

1.1 SCOPE

- .1 The work covered under this contract consists of the furnishing of all plant, labour, equipment and material for the structural concrete pile protection jacket installation on steel H-pile bearing piles at structure 402 in Wedgeport, NS, in strict accordance with specifications and accompanying drawings and subject to all terms and conditions of contract.

1.2 DESCRIPTION OF WORK

- .1 In general, work under this contract consists of but will not necessarily be limited to the following:
 - .1 Supply and installation of silt curtains and/or silt booms prior to demolition as per Section 01 35 44 - Environmental Protection Procedures for Marine Work.
 - .2 Demolition, removal and disposal of sections of existing concrete jackets and rebar cages as indicated on drawings.
 - .3 Removal of built up corrosion on existing piles as indicated on drawings.
 - .4 Supply and installation of epoxy adhesive rebar dowels into existing concrete pilecap as indicated on drawings.
 - .5 Supply and installation of steel bearing plates on existing piles as indicated on drawings.
 - .6 Supply and installation of structurally reinforced concrete pile protection jackets as indicated on drawings.

1.3 SITE OF WORK

- .1 Work will be carried out at Wedgeport, Nova Scotia in the location as shown on the accompanying drawings.

1.4 DATUM

- .1 Datum used for this project is Benchmark #4-1971 which has an elevation of 5.533m above chart datum.
- .2 Bidders are advised to consult the Tide Tables issued by Fisheries and Oceans in order to make sure of the tidal conditions affecting work.

1.5 FAMILIARIZATION WITH SITE

- .1 Before submitting a bid, it is recommended that bidders visit the site and its surroundings to review and verify the form, nature and extent of the work, materials needed for the completion of the work, the means of access to the site, severity, exposure and uncertainty of weather, soil conditions, any accommodations they may require, and in general shall obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. 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 Contractors, bidders or those they invite to site are to review specification Section 01 35 28 - Health and Safety Requirements before visiting site. Take all appropriate safety measures for any visit to site, either before or after acceptance of bid.

1.6 CODES AND STANDARDS

- .1 Perform work in accordance with the latest edition of the National Building Code of Canada, FC Standard

373 - Standard for Piers and Wharves (http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/373/page00.shtml), and any other code of provincial or local application including all amendments up to project bid 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.

1.7 SETTING OUT WORK

- .1 Set grades and layout work in detail from control points and grades shown on drawings.
- .2 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated or as directed by Departmental Representative.
- .3 Provide devices needed to layout and construct work.
- .4 Supply such devices as straight edges and templates required to facilitate Departmental Representative's inspection of work.
- .5 Supply stakes and other survey markers required for laying out work.

1.8 COST BREAKDOWN

- .1 Before submitting first progress claim submit breakdown of Contract price in detail as directed by Departmental Representative and aggregating contract price. Departmental Representative will

provide the required forms for application of progress payment.

- .2 Provide cost breakdown in same format as the numerical and subject title system used in this specification project manual and thereafter sub-divided into major work components as directed by Departmental Representative.
- .3 Upon approval by Departmental Representative, cost breakdown will be used as basis for progress payment.

1.9 WORK SCHEDULE

- .1 Submit within 7 work days of notification of acceptance of bid, a construction schedule showing commencement and completion of all work within the time stated on the Bid and Acceptance Form and the date stated in the bid acceptance letter.
- .2 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.
- .3 As a minimum, work schedule to be prepared and submitted in the form of Bar (GANTT) Charts, indicating work activities, tasks and other project elements, their anticipated durations and planned dates for achieving key activities and major project milestones provided in sufficient details and supported by narratives to demonstrate a

reasonable plan for completion of project within designated time. Generally Bar Charts derived from commercially available computerized project management system are preferred but not mandatory.

- .4 Submit schedule updates on a minimum monthly basis and more often, when requested by Departmental Representative, due to frequent changing project conditions. Provide a narrative explanation of necessary changes and schedule revisions at each update.
- .5 The schedule, including all updates, shall be to Departmental Representative's approval. Take necessary measures to complete work within approved time. Do not change schedule without Departmental Representative's approval.
- .6 All work on the project will be completed within the time indicated on the Bid and Acceptance Form.

1.10 ABBREVIATIONS

- .1 Following abbreviations of standard specifications have been used in this specification and on the drawings:
 - CGSB - Canadian Government Specifications Board
 - CSA - Canadian Standards Association
 - NLGA - National Lumber Grades Authority
 - ASTM - American Society for Testing and Materials
- .2 Where these abbreviations and standards are used in this project, latest edition in effect on date of bid call will be considered applicable.

1.11 QUARRY AND
EXPLOSIVES

- .1 Make own arrangements with Provincial authorities and owners of private properties, for the quarrying and transportation of rock and all materials and machinery necessary for work over their property, roads or streets as case may be.

1.12 SITE OPERATIONS

- .1 Arrange for sufficient space adjacent to project site for conduct of operations, storage of materials and so on. Exercise care so as not to obstruct or damage public or private property in area. Do not interfere with normal day-to-day operations in progress at site. All arrangements for space and access will be made by Contractor.
- .2 Remove snow and ice as required to maintain safe access in a manner that does not damage existing structures or interfere with the operations of others.

1.13 PROJECT MEETINGS

- .1 Departmental Representative will arrange project meetings and assume responsibility for setting times and recording minutes.
- .2 Project meetings will take place on site of work unless so directed by the Departmental Representative.
- .3 Departmental Representative will assume responsibility for recording minutes of meetings and forwarding copies to all parties present at the meetings.
- .4 Have a responsible member of firm present at all project meetings.

1.14 PROTECTION

- .1 Store all materials and equipment to be incorporated into work to prevent damage by any means.
- .2 Repair or replace all materials or equipment damaged in transit or storage to the satisfaction of Departmental Representative and at no cost to Canada.

1.15 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 site operations.
- .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 approval from Departmental Representative for any shut-down or closure of active service or facility. This includes disconnection of electrical power and communication services to tenant's operational areas. Adhere to approved schedule and provide notice to affected parties.
- .4 Provide temporary services, when directed by Departmental Representative, to maintain critical facility systems.
- .5 Provide adequate bridging over trenches which cross walkways or roads to permit normal traffic.

- .6 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .7 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.

1.16 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 List of outstanding shop drawings
 - .6 Change Orders
 - .7 Other modifications to Contract
 - .8 Field Test Reports
 - .9 Copy of Approved Work Schedule
 - .10 Site specific Health and Safety Plan and other safety related documents
 - .11 Other documents as stipulated elsewhere in the Contract Documents

1.17 PERMITS

- .1 Obtain and pay for all permits, certificates and licenses as required by Municipal, Provincial, Federal and other Authorities.
- .2 Provide appropriate notifications of project to municipal and provincial inspection authorities.
- .3 Obtain compliance certificates as prescribed by legislative and

regulatory provisions of municipal, provincial and federal authorities as applicable to the performance of work.

.4 Submit to Departmental Representative, copy of application submissions and approval documents received for above referenced authorities.

.5 Submit to Departmental Representative, copy of quarry permit, if applicable, prior to start of quarry operations.

.6 Comply with all requirements, recommendations and advise by all regulatory authorities unless otherwise agreed in writing by Departmental Representative. Make requests for such deviations to these requirements sufficiently in advance of related work.

1.18 CUTTING, FITTING
AND PATCHING

.1 Execute cutting, including excavation, fitting and patching required to make work fit properly.

.2 Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work.

.3 Do not cut, bore, or sleeve load-bearing members.

.4 Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.

1.19 LOCATION OF
EQUIPMENT

.1 Location of cleats, equipment, fixtures, power pedestals and

outlets, shown or specified shall be considered as approximate. Actual location shall be as required to suit conditions at time of installation and as is reasonable. Obtain approval of Departmental Representative.

- .2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.
- .3 Inform Departmental Representative when impending installation conflicts with other new or existing components. Follow directives for actual location.
- .4 Submit field drawings to indicate relative position of various services and equipment when required by Departmental Representative.

1.20 FISH HABITAT

- .1 This work is being conducted in an area where fish habitat may be affected. Perform work to conform with rules and regulations governing fish habitat.
- .2 Contact the Protection Program, Marine Development and Infrastructure Unit in Dartmouth, N.S. at (902) 426-3550, at least 48 hours in advance of starting any work on site.

1.21 NOTICE TO SHIPPING/MARINERS

- .1 Notify the Halifax Marine Communications and Traffic Services' Centre, of Fisheries and Oceans Canada, at (902) 426-9750, ten (10)

days prior to commencement and upon completion of the work, in order to allow for the issuance of Notices to Shipping/Mariners.

- .2 During construction any vessels or barges utilized must be marked in accordance with the provisions of the Canada Shipping Act Collision Regulations.

1.22 ACCEPTANCE

- .1 Prior to the issuance of the Certificate of Substantial Performance, in company with Departmental Representative , make a check of all work. Correct all discrepancies before final inspection and acceptance.

1.23 WORKS COORDINATION

- .1 Responsible for coordinating the work of the various trades, where the work of such trades interfaces with each other.
- .2 Convene meetings between trades whose work interfaces and ensure that they are fully aware of the areas and the extent of where interfacing is required. Provide each trade with the plans and specifications of the interfacing trade, as required, to assist them in planning and carrying out their respective work.
- .3 Canada will not be responsible for or held accountable for any extra costs incurred as a result of the failure to carry out coordination 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 and shall be resolved at no extra cost to Canada.

1.24 CONTRACTOR'S USE OF SITE

- .1 Construction operations, including storage of materials for this contract, not to interfere with the fishing activity and/or operations at this harbour facility.
- .2 Responsible for arranging the storage of materials on or off site, and any materials stored at the site which interfere with any of the day to day activities at or near the site will be moved promptly at the Contractor's expense, upon request by Departmental Representative.
- .3 Contractor will take adequate precautions to protect existing concrete decks and asphalt when operating tracked equipment.
- .4 Exercise care so as not to obstruct or damage public or private property in the area.
- .5 At completion of work, restore area to its original condition. Damage to ground and property will be repaired by Contractor. Remove all construction materials, residue, excess, etc., and leave site in a condition acceptable to Departmental Representative.

1.25 WORK COMMENCEMENT

- .1 Mobilization to project site is to commence immediately after acceptance of bid and submission of Site Specific Safety Plan, unless otherwise agreed by Departmental Representative.

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- .2 Project work on site is to commence as soon as possible, with a continuous reasonable work force, unless otherwise agreed by Departmental Representative.
- .3 Weather conditions, short construction season, delivery challenges and the location of the work site may require the use of longer working days and additional work force to complete the project within the specified completion time.
- .4 Make every effort to ensure that sufficient material and equipment is delivered to site at the earliest possible date after acceptance of bid and replenished as required.
- 1.26 FACILITY SMOKING ENVIRONMENT .1 Comply with smoking restrictions.
- 1.27 INTERPRETATION OF DOCUMENTS .1 Supplementary to the Order of Precedence article of the General Conditions of the Contract, the Division 01 sections take precedence over the technical specification sections in other Divisions of the Specification Manual.
- 1.28 ASBESTOS DISCOVERY .1 Demolition of spray or trowel-applied asbestos can be hazardous to health. Should material resembling spray or trowel-applied asbestos be encountered in course of work, stop work, and notify Departmental Representative immediately. Do not proceed with relevant work until written instructions have been received from Departmental Representative.

PART 1 - GENERAL

1.1 DESCRIPTION

- .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.

1.2 MEASUREMENT FOR PAYMENT

- .1 LUMP SUM ITEMS: The following items are to be measured separately for costing purposes, then combined and submitted as one item under Lump Sum items in the tender Documents:

Division 01

Silt Curtain: All work associated with the supply, installation, maintenance, and removal of silt curtains and/or booms used during demolition will constitute a lump sum for measurement purposes.

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 50 00 of the Specification will constitute a lump sum for measurement purposes.

Mobilization and Demobilization: will be measured for payment by the lump sum. For measurement purposes this item will be considered 50% complete upon commencement of the project and 100% complete upon project completion.

Division 02

Sitework, Demolition, and Removals:

Sitework, demolition, and removals including disposal off-site will be measured for payment by the lump sum including:

.1 All normal removals as required to complete the work. All items to be verified by a site visit prior to submission of a tender.

.2 Removal of existing concrete jackets and rebar cages to extent indicated on drawings.

- .2 UNIT PRICE ITEMS: The following items outlines the unit of measurement for unit price items as indicated in the tender documents:

Division 05

Metals: All miscellaneous metal fabrication indicated on the drawings will be considered incidental to unit price for pile protection jackets. This includes the fabrication and installation of new steel bearing plates.

Structurally Reinforced Concrete Pile Protection Jackets: Supply and installation of structurally reinforced concrete pile protection jackets will be measured by the jacket secured in place. Contractor to provide all plant, equipment, material, and labour including epoxy adhesive with rebar dowels, reinforcing steel, concrete, cleaning of existing piles, steel bearing plates, protection jackets and associated components as incidental to the work. Temporary support of jackets during placement

and curing of concrete is the responsibility of the contractor and all costs associated with this temporary support shall be included in the unit price

PART 1 - GENERAL1.1 SECTION INCLUDES

- .1 Shop drawings and product data.
- .2 Samples.
- .3 Certificates.

1.2 SUBMITTAL GENERAL REQUIREMENTS

- .1 Submit to Departmental Representative for review submittals listed, including shop drawings, samples, certificates and other data, as specified in other sections of the Specifications.
- .2 Submit with reasonable promptness and in orderly sequence so as to allow for Departmental Representative's review and not cause delay in Work. Failure to submit in ample time will not be considered sufficient reason for an extension of Contract time and no claim for extension by reason of such default will be allowed.
- .3 Do not proceed with work until relevant submissions are reviewed by Departmental Representative.
- .4 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .5 Where items or information is not produced in SI Metric units, provide soft converted values.
- .6 Review submittals prior to submission to Departmental Representative. Ensure during review that necessary requirements have been determined and verified, required field measurements or data

have been taken, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents.

.1 Submittals not stamped, signed, dated and identified as to specific project will be returned unexamined by Departmental Representative and considered rejected.

- .7 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .8 Verify field measurements and affected adjacent work and coordinate.
- .9 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .10 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative's review.
- .11 Submittal format: 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 resubmission.
- .12 Make changes or revision to submissions which Departmental

Representative may require, consistent with Contract Documents and resubmit as directed by Departmental Representative. When resubmitting, notify Departmental Representative in writing of any revisions other than those requested.

- .13 Keep one reviewed copy of each submittal document on site for duration of Work.

1.3 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, product data, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Number of Shop Drawings: submit sufficient copies of shop drawings which are required by the General Contractor and sub-contractors plus 2 copies which will be retained by Departmental Representative. Ensure sufficient numbers are submitted to enable one complete set to be included in each of the maintenance manuals specified, if applicable.
- .3 Shop Drawings Content and Format:
 - .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.

.2 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 Non or poorly legible drawings, photocopies or facsimiles will not be accepted and returned not reviewed.

.3 Supplement manufacturer's standard drawings and literature with additional information to provide details applicable to project.

.4 Delete information not applicable to project on all submittals.

.4 Allow 10 calendar days for Departmental Representative's review of each submission.

.5 Adjustments or corrections made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, advise Departmental Representative

in writing prior to proceeding with Work.

- .6 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections and comments are made, fabrication and installation may proceed upon receipt of shop drawings. If shop drawings are rejected and noted to be Resubmitted, do not proceed with that portion of work until resubmission and review of corrected shop drawings, through same submission procedures indicated above.
- .7 Accompany each submission with transmittal letter, containing:
 - .1 Date.
 - .2 Project title and project number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
- .8 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and project 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 Cross references to particular details of contract drawings and

specifications section number for which shop drawing submission addresses.

.6 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 Wiring diagrams.

.9 Single line and schematic diagrams.

.10 Relationship to adjacent work.

.9 After Departmental Representative's review, distribute copies.

.10 The review of shop drawings by the Departmental Representative or their delegated representative is for sole purpose of ascertaining conformance with 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 Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting all requirements of the construction and Contract Documents. 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 all sub-trades.

1.4 SCHEDULES, PERMITS .1
AND CERTIFICATES

- Upon acceptance of bid, submit to Departmental Representative copy of Work Schedule and various other schedules, permits, certification documents and project management plans as specified in other sections of the Specifications.
- .2 Submit copy of permits, notices, compliance Certificates received by Regulatory Agencies having jurisdiction and as applicable to the Work.
- .3 Submission of above documents to be in accordance with Submittal General Requirements procedures specified in this section.

- 1.1 SECTION INCLUDES .1 Fire Safety Requirements.
.2 Hot Work Permit.
- 1.2 RELATED WORK .1 Section 01 35 28 - Health and Safety Requirements.
- 1.3 REFERENCES .1 Fire Protection Standards issued by Fire Protection Services of Human Resources Development Canada as follows:
.1 FC No. 301-latest edition Standard for Construction Operations ((http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/301/page00.shtml)
.2 FC No. 302-latest edition Standard for Welding and Cutting ((http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/302/page00.shtml)
- 1.4 DEFINITIONS .1 Hot Work defined as:
.1 Welding work.
.2 Cutting of materials by use of Torch or other open flame devices.
.3 Grinding with equipment which produces sparks.
- 1.5 SUBMITTALS .1 Submit copy of Hot Work Procedures and sample of Hot Work permit to Departmental Representative for review, within 14 calendar days after notification of acceptance of bid.
.2 Submit in accordance with the Submittal General Requirements specified in Section 01 33 00.

1.6 FIRE SAFETY
REQUIREMENTS

- .1 Implement and follow fire safety measures during Work. Comply with following:
 - .1 National Fire Code, 2010.
 - .2 Fire Protection Standards FC 301 and FC 302.
 - .3 Federal and Provincial Occupational Health and Safety Acts and Regulations as specified in Section 01 35 28.
- .2 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, Departmental Representative will advise on the course of action to be followed.

1.7 HOT WORK
AUTHORIZATION

- .1 Obtain Departmental Representative's written "Authorization to Proceed" before conducting any form of Hot work on site.
- .2 To obtain authorization submit to Departmental Representative:
 - .1 Contractor's typewritten Hot Work Procedures to be followed on site as specified below.
 - .2 Description of the type and frequency of Hot Work required.
 - .3 Sample Hot Work Permit to be used.
- .3 Upon review and confirmation that effective fire safety measures will be implemented during performance of hot work, Departmental Representative will provide authorization to proceed as follows:
 - .1 Issue one written "Authorization to Proceed" covering the entire project for duration of work or;

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- .2 Separate work, or segregate certain parts of work, into individual entities. Each entity requiring a separately written "Authorization to Proceed" from Departmental Representative. Follow Departmental Representative's directives in this regard.
 - .4 Requirement for individual authorization based on:
 - .1 Nature or phasing of work;
 - .2 Risk to Facility operations;
 - .3 Quantity of various trades needing to perform hot work on project or;
 - .4 Other situation deemed necessary by Departmental Representative to ensure fire safety on premises.
 - .5 Do not perform any Hot Work until receipt of Departmental Representative's written "Authorization to Proceed" for that portion of work.
 - .6 In tenant occupied Facility, coordinate performance of Hot Work with Facility Manager through the Departmental Representative. When directed, perform Hot Work only during non-operative hours of Facility. Follow Departmental Representative's directives in this regard.

1.8 HOT WORK
PROCEDURES

- .1 Develop and implement safety procedures and work practices to be followed during the performance of Hot Work.
- .2 Procedures to include:
 - .1 Requirement to perform hazard assessment of site and immediate hot work area for each hot work event in accordance with Hazard Assessment and Safety Plan requirements of Section 01 35 28.
 - .2 Use of a Hot Work Permit system for each hot work event.
 - .3 The step by step process of how to prepare and issue permit.
 - .4 Permit shall be issued by Contractor's site Superintendent, or other authorized person designated by Contractor, granting permission to worker or subcontractor to proceed with hot work.
 - .5 Provision of a designated person to carry out a Fire Safety Watch for a minimum of 60 minutes immediately upon completion of the hot work.
 - .6 Compliance with fire safety codes and standards specified herein and occupational health and safety regulations specified in Section 01 35 28.
- .3 Generic procedures, if used, must be edited and supplemented with pertinent information tailored to reflect specific project conditions. Clearly label as being the Hot Work Procedures applicable to this contract.
- .4 Hot Work Procedures shall clearly establish worker instructions and allocate responsibilities of:
 - .1 Worker(s),

- .2 Authorized person issuing the Hot Work Permit,
 - .3 Fire Safety Watcher,
 - .4 Subcontractors and Contractor.
- .5 Brief all workers and subcontractors on Hot Work Procedures and Permit system established for project. Stringently enforce compliance.
- .1 Failure to comply with the established procedures may result in the issuance of a Non-Compliance Notification at Departmental Representative's discretion with possible disciplinary measures imposed as specified in Section 01 35 28.

1.9 HOT WORK PERMIT

- .1 Hot Work Permit to include, as a minimum, the following data:
 - .1 Project name and project number.
 - .2 Building name, address and specific room or area where hot work will be performed.
 - .3 Date when permit issued.
 - .4 Description of hot work type to be performed.
 - .5 Special precautions required, including type of fire extinguisher needed.
 - .6 Name and signature of person authorized to issue the permit.
 - .7 Name of worker (clearly printed) to which the permit is being issued.
 - .8 Time Duration that permit is valid (not to exceed 8 hours). Indicate start time and date, and completion time and date.
 - .9 Worker signature with date and time upon hot work termination.
 - .10 Specified time period requiring safety watch.

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- .11 Name and signature of designated Fire Safety Watcher, complete with time and date when safety watch terminated, certifying that surrounding area was under continual surveillance and inspection during the full watch time period specified in Permit and commenced immediately upon completion of Hot Work.
 - .2 Permit to be typewritten form. Industry Standard forms shall only be used if all data specified above is included on form.
 - .3 Each Hot Work Permit to be completed in full and signed as follows:
 - .1 Authorized person issuing Permit before hot work commences.
 - .2 Worker upon completion of Hot Work.
 - .3 Fire Safety Watcher upon termination of safety watch.
 - .4 Returned to Contractor's Site Superintendent for safe keeping.
- 1.10 DOCUMENTS ON SITE
- .1 Keep Hot Work Permits and Hazard assessment documentation on site for duration of Work.
 - .2 Upon request, make available to Departmental Representative or to authorized safety representative for inspection.

1.1 RELATED WORK

- .1 Section 01 35 24 - Special Procedures on Fire Safety Requirements.

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 Reports or directions issued by Federal and Provincial Inspectors and other Authorities having jurisdiction.
 - .4 Accident or Incident Reports.
 - .5 MSDS data sheets.
 - .6 Name of Contractor's representative designated to perform health and safety supervision on site.
- .2 Upon request by Departmental Representative, submit reports and other documentation 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 the submittal procedures specified in Section 01 33 00.

1.3 COMPLIANCE REQUIREMENTS

- .1 Comply with the Occupational Health and Safety Act for the Province of Nova Scotia, and the Occupational Health and Safety 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 2010 National Building Code of Canada, Part 8.
 - .2 Provincial Worker's Compensation Board.
 - .3 Municipal statutes and ordinances.
- .4 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, Departmental Representative will advise on the course of action to be followed.
- .5 Maintain Workers Compensation Coverage for duration of Contract. Submit Letter of Good Standing to Departmental Representative at time of submitting the Project Health and Safety Plan and with each Request for Progress Payment.

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, 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.

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.
 - .1 See Section 01 56 00 for minimum acceptable barricades.
- .3 Should unforeseen or peculiar safety related hazard or condition 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 PERMITS

- .1 Obtain building permit, licenses, compliance certificates and other permits as specified in Section 01 10 10 before and during progress of work. Post on site.
- .2 Where particular permit or compliance certificate cannot be obtained at the required stage of work, notify Departmental Representative in writing and obtain Departmental Representative's approval to proceed prior to carrying out that portion of work.

-
- 1.8 HAZARD ASSESSMENTS .1 Conduct site specific health and safety hazard assessment before commencing project and during course of work identifying risks and hazards resulting from site conditions, weather conditions and work operations.
- .1 Perform on-going assessments addressing new risks and hazards as work progresses including when new subtrade or sub-contractor arrives on site.
 - .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 Keep copy of all assessments on site.
-
- 1.9 PROJECT/SITE CONDITIONS .1 The following are known or potential project related health, environmental and safety hazards at site which must be properly managed if encountered during course of work:
- .1 Safety hazards due to existing site conditions and conduct of work at adjacent operational Facility are:
 - .1 Fishing vessels using the harbour
 - .2 The following are known or potential project related safety hazards at site:
 - .1 Working in close proximity of water.

- .2 Use of water crafts and floating platforms.
- .3 Wet and slippery conditions.
- .4 Inclement weather.
- .5 Potential structural weakness of existing structures.
- .6 Heavy equipment activity in the area.
- .7 Heavy lifting.
- .8 Working at heights.
- .9 Cutting tools and other construction power tools.
- .10 Overhead power/utility lines.
- .11 Risk of electric shock.
- .12 Vehicular and pedestrian traffic.
- .13 Confined spaces.

.2 Above list shall not be construed as being complete and inclusive of potential health, and safety hazards encountered during work. Include above items into hazard assessment process.

.3 Obtain from Departmental Representative, copy of MSDS Data sheets for existing hazardous products stored on site or used by Facility personnel.

1.10 HEALTH AND SAFETY MEETINGS .1

Attend pre-construction health and safety meeting conducted by Departmental Representative. Have following persons in attendance:

- .1 Site Superintendent.
- .2 Contractor's designated Health and Safety Site Supervisor.
- .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 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.
 - .2 Federal and Provincial Departments as stipulated by laws and regulations of authorities having jurisdiction and local emergency resource organizations, as needed base on nature of emergency.
 - .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 &	Measures	Site
Hazards		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 on-going 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 hold, 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 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 or those which would otherwise be applicable to the site of the work.

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 safety inspections of work site on a minimum bi-weekly basis.
 - .1 Note deficiencies and remedial action taken in a log book or diary.

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 work.
 - .4 Site conditions and minimum safety rules to be observed on site, as given at site orientation session.

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 personnel protective equipment (PPE) appropriate to function and task on site; the minimum requirements being hard hat, safety footwear and eye protection.
 - .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.
- .3 The following actions or conduct by Contractor, workers and sub-contractors will be considered as nonconformance with the health and safety requirements of the contract for which a Non-compliance Notification will be issued to the General Contractor by the Departmental Representative:
 - .1 Failure to follow the minimum Site safety rules specified above.
 - .2 Negligence resulting in serious injury or major property damage.
 - .3 Deliberate non-compliance with Federal and Provincial Acts and Regulations.
 - .4 Falsification of information in Workers Compensation Reports, safety reports and other health and safety

related documents submitted to Departmental Representative or to Authority having jurisdiction.
.5 Possession of firearms on site.
.6 Possession of non-prescriptive illegal drugs or alcohol.
.7 Action, or lack thereof, resulting in the issuance of Warnings, Fines or Stop Work Orders from a Provincial Authority having jurisdiction.
.8 Violation of other specified health and safety rules and requirements as determined by Departmental Representative.

.4 See elsewhere in this section for details on Non-Compliance Notifications and resulting disciplinary measures.

1.15 ACCIDENT
REPORTING

.1 Investigate and report the following incidents and accidents:
.1 Those as required by Provincial Occupational Safety and Health Act and Regulations.
.2 Injury requiring medical aid as defined in the Canadian Dictionary 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 Workers' Compensation Board of the province in which the injury was incurred.
.3 Property damage in excess of \$5000.00.
.4 Interruption to Facility operations with potential loss to a Federal Department in excess of \$5000.00.

- .5 Those which require notification to Workers 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.
- 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 BLASTING
- .1 Blasting or other use of explosives is not permitted.
- 1.19 POWDER ACTUATED DEVICES
- .1 Use powder actuated fastening devices only after receipt of written permission from Departmental Representative.

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- 1.20 CONFINED SPACES .1 Carry out work in confined spaces in compliance with:
- .1 Provincial Occupational Safety and Health Regulations; and
 - .2 Canada Occupational Safety and Health Regulations (COSH) made under the Canada Labour Code - Part II.
- .2 Conduct hazard assessment and address in Safety Plan before entering confined space.
- .3 Provide and maintain equipment and PPE as required for the safety and emergency evacuation of persons entering confined spaced.
- .4 Provide training to persons who will be entering and to those persons who will be assisting in the confined space entry process. Training to be specialized instructions beyond (basic confined space entry information) as required to suit type and conditions of confined space.
- .5 Safety for Inspectors:
- .1 Upon request, provide PPE and training to Departmental Representative and to other authorized persons, for the purpose of entering confined space to conduct inspections.
 - .2 Be responsible for the efficacy of the equipment and safety of such persons during their entry and occupancy in the confined space.
- 1.21 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.

1.22 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, or authorized safety representative, for review. Provide copy when directed by Departmental Representative.

1.23 NON-COMPLIANCE
AND DISCIPLINARY
MEASURES

- .1 Immediately address and correct health and safety violations and non-compliance issues.
- .2 Negligence or failure to follow occupational health and safety provisions specified in the Contract Documents and of those of applicable laws and regulations could result in disciplinary measures taken by the Departmental Representative against the General Contractor.
- .3 PWGSC uses a system of Non-Compliance Notifications and Disciplinary Measures on projects as follows:
 - .1 A non-compliance notification is issued to the General Contractor, by the Departmental Representative, whenever there is a violation or non-compliance of the project's health and safety requirements and of those of Provincial and Federal regulations by any worker, subcontractor or other person to whom the Contractor has granted access to the work site.
 - .2 Non-compliance notifications are progressive in nature resulting in disciplinary measures imposed

depending on the frequency, nature and severity of the infraction.

.3 Disciplinary measures could include:

.1 Removal of the offending person or party from site;

.2 Financial penalties in the form of progress payment reduction or holdback assessments made against the Contract and;

.3 Taking the Work Out of Contractor's Hands in accordance with the General Conditions.

.4 Departmental Representative will make final decision as to what constitutes a violation and when to issue a Non-compliance Notification.

.5 Non-compliance Notifications issued by Departmental Representative shall not be construed as to overrule or disregard warnings, orders and fines levied against Contractor by a regulatory agency having jurisdiction.

.6 Each non-compliance notification issued is given a numerical rating based on a three level numbering system. Each level is progressive in nature to reflect:

.1 The seriousness of the infraction as viewed by the Departmental Representative.

.2 The degree of disciplinary action which will be taken by the Departmental Representative.

.7 Numerical ratings are as follows:

.1 Non-compliance Notification-
Level No.1 Rating:

- .1 Situation: occurrence of a first time infraction by a person or party on site.
- .2 Action: verbal warning to General Contractor, documented in Departmental files and copy sent to the General Contractor.
- .2 Non-compliance Notification-Level No.2 Rating:
 - .1 Situation:
 - .1 The second occurrence of a previous infraction by the same person or party on site or;
 - .2 Accumulation of several level-1 notifications for different infractions by the same person or party on site or;
 - .3 Non-action on the part of the Contractor or subcontractor to rectify non-compliance infractions previously identified in one or several level-1 notifications or;
 - .4 Violation or non-observance of a Federal or Provincial safety Law or Regulation by subcontractor or Contractor or;
 - .5 Negligence by a person or party resulting in injury or major property damage.
 - .2 Action: written notice to General Contractor complete with an order for immediate remedial action to be taken. Depending on the severity of the offense, the order may include request for the immediate removal of the

- offending person or party from site.
- .3 Non-compliance Notification-Level No.3 Rating:
- .1 Situation:
- .1 Continued and repeated non-compliance with health and safety requirements by the General Contractor or by subcontractor(s) or;
- .2 The occurrence of a serious accident on site resulting in serious bodily injury or death.
- .2 Action:
- .1 Formal letter issued to General Contractor with an order to "Immediately Stop Work" until so notified to proceed.
- .2 Review of all non-compliance and/or accident occurrences in the project with possible investigation by the Department of PWGSC.
- .3 Based on outcome of the review/investigation, Work could be suspended or taken out of the Contractor's hands in accordance with the General Conditions.
- .3 The term "serious accident" used herein shall have the same meaning as defined in the Canadian Dictionary of Safety Terms - 1987 issue from the Canadian Society of Safety Engineers (C.S.S.E).
- .8 Decision on which rating level to be placed on any given Non-Compliance

Notification will be determined solely by Departmental Representative.

- .9 Further details on the disciplinary system will be provided at the pre-construction Health and Safety meeting after Contract award.
- .10 Be responsible to fully brief workers and subcontractors on the operation and importance of this system.

1.24 DIVING OPERATIONS

- .1 All diving work to comply fully with the requirements of CSA Z275.2-11, "Occupational Safety Code for Diving, Operations", CSA Z275.4-12, "Competency Standards for Diving Hyperbaric Chamber, and Remotely Operated Vehicle Operations" and CSA Z180.1-13, "Compressed Breathing Air and Systems."
- .2 Dive personnel must meet the minimum competency requirements of the CSA Z275.4-12 and all divers must possess a valid Category 1 Diving Certificate or an Unrestricted Surface-supplied Certificate.
- .3 Diving in free-swim mode is not permitted at the work site.
- .4 Divers must have a current less than one year validated medical examination certificate(s) from a licensed Diving Physician in Nova Scotia who is knowledgeable and competent in diving and hyperbaric medicine, for all dives.

1.1 REFERENCES

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

1.2 DEFINITIONS

- .1 Archaeological resources: all tangible evidence of human activity that is of historical, cultural or scientific interest. Examples include features, structures, archaeological objects or

remains at or from an archaeological site, or an object recorded as an isolated archaeological find.

- .2 Buffer zone: a vegetated land that protects watercourses from adjacent land uses. It refers to the land adjacent to watercourses, such as streams, rivers, lakes, ponds, oceans, and wetlands, including the floodplain and the transitional lands between the watercourse and the drier upland areas.
- .3 Deleterious substance: (a) any substance that, if added to any water, would degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by man of fish that frequent that water, or (b) any water that contains a substance in such quantity or concentration, or that has been so treated, processed or changed, by heat or other means, from a natural state that it would, if added to any other water, degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by man of fish that frequent that water.
- .4 Fish habitat: spawning grounds and any other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly in order to carry out their life processes.
- .5 Hazardous material: Product, substance, or organism that is used for its original purpose; and that is

either dangerous goods or a material that may cause adverse impact to the environment or adversely affect health of persons, animals, or plant life when released into the environment.

- .6 Invasive or alien species: refers to a species or subspecies introduced outside its normal distribution whose establishment and spread threaten ecosystems, habitats or species with economic or environmental harm.
- .7 Navigable water: a canal and any other body of water created or altered as a result of the construction of any work.
- .8 Surface watercourse: refers to the bed and shore of a river, stream, lake, creek, pond, marsh, estuary or salt-water body that contains water for at least part of each year.
- .9 Wetlands: land where the water table is at, near or above the surface or which is saturated for a long enough period to promote such features as wet-altered soils and water tolerant vegetation. Wetlands include organic wetlands or "peatlands" and mineral wetlands or mineral soil areas that are influenced by excess water but produce little or no peat.

1.3 TRANSPORTATION

- .1 Transport hazardous materials and hazardous waste in compliance with the Transportation of Dangerous Goods Act.
- .2 Eliminate free board spillage when loading and hauling material.
- .3 Do not overload trucks when hauling material.

- .4 Maintain trucks clean and free of mud, dirt and other foreign matter.
- .5 Secure contents against spillage. Avoid potential release of contents and of any foreign matter onto highways, roads and access routes used for the work. Immediately clean any ground spills and soils to extent as directed by authority having jurisdiction.
- .6 Prior to commencement of work, advise and seek approval from the *Departmental Representative* of the existing roads and temporary routes / roads (including the construction of any temporary causeways) proposed to be used to access work areas and to haul material to and from the site.
- .7 Construction material and debris is not to become waterborne.
- .8 Any tools, equipment, vehicles, temporary structures or parts thereof used or maintained for the purpose of building or placing a work in navigable water are not to remain in place after the completion of the project.
- .9 Vessels are to be permitted safe access through the worksite at all times, and assisted as necessary.
- .10 All materials and equipment used in construction must be marked in accordance with the Collision Regulations of the Canada Shipping Act, 2001 when located on the waterway.
- .11 Advise the Canadian Coast Guard, Marine Communication and traffic Services (MCTS) at (902) 564-7751 or toll free at 1-800-686-8676 sufficiently in advance of commencement of work or when

deploying or removing site markings in order to allow for appropriate Notices to Shipping/Mariners action.

1.4 OPERATION OF MACHINERY

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

1.5 CONTAINMENT AND SPILL MANAGEMENT

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

at least one 250-litre (55 gallon) overpack spill kit for containment and cleanup of spills.

- .5 Maintain vehicles and equipment in good working order to prevent leaks on site.
- .6 In the event of a petroleum spill, immediately notify the *Departmental Representative* and the Canadian Coast Guard (CCG) at 1-800-565-1633 (24 hour report line). Perform clean-up in accordance with all regulations and procedures stipulated by authority having jurisdiction.
- .7 Materials such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, or other chemicals are not to enter the watercourse.
- .8 Develop and submit to the *Departmental Representative* a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance.

1.6 HAZARDOUS
MATERIAL HANDLING

- .1 Store and handle hazardous materials in accordance with applicable federal and provincial regulations, codes, standards and guidelines. Store in location that will prevent spillage into the environment.
- .2 Label containers to WHMIS requirements and keep MSDS data sheets on site for all hazardous materials.
- .3 Maintain inventory of hazardous materials and hazardous waste stored on site. List items by product name, quantity and date when stored.

- .4 Store and handle flammable and combustible materials in accordance with National Fire Code.

1.7 DISPOSAL OF WASTES

- .1 Do not bury rubbish, construction and demolition debris (i.e., concrete, creosote timbers, steel, impacted soil materials etc.) and waste materials on site.
- .2 Dispose and recycle construction and demolition debris and waste materials in accordance with Provincial Waste Management Regulations and the project waste management requirements specified in section 02 41 16 - Sitework, Demolition and Removals.
- .3 Do not dispose of hazardous waste, volatile materials (such as mineral spirits, paints, thinners etc.) and petroleum products into waterways, storm or sanitary sewers or in waste landfill sites.
- .4 Dispose of hazardous waste in accordance with applicable federal and provincial, regulations, codes, standards and guidelines.
- .5 Dispose of construction related debris, including demolished cribwork materials and cut timber at an approved landfill.
- .6 Concrete waste:
 - .1 Do not discharge residual or rejected concrete on site.
 - .2 Immediately clean any accidental release of concrete on site prior to solidification.
 - .3 Do not wash and clean concrete vehicles on site.
 - .4 Perform dumping of residual

material and truck cleaning operations only at the concrete plant. Follow environmental regulations and good practices as approved by the Provincial Department of the Environment and other authorities having jurisdiction.

1.8 WATER QUALITY

- .1 Conduct construction 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 Harbour Authority as directed by *Departmental Representative* to minimize interference and impact to harbour users.
- .3 Do not wash down equipment within a 30 metre buffer zone of a wetland, watercourse or other identified environmentally sensitive area.
- .4 Develop and implement an Erosion and Sediment Control Plan for the site that minimizes risk of sedimentation of the water body during all phases of the work.
 - .1 Site isolation measures (e.g., silt boom or silt curtain) for containing suspended sediment where in-water work is required.
 - .2 Measures for containing and stabilizing waste material (e.g., construction waste and materials, accumulated debris) above the high water mark of nearby water bodies to prevent re-entry.
 - .3 Regular inspection and

maintenance of erosion and sediment control measures and structures during the course of the work.

.4 Repairs to erosion and sediment control measures and structures if damage occurs.

.5 Removal of non-biodegradable erosion and sediment control materials.

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

1.10 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 Ensure that no litter (including food wastes) is left in coastal areas.
- .4 Do not approach concentrations of seabirds, waterfowl and shorebirds

when anchoring equipment, accessing wharves or ferrying supplies.

- .5 During night time work, flood lights are to be shielded and aimed downwards.
- .6 Do not use beaches, dunes, coastal wetlands and other natural previously undisturbed areas of the site to conduct work. These areas are not be used as staging areas for the project.
- .7 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 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.

1.11 FISH PROTECTION

- .1 Avoid wet, windy and rainy periods that may increase erosion and sedimentation.
- .2 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.
- .3 To minimize the possibility of fish habitat contamination and the spread of aquatic invasive (alien species), all construction equipment which will be immersed into the water of a watercourse, or has the possibility of coming into contact with such water during the course of the work, must be

cleaned and washed to ensure that they are free of marine growth and alien species.

.1 Equipment shall include boats, barges, cranes, excavators, haul trucks, pumps, pipe lines and all other miscellaneous tools and equipment previously used in a marine environment.

.4 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.

.5 Conduct cleaning and washing operations as follows:

.1 Scrape and remove heavy accumulation of mud and dispose appropriately.

.2 Wash all surfaces of equipment by use of a pressurized fresh water supply.

.3 Immediately follow with application of a heavy sprayed coating of undiluted vinegar or other environmentally approved cleaning agent to thoroughly remove all plant matter, animals and sediments.

.4 Check and remove all plant, animal and sediment matter from the all bilges and filters.

.5 Drain standing water from equipment and let fully dry before use.

.6 Upon removal from the water, drain standing water from equipment and let fully dry before removal off the site.

.6 Do not perform cleaning and washdown within a 30 metre buffer zone of a wetland, watercourse or other identified environmentally sensitive area.

- .7 Record of Assurance Logbook:
 - .1 Maintain an on-going log of past and present usage and washdowns of all equipment to illustrate mitigation measures undertaken against fish habitat contamination by alien species.
 - .2 Write data in a hard cover bound logbook to include the following:
 - .1 Date and location where equipment was previously used in a watercourse or wetland;
 - .2 Type of work performed;
 - .3 Dates of wash down for each piece of equipment;
 - .4 Cleaning method and cleaning agent(s) used.
- .8 Keep Record of Assurance Logbook updated from project to project. Upon request, submit logbook to *Departmental Representative* for review.
- .9 Abide by requirements and recommendations from Fisheries and Oceans Canada - Fisheries Protection Program in cleaning and wash down of equipment.
- .10 The introduction of deleterious substances into the watercourse is not permitted.

1.12 AIR QUALITY

- .1 Keep airborne dust and dirt resulting from the work on site to an absolute minimum.
- .2 Dust suppression by the application of water must be employed, when required. Apply dust control measures to roads, parking lots and work areas. The *Departmental Representative* shall determine locations where water is to

be applied, the amount of water to be applied, and the times at which it shall be applied. Waste oil must not to be used for dust control under any circumstances.

- .3 Spray surfaces with water or other environmentally approved product. Use purposely suited equipment or machinery and apply in sufficient quantity and frequency to provide effective result and continued dust 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 is not permitted.

1.1 SECTION INCLUDES

- .1 Inspection and testing, administrative and enforcement requirements.
- .2 Tests and mix designs.
- .3 Mock-ups.
- .4 Mill tests.
- .5 Equipment and system adjust and balance.

1.2 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 78 00 - Closeout Submittals.

1.3 INSPECTION

- .1 Facilitate Departmental Representative's access to Work. If part of Work is being fabricated at locations other than construction site, make preparations to allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection of Work designated for special tests, inspections or approvals by Departmental Representative or by inspection authorities having jurisdiction.
- .3 If Contractor covers or permits to be covered Work designated for special tests, inspections or approvals before such is made, uncover Work until particular inspections or tests have been fully and satisfactorily completed and until such time as Departmental Representative gives permission to

proceed. Pay costs to uncover and make good such Work.

- .4 In accordance with the General Conditions, Departmental Representative may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents.

1.4 INDEPENDENT
INSPECTION AGENCIES

- .1 Departmental Representative will engage and pay for service of Independent Inspection and Testing Agencies for purpose of inspecting and testing portions of Work except for the following which remain part of Contractor's responsibilities:
 - .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 as specified within various sections designated to be carried out by Contractor under the supervision of Departmental Representative.
 - .6 Additional tests specified in Clause 1.4.2.
- .2 Where tests or inspections by designated Testing Agency 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 Employment of inspection and testing agencies by Departmental Representative does not relax responsibility to perform Work in accordance with Contract Documents.

1.5 ACCESS TO WORK

- .1 Furnish labour and facility to provide access to the work being inspected and tested.
- .2 Co-operate to facilitate such inspections and tests.
- .3 Make good work disturbed by inspections and tests.

1.6 PROCEDURES

- .1 Notify Departmental Representative sufficiently in advance of when work is ready for tests, in order for Departmental Representative to make attendance arrangements with Testing Agency. When directed by Departmental Representative, notify such Agency directly.
- .2 Submit representative samples of materials specified to be tested. Deliver in required quantities to Testing Agency. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.
- .3 Provide labour and facilities to obtain and handle samples on site. Provide sufficient space on site for Testing Agency's exclusive use to store equipment and cure test samples.

1.7 REJECTED WORK

- .1 Remove and replace defective Work, whether result of poor workmanship, use of defective or damaged products and whether incorporated in Work or not, which has been identified by Departmental Representative as failing to conform to Contract Documents.
- .2 Make good damages to existing or new work, including work of other Contracts, resulting from removal or replacement of defective work.

1.8 TESTING BY CONTRACTOR

- .1 Provide all necessary instruments, equipment and qualified personnel to perform tests designated as Contractor's responsibilities herein or elsewhere in the Contract Documents.
- .2 At completion of tests, turn over 2 copies of fully documented test reports to Departmental Representative. Additionally, obtain other copies in sufficient quantities to enable one complete set of test reports to be placed in each of the maintenance manuals specified in Section 01 78 00.
- .3 Submit mill test certificates and other certificates as specified in various sections.
- .4 Furnish test results and mix designs as specified in various sections.

1.9 MOCK-UPS

- .1 Prepare mock-ups for Work specifically requested in various trade sections. Include in each mock-up all related work components representative of final assembly..

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- .2 Construct in locations acceptable to Departmental Representative.
 - .3 Prepare mock-ups for Departmental Representative's review with reasonable promptness and in an orderly sequence, so as not to cause any delay in Work.
 - .4 Failure to prepare mock-ups in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
 - .5 If requested, Departmental Representative will assist in preparing a schedule fixing dates for preparation.
 - .6 Remove mock-up at conclusion of Work or when directed by Departmental Representative unless approval is given to remain as part of Work.

1.1 ACCESS

- .1 Provide and maintain adequate access to project site.
- .2 Maintain access roads for duration of contract and make good damage resulting from Contractors' use of roads.

1.2 CONTRACTOR'S SITE OFFICE

- .1 Be responsible for and provide own site office, if required, including electricity, heat, lights and telephone. Locate site office as directed by Departmental Representative.

1.3 DEPARTMENTAL REPRESENTATIVE'S SITE OFFICE

- .1 Provide or construct a separate site office for the use of the Departmental Representative and the Site Representative. The building must be in place prior to commencement of work.
- .2 Provide heating system to maintain 22°C inside temperature at -20°C outside temperature.
- .3 The building will be approximately 2400mm x 3600mm. It will have a suitable frame covered with a weatherproof siding and lined with plywood or other approved material. The floor will be of 19mm thick material. It will be provided with suitable window with at least 1m² of glass and arranged to provide at least 0.5m² of screened opening. The door will be fitted with a lockset and 2 keys.
- .4 The office will be equipped with a drafting chair and a 900mm x 1500mm table having a hinged, smooth wooden top suitable for drafting.

- .5 Install electrical lighting system to provide minimum 750 lux using surface mounted, shielded commercial fixtures with 10% upward light component.
- .6 Maintain office in clean condition.
- .7 Arrange and pay for telephone and facsimile machine in the Departmental Representative's Office for Site Representative's exclusive use. Long distance calls or faxes placed on this phone by the Departmental Representative or the Site Representative will be paid by the Departmental Representative.
- .8 Contractor may, on approval of Departmental Representative, provide cellular or mobile phone. If approval to use cellular or mobile phone is granted, be responsible for all services, airtime, license and network access fees, and all other fees or charges required to utilize the phone as intended by the manufacturer.

1.4 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.

1.5 POWER

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

- .2 Supply and install all temporary facilities for power such as pole lines and underground cables 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 SCAFFOLDING

- .1 Design, construct and maintain scaffolding in rigid, secure and safe manner in accordance with CAN/CSA-S269.2-M87 (R2003).
- .2 Erect scaffolding independent of walls. Remove when no longer required.

1.8 CONSTRUCTION SIGN AND NOTICES

- .1 Contractor or subcontractor advertisement signboards are not permitted on site.
- .2 Only notices of safety or instructions are permitted on site.
- .3 Safety and Instruction Signs and Notices:
 - .1 Signs and notices for safety and instruction shall be in both official languages. Graphic symbols shall conform to CAN/CSA-Z321-96 (R2001).
- .4 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.

1.1 GENERAL

- .1 Use new material and equipment unless otherwise specified.
- .2 Within 7 days of written request by Departmental Representative, submit following information for any materials and products proposed for supply:
 - .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;
 - .6 evidence of manufacturer delivery problems or unforeseen delays.
- .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.
- .5 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.2 PRODUCT QUALITY
AND REFERENCED
STANDARDS

- .1 Contractor shall be solely responsible for submitting relevant technical data and independent test reports to confirm whether a product

or system proposed for use meets contract requirements and specified standards.

- .2 Final decision as to whether a product or system meets contract requirements rest solely with the Departmental Representative in accordance with the General Conditions.

1.3 ACCEPTABLE
MATERIALS AND
ALTERNATIVES

- .1 Acceptable Materials: When materials specified include trade names or trademarks or manufacturer's or supplier's name as part of the material description, select and only use one of the names listed for incorporation into the Work.
- .2 Alternative Materials: Submission of alternative materials to trade names or manufacturer's names specified must be done during the bidding period following procedures indicated in the Instructions to Bidders.
- .3 Substitutions: After acceptance of bid, substitution of a specified material will be dealt with as a change to the Work in accordance with the General Conditions of the Contract.

1.4 MANUFACTURERS
INSTRUCTIONS

- .1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods to be used. Do not rely on labels or enclosure provided with products. Obtain written instructions directly from manufacturers.

- .2 Notify Departmental representative in writing of any conflict between these specifications and manufacturer's instructions, so that Departmental Representative will designate which document is to be followed.

1.5 AVAILABILITY

- .1 Immediately notify Departmental Representative in writing of unforeseen or unanticipated material delivery problems by manufacturer. Provide support documentation as per Clause 1.1.2 above.

1.6 WORKMANSHIP

- .1 Ensure quality of work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed.
- .2 Remove unsuitable or incompetent workers from site as stipulated in General Conditions.
- .3 Ensure cooperation of workers in laying out work. Maintain efficient and continuous supervision on site at all times.
- .4 Coordinate work between trades and subcontractors.
- .5 Coordinate placement of openings, sleeves and accessories.

1.7 FASTENINGS -
GENERAL

- .1 Provide metal fastenings and accessories in same texture, colour and finish as base metal in which they occur. Prevent electrolytic action between dissimilar metals. Use non-corrosive fasteners, anchors

and spacers for securing exterior work and in humid areas.

- .2 Space anchors within limits of load bearing or shear capacity and ensure that they provide positive permanent anchorage. Wood or organic material plugs not acceptable.
- .3 Keep exposed fastenings to minimum, space evenly and lay out neatly.
- .4 Fastenings which cause spalling or cracking of material to which anchorage is made, are not acceptable.
- .5 Do not use explosive actuated fastening devices unless approved by Departmental Representative. See Section 01 35 28 on Health and Safety in this regard.

1.8 FASTENINGS -
EQUIPMENT

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- .2 Use heavy hexagon heads, semi-finished unless otherwise specified.
- .3 Bolts may not project more than one diameter beyond nuts.
- .4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur and, use resilient washers with stainless steel.

1.9 STORAGE, HANDLING
AND PROTECTION

- .1 Deliver, handle and store materials in manner to prevent deterioration and soiling and in accordance with manufacturer's instructions when

applicable. Provide same degree of protection to materials supplied by Canada.

- .2 Store packaged or bundled materials in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work. Provide additional cover where manufacturer's packaging is insufficient to provide adequate protection.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Store cementitious products clear of earth or concrete floors, and away from walls.
- .5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.
- .6 Store sheet materials and lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
- .8 Immediately remove damaged or rejected materials from site.
- .9 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use

touch-up materials to match original. Do not paint over name plates.

1.10 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. Prevent oil and other contaminant leaks. Should any contaminant leak onto ground or into the water, take immediate and appropriate measures to contain, cleanup and dispose in an environmentally responsible manner.

PART 1 - GENERAL

1.1 GENERAL

- .1 Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
- .2 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .3 Prevent accumulation of wastes which create hazardous conditions.
- .4 Provide adequate ventilation during use of volatile or noxious substances.

1.2 MATERIALS

- .1 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

1.3 CLEANING DURING CONSTRUCTION

- .1 Maintain project grounds and public properties in a tidy condition, free from accumulations of waste material and debris. Clean areas on a daily basis.
- .2 Provide on-site garbage containers for collection of waste materials and debris.
- .3 Remove waste materials and debris from site on a daily basis.

1.4 FINAL CLEANING

- .1 In preparation for acceptance of the Work perform final cleaning.
- .2 Inspect finishes, fitments and equipment. Ensure specified workmanship and operation.

- .3 Broom clean exterior paved and concrete surfaces; rake clean other surfaces of grounds.

- 1.1 RELATED SECTIONS
- .1 Section 01 35 44 - Environmental Protection Procedures for Marine Work.
 - .2 Section 03 30 00 - Cast-in-Place Concrete.
 - .3 Section 03 37 26 - Underwater Concreting.
 - .4 Section 05 51 00 - Pile Protection.
- 1.2 WASTE MANAGEMENT PLAN
- .1 Prior to commencement of work, prepare waste Management Workplan.
 - .2 Workplan to include:
 - .1 Waste audit.
 - .2 Waste reduction practices.
 - .3 Material source separation process.
 - .4 Procedures for sending recyclables to recycling facilities.
 - .5 Procedures for sending non-salvageable items and waste to approved waste processing facility or landfill site.
 - .6 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 Implement and manage all aspects of Waste Management Workplan for duration of work.

- .6 Revise Plan as work progresses addressing new opportunities for diversion of waste from landfill.

1.3 WASTE AUDIT

- .1 At project start-up, conduct waste audit of:
 - .1 Site conditions identifying salvageable and non-salvageable items and waste resulting from demolition and removal work.
 - .2 Projected waste resulting from product packaging and from material leftover after installation work.
- .2 Develop written list. Record type, composition and quantity of various salvageable items and waste anticipated, reasons for waste generation and operational factors which contribute to waste.

1.4 WASTE REDUCTION

- .1 Based on waste audit, 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 Protected and turned over to Departmental Representative when indicated.
 - .2 Salvaged for resale by Contractor.
 - .3 Sent to recycling facility.
 - .4 Sent to waste processing/landfill site for their recycling effort.
 - .5 Disposed of in approved landfill site.

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- .4 Reduce construction waste during installation work. Undertake practices which will minimize waste and optimize full use of new materials on site, such as:
 - .1 Use of a central cutting area to allow for easy access to off-cuts;
 - .2 Use of off-cuts for blocking and bridging elsewhere.
 - .3 Use of effective and strategically placed facilities on site for storage and staging of left-over or partially cut materials to allow for easy incorporation into work whenever possible avoiding unnecessary waste.

 - .5 Develop other strategies and innovative procedures to reduce waste such as minimizing the extent of packaging used for delivery of materials to site, etc.
- 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 store 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 of existing building tenants.
 - .3 Clearly mark containers and stockpiles as to purpose and use.

- .3 Perform demolition and removal of existing structure components and equipment following a systematic deconstruction process.
 - .1 Separate materials and equipment at source, carefully dismantling, labelling and stockpiling alike items for the following purposes:
 - .1 Reinstallation into the work where indicated.
 - .2 Salvaging reusable items not needed in project which Contractor may sell to other parties. Sale of such items not permitted on site.
 - .3 Sending as many items as possible to locally available recycling facility.
 - .4 Segregating remaining waste and debris into various individual waste categories for disposal in a "non-mixed state" as recommended by waste processing/landfill sites.
- .4 Isolate product packaging and delivery containers from general waste stream. Send to recycling facility or return to supplier/manufacturer.
- .5 Send leftover material resulting from installation work for recycling whenever possible.
- .6 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.

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- .7 Isolate and store existing materials and equipment identified for re-incorporation into the Work. Protect against damage.
- 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 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 CERTIFICATION OF MATERIAL DIVERSION
- .1 Submit to Departmental Representative, copies of certified weigh bills from authorized waste processing sites and sale receipts from recycling/reuse facilities confirming receipt of building materials and quantity of waste diverted from landfill.
- .2 Submit data at pre-determined project milestones as determined by Departmental Representative.

- .3 Compare actual quantities diverted from landfill with projections made during waste audit.

1.8 DISPOSAL REQUIREMENTS

- .1 Burying or burning of rubbish and waste materials is prohibited.
- .2 Disposal of waste, volatile materials, mineral spirits, oil, paint, paint thinner or unused preservative material into waterways, storm, or sanitary sewers is prohibited.
- .3 Do not dispose of preservative treated wood through incineration.
- .4 Do not dispose of preservative treated wood with other materials destined for recycling or reuse.
- .5 Dispose of treated wood, end pieces, wood scraps and sawdust at a sanitary landfill.
- .6 Dispose of waste only at approved waste processing facility or landfill sites approved by authority having jurisdiction.
- .7 Contact the authority having jurisdiction prior to commencement of work, to determine what, if any, demolition and construction waste materials have been banned from disposal in landfills and at transfer stations. Take appropriate action to isolate such banned materials at site of work and dispose in strict accordance with provincial and municipal regulations.

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- 1.1 SECTION INCLUDES .1 Project Record Documents as follows:
- .1 As-built drawings;
 - .2 As-built specifications;
- .2 Reviewed shop drawings.
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- 1.2 PROJECT RECORD DOCUMENTS .1 Departmental Representative will provide two white print sets of contract drawings and two 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 at any time during construction.
- .4 As-Built Drawings:
- .1 Record changes in red ink on the prints. Mark only on one set of prints and at completion of project and prior to final inspection, neatly transfer notations to second set (also by use of red ink). Submit both sets to Departmental Representative. All drawings of both sets shall be stamped "As-Built Drawings" and be signed and dated by Contractor.
 - .2 Show all modifications, substitutions and deviations from what is shown on the contract drawings or in specifications.
 - .3 Record following information:
 - .1 Horizontal and vertical location of various elements in relation to Chart Datum.

- .2 Field changes of dimension and detail.
 - .3 All design elevations, sections, and details dimensioned and marked-up to consistently report finished installation conditions.
 - .4 Any details produced in the course of the contract by the Departmental Representative to supplement or to change existing design drawings must also be marked-up and dimensioned to reflect final as-built conditions and appended to the as-built drawing document.
 - .5 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 documents current as the contract progresses. Departmental Representative will conduct reviews and inspections of

the documents on a regular basis. Frequency of reviews will be subject to Departmental Representative's discretion. 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 REVIEWED SHOP
DRAWINGS

- .1 Compile 2 full sets of all reviewed shop drawings.