | |
|--|----|--|
| <u>1.1 Installation and Removal</u> | .1 | Provide temporary controls in order to execute work expeditiously. |
| | .2 | Remove from site all such work after use. |
| | | |
| <u>1.2 Guardrails and Barricades</u> | .1 | Provide secure, rigid guardrails and barricades around work area to prevent any access by the public or the harbor users. |
| | | |
| <u>1.3 Access to Site</u> | .1 | Provide and maintain access roads, sidewalks crossings, ramps and construction runways as may be required for access to work. |
| | | |
| <u>1.4 Public Traffic Flow</u> | .1 | Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights or lanterns as required to perform work and protect public. |
| | | |
| <u>1.5 Fire Routes</u> | .1 | Maintain access to property including overhead clearances for use by emergency response vehicles. |
| | | |
| <u>1.6 Protection for Off-site and Public Property</u> | .1 | Protect surrounding private and public property from damage during performance of work. |
| | .2 | Be responsible for damage incurred. |
| | | |
| <u>1.7 Waste Management and</u> | .1 | Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management. |

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Temporary Barriers
and Enclosures

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Disposal

PART 2 - PRODUCTS

2.1 Materials

- .1 Barricades:
 - .1 All pedestrian or vehicular traffic control devices required by Municipal Regulations, as interpreted by the Municipal Authority having jurisdiction, to safely direct and/or control all traffic in the areas of construction.
 - .2 All pedestrian or vehicular traffic control devices as required to safely direct and/or control all traffic in the areas of construction.

PART 3 - EXECUTION

3.1 Installation

- .1 Erect temporary barricades where required before any construction work takes place.
- .2 Barricades to remain in place and be maintained by Contractor during entire construction period, except as noted in 3.2.1 below.

3.2 Removal

- .1 Barricades may be removed in areas of work where all site work restitution is completed and the area has been accepted by the Departmental Representative.

end

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1.1 General

- .1 Use new material and equipment unless otherwise specified.
- .2 Within 7 days of written request by Departmental Representative, submit the following information for materials and products proposed for supply:
 - .1 Name and address of manufacturer, supplier or quarry;
 - .2 Trade name, model and catalogue number;
 - .3 Performance, descriptive and test data;
 - .4 Manufacturer's installation or application instructions;
 - .5 Evidence of arrangement to procure.
- .3 Use products of one manufacturer for equipment or material of same type or classification unless otherwise specified.
- .4 All materials are to be supplied by the Contractor.

1.2 Manufacturer's 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 instructions. Departmental Representative will designate which document is to be followed.

1.3 Delivery and Storage

- .1 Deliver, store and maintain packaged material and equipment with manufacturer's seals and labels intact.
- .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.
- .4 Touch up damaged factory finished surfaces to Departmental Representative's satisfaction. Use primer or enamel to match original. Do not paint over

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nameplates.

1.4 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.

1.5 Substitution
of Material

- .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 specified are not available, or;
 - .2 Delivery date of products selected 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 credit to Contract amount;
 - .4 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.
 - .5 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.

1.6 Construction
Equipment and Plant

- .1 On request, prove to the satisfaction of Departmental Representative, that the construction equipment and plant are adequate to safely and efficiently manufacture, transport, place and finish work to lines and grades and 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.

end

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PART 1 - GENERAL

1.1 General

- .1 Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
- .2 Sort volatile waste in covered metal containers, and remove from premises at end of each working day.

1.2 Project Cleanliness

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative.
- .3 Provide on-site containers for collection of waste materials and debris.
- .4 Provide and use marked separate bins for recycling. Refer to Section 01 74 21 - Construction/Demolition Waste Management.
- .5 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .6 Provide adequate ventilation during use of volatile or noxious substances.

1.3 Final Cleaning

- .1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .3 Remove dirt and other disfiguration from exterior surfaces.
- .4 Sweep and wash clean paved areas affected by work.
- .5 Reinstate all disturbed areas.

end

PART 1 - GENERAL

1.1 Related Work

- .1 Section 01 14 10 - Scheduling and Management of Work.
- .2 Section 01 35 44 - Environmental Protection Procedures for Marine Work.
- .3 Section 01 35 43.01 - Floating Silt Boom.
- .4 Section 01 56 00 - Temporary Barriers and Enclosures.
- .5 Section 01 74 11 - Cleaning.
- .6 Section 31 23 33.01 - Excavating, Trenching and Backfilling.
- .7 Section 31 32 19.01 - Geotextiles.
- .8 Section 35 31 23.13 - Rubble Mound Breakwater.

1.2 General

- .1 Carry out work placing maximum emphasis on the areas of:
 - .1 Waste reduction;
 - .2 Diversion of waste from landfill, and;
 - .3 Material recycling.

1.3 Waste Management Plan

- .1 Prior to commencement of work, prepare Waste Management Workplan.
- .2 Workplan to include:
 - .1 Waste reduction practices;
 - .2 Material source separation process;
 - .3 Procedures for sending recyclables to recycling facility;
 - .4 Procedures for sending non-salvageable items and waste to approved waste processing facility or landfill site.
 - .5 Training and supervising workforce on waste management at site.
- .3 Workplan to incorporate waste management requirements specified herein and in other sections of the

specifications.

- .4 Develop Workplan in collaboration with all subcontractors to ensure all waste management issues and opportunities are addressed.
- .5 Submit copy of Workplan to Departmental Representative for review.
 - .1 Make revisions to Plan as directed by Departmental Representatives.
- .6 Implement and manage all aspects of Waste Management Workplan for duration of work.
- .7 Revise Plan as work progresses addressing new opportunities for diversion of waste from landfill.

1.4 Waste Reduction

- .1 Develop waste reduction program.
- .2 Structure program to prioritize actions, with waste reduction as first priority, followed by salvage and recycling effort, then disposal as solid waste.
- .3 Identify materials and equipment to be:
 - .1 Salvaged for resale by Contractor;
 - .2 Sent to recycling facility;
 - .3 Sent to waste processing/landfill site for their recycling effort;
 - .4 Disposed of in approved landfill site.
- .4 Reduce construction waste during installation work.
- .5 Develop other strategies and innovative procedures to reduce waste.

1.5 Material Source Separation Process

- .1 Develop and implement material source separation process at commencement of work as part of mobilization and waste management at site.
- .2 Provide on-site facilities to collect, handle and storage anticipated quantities of reusable, salvageable and recyclable materials.
 - .1 Use suitable containers for individual collection of items based on intended purpose.
 - .2 Locate to facilitate deposit but without hindering daily operations.
 - .3 Clearly mark containers and stockpiles as to

purpose and use.

- .3 Establish methods whereby hazardous and toxic waste materials, and their containers, encountered or used in the course work are properly isolated, stored on site and disposed in accordance with applicable laws and regulations from authorities having jurisdiction.

1.6 Worker Training and Supervision

- .1 Provide adequate training to workforce, through meetings and demonstrations, to emphasize purpose and worker responsibilities in carrying out the Waste Management Plan.
- .2 Waste Management Coordinator: designate one full-time person on site, experienced in waste management and having knowledge of the purpose and content of Waste Management Plan to:
 - .1 Oversee and supervise waste management during work.
 - .2 Provide instructions and directions to all workers and subcontractors on waste reduction, source separation and disposal practices.
- .3 Post a copy of Plan in a prominent location on site for review by workers.

1.7 Disposal Requirements

- .1 Burying or burning of rubbish and waste materials is prohibited.
- .2 Disposal of waste, volatile materials, mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers is prohibited.
- .3 Dispose of waste only at approved waste processing facility or landfill sites approved by authority having jurisdiction.
- .4 Contact the authority having jurisdiction prior to commencement of work, to determine what, if any, construction waste materials have been banned from disposal in landfills. Take appropriate action to isolate such banned materials at site of work and dispose in strict accordance with provincial and municipal regulations.
- .5 Collect, bundle and transport salvaged materials to be recycled in separated categories and condition as

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directed by recycling facility. Ship materials only to approved recycling facilities.

- .6 Sale of salvaged items by Contractor to other parties not permitted on site.

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PART 1 - GENERAL

1.1 Related
Sections

- .1 Section 01 78 00 - Closeout Submittals.

1.2 Inspection and
Declaration

- .1 Contractor's Inspection: Coordinate and perform, in concert with subcontractors, an inspection and check of all Work. Identify and correct deficiencies, defects, repairs and perform outstanding items as required to complete work in conformance with Contract Documents.
 - .1 Notify Departmental Representative in writing when deficiencies from Contractor's inspection have been rectified and that Work is deemed to be complete and ready for Departmental Representative's inspection of the completed work.
- .2 Departmental Representative's Inspection: Accompany Departmental Representative during all interim and final inspections of the Work.
 - .1 Address defects, faults and outstanding items of work identified by such inspections.
 - .2 Advise Departmental Representative when all deficiencies identified have been rectified.
- .3 Correct all discrepancies before Departmental Representative will issue the Certificate of Completion.

end

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PART 1 - GENERAL

1.1 Related
Sections

- .1 Section 01 10 10 - General Instructions.
- .2 Section 01 33 00 - Submittal Procedures.
- .3 Section 01 77 00 - Closeout Procedures.

1.2 Project Record
Drawings

- .1 Departmental Representative will provide 2 white print sets of contract drawings and 2 copies of specifications manual specifically for "as-built" purposes.
- .2 Maintain at site one set of the contract drawings and specifications to record actual as-built site conditions.
- .3 Maintain up-to-date, real time as-built drawings and specifications in good condition and make available for inspection by the Departmental Representative upon request.
- .4 As-Built Drawings:
 - .1 Record changes in red ink on the prints. Mark only on one set of prints and at completion of work, neatly transfer notations to second set (also by use of red ink).
 - .2 Submit both sets to Departmental Representative prior to application for Certificate of Substantial Performance.
 - .3 Stamp all drawings with "As-Built Drawings." Label and place Contractor's signature and date.
 - .4 Show all modifications, substitutions and deviations from what is shown on the contract drawings or in specifications.
 - .5 Record the following information:
 - .1 Depths of various elements in relation to survey datum;
 - .2 Horizontal and vertical location of various elements in relation to Geodetic Datum;
 - .3 Field changes of dimension and detail;
 - .4 Location of all capped or terminated services and utilities;
 - .5 All design elevations, sections and

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details dimensioned and marked up to consistently report finished installation conditions;

.6 Any details produced in the course of the contract by the Departmental Representative to supplement or to change existing design drawings;

.7 All change orders issued over the course of the contract must be documented on the finished as-built documents, accurately and consistently depicting the changed condition as it applies to all affected drawing details.

.5 As-Built Specifications: Legibly mark in red each item to record actual construction, including:

.1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly items substituted from that specified;

.2 Changes made by Addenda and Change Orders;

.3 Mark up both copies of specifications, stamp "as-built", sign and date similarly to drawings as per above clause.

.6 Maintain As-Built document current as the contract progresses. Departmental Representative will conduct reviews and inspections of the documents on a regular basis. Failure to maintain as-builts current and complete to satisfaction of the Departmental Representative shall be subject to financial penalties in the form of progress payment reductions and holdback assessments.

1.3 Surveyed Sections .1 Do detail surveys as outlined in Section 35 31 23.13.

end