

## 1.1 Scope

- .1 The work covered under this project consists of the furnishing of all plant, labour, equipment and materials for "Installation of New Timber Floats secured with concrete filled steel pipe piles and guide piles. Work is located at Dipper Harbour Wharf, Saint John County, New Brunswick, in strict accordance with specifications and accompanying drawings and subject to all terms and conditions of contract.
- .2 Mobilization and Demobilization of all equipment necessary to make work progress for the entire contract.
- .3 Only items in the Unit Price Table will be measured for payment. All other work necessary to complete the work will be considered incidental to the project and will not be measured separately for payment.

## 1.2 Description of Work

- .1 The work will consist of but will not necessarily be limited to the following:
  - .1 Mobilization and demobilization.
  - .2 Removal and disposal of existing float, and H piles float guides as indicated on the drawings.
  - .3 Removal existing gangway and clearly barricade the entrance during construction. Reinstall the gangway once floats are completely installed.
  - .4 Supply and installation of concrete filled steel pipe piles and Steel Guide Pile Connections to the location and elevations specified on the drawings or as directed by the Departmental Representative.
  - .5 Supply and Installation of Cathodic Protection for the newly installed steel pipe piles, as indicated on the drawings.
  - .6 Transportation and Installation of the new timber floats (stored on site) on Steel Pipe Pile Anchors as indicated on the plan. (Floats supplied by others)

## 1.3 Site Work

- .1 Work will be carried out at Dipper Harbour, New Brunswick in the location as shown on the accompanying drawings.

## 1.4 Datum

- .1 Datum used for this project is Lowest Normal Tides (LNT) and is assumed to be 8.82 meters below the Benchmark shown on the plan.
- .2 Bidders are advised to consult the Tide Tables issued by Fisheries and Oceans in order to make sure of the tidal conditions affecting the work.

### 1.5 Familiarization With site

- .1 Before submitting a bid, it is recommended that Bidders inspect and examine the site of work and satisfy themselves as to the form and nature of the work, materials, the means of access to the site, and the temporary facilities required for completion of the work. Contractors are to familiarize themselves with Means of access to the site, severity, exposure and uncertainty of weather, soil conditions, any accommodations they may require, and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. No allowance shall be as result of contractor's error or negligence to properly observe and determine the conditions that will apply.
- .2 Obtain prior permission from the Departmental Representative before carrying out such site inspection.
- .3 Contractors, bidders or those they invite to site to review specification Section 01 35 29 - Health and Safety Requirements, before visiting site. Take all appropriate safety measures for any visit to site, either before or after acceptance of bid.
- .4 Bidders are required to wear all appropriate personal protective equipment and take all precautionary measures necessary to ensure their safety during any pre-tender site visit.
- .5 Contractor shall make own assessment of site conditions, and difficulties in carrying out the work as specified.

### 1.6 Work Schedule

- .1 The work to be carried out under this contract must be completed within the time limits set out in the terms of the contract.
- .2 Prepare and submit to the Departmental Representative within 10 days of notification of Contract award, 5 copies of the construction schedule showing the dates for commencement and completion of each major activity of the work, including the work of subcontractors; dates of submissions, review and return of all drawings, etc. If the schedule as submitted is unacceptable in any way, submit without delay a revised schedule satisfactory to the Departmental Representative.
- .3 The Departmental Representative is to notify the Contractor in writing of acceptance of the Construction Schedule. Comply with the Construction Schedule at all times. If, for any reason the Construction Schedule is not followed, immediately notify the Departmental Representative of the changes and submit a revised schedule for acceptance. Upon written acceptance by the Departmental Representative, this schedule will become the Construction Schedule.
- .4 Whenever required, give further written particulars concerning this schedule. The submission to and acceptance by the Departmental Representative of the Contractor's Construction Schedule or the furnishing of details and particulars thereto will

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

### **1.7 Work Commencement**

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

### **1.8 Codes and Standards**

- .1 Perform work in accordance with the 2010 National Building Code of Canada and any other code of provincial or local application including all amendments up to project tender closing date provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
- .2 Materials and workmanship must meet or exceed requirements of specified standards, codes and referenced documents.

### **1.9 Measurement Responsibilities**

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

### **1.10 Contractor's Use of Site**

- .1 Co-operate with users of existing facilities. Maintain access to the existing wharf structures during fishing season and consult with the local Harbour Authority for site access limitations.
- .2 Should interferences occur, take directions from Departmental Representative.
- .3 Do not unreasonably encumber site with materials or equipment.
- .4 Move stored products or equipment which interfere with users' operations or other

Contractors.

- .5 Obtain and pay for use of additional storage or work areas needed for operations.
- .6 Comply with all regulations and authorities having jurisdiction over the work, whether on land or on water.
- .7 Ensure no damage occurs to existing structures as a result of operations. Any said damage will be repaired at Contractor's expense.
- .8 Contractor will note that fishing activity in the harbour includes fishing boats, moorings, etc. The Contractor will note that fishing boats, etc. must be able to berth in the harbour during construction operations therefore Contractor must cooperate with boats and activities in the harbour. No compensation will be paid to Contractor for loss of time or any other as a result of activities in each harbour.

#### 1.11 Setting Out Work

- .1 Do all detail surveys necessary for the work, including locating and maintaining working points, and establishing lines and elevations. Perform all layout work, and carefully preserve benchmarks, reference points and stakes.
- .2 Provide such masts, scaffolds, batter boards, lines, straight edges, templates and other devices as may be necessary to facilitate layout, construction and inspection of the work. Whenever necessary, suspend work for such reasonable time as may be necessary to permit the Departmental Representative to check or inspect any portion of the work. The Contractor will not be allowed any extra compensation or time for completion because of this suspension of work.
- .3 Elevations for the various grades and features of the specified works to be referenced and properly related to a benchmark, which will be approved by the Departmental Representative.
- .4 Verify all grades, lines, levels, and dimensions shown on the drawings and report any errors or inconsistencies to the Departmental Representative before commencing work. Provide and maintain well built batter boards at all points to facilitate the progress of the work. Establish all other grades, lines, levels required to facilitate the work.

#### 1.12 Contract Documents

- .1 Contract Documents:
  - .1 The drawings for the work consist of all drawings listed in these "Plans and Specifications" and any additional drawings issued at a later date by the Departmental Representative.
  - .2 Departmental Representative may furnish additional drawings to assist in proper execution of work. These drawings will be issued for clarification only. Such drawings will have same meaning and intent as if they were included with plans referred to in Contract Documents.
  - .3 The drawings indicate the extent and general dimensions of the work. Make

all necessary measurements to ensure that the result of the work is in accordance with the intent.

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

.2 Contract Specifications:

- .1 The general requirements and technical specifications are written solely for the General Contractor. They are organized into the NMS format of separate divisions and sections.
- .2 Specification language is the "Short form Type", for example, where the word "provide" occurs, interpret it to mean "the Contractor shall furnish all labour, material and equipment necessary to complete the work".
- .3 These Specifications and accompanying drawings are intended to describe and provide for a finished project. They are intended to be complementary, and what is called for by either will be as binding as if called for by both. The Contractor shall understand that the work herein described will be complete in every detail, notwithstanding that every item necessarily involved is not particularly mentioned, and Contractor will be held to provide all labour, materials and equipment necessary for the entire completion of the work and will not avail himself of any errors or omissions.

### 1.13 Permits

- .1 Obtain and pay for all permits and certificates, 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.

### 1.14 Record of Construction

- .1 As work progresses, maintain accurate records to show all deviations from the contract drawings, with particular reference to work which will be concealed. Prior to the inspection of the work for the issuance of the Final Certificate of Completion,

provide the Departmental Representative with one set of white prints of the drawings with all deviations shown neatly thereon.

#### **1.15 Payment**

- .1 Payment for all work under this contract to be according to the "Articles of Agreement".
- .2 Dimensional changes as directed by the Departmental Representative to suit existing conditions, but not resulting in additional work or materials, will not be considered as extra to the Contract.

#### **1.16 Maintenance of Shipping**

- .1 Liaise with the local port officials to coordinate activities such that any interference is minimized.

#### **1.17 Cooperation and Assistance to Departmental Representative**

- .1 The datum referred to in this Specification is Chart Datum. Chart Datum is, by International Agreement, a plane below which the tide will seldom fall. The Canadian Hydrographic Service has adopted the plane of the lowest normal tide (L.N.T.) as Chart Datum. As the rise, fall and range of tides varies daily, the Canadian Tide and Current Tables, as issued by the Canadian Hydrographic Service, should be consulted for tidal predictions and other tidal information relating to work.

#### **1.18 Contractor's Representative**

- .1 Continuously maintain on the site an authorized representative to whom communication may be addressed and who will be competent to speak for the Contractor in discussing work methods. See General Conditions "C".

#### **1.19 Workers Compensation**

- .1 Contractor and all sub-contractors must be registered under the Workers Compensation Act and provide evidence of good standing.

#### **1.20 Laws, Standards, Taxes and Fees**

- .1 Comply with all laws and standards governing all or any part of the work, pay all applicable taxes and pay for all permits and certificates required in respect of the execution of the work. Where variances exist between the requirements of agencies governing all or any part of the work, the most restrictive will govern, but in no instance will the standards established by the drawings and this Specification,

which exceed such requirements, be reduced.

### **1.21 Protection and Repair**

- .1 Repair any damage resulting from operations under this contract.
- .2 Store all materials and equipment to be incorporated into work to prevent damage by any means.
- .3 Repair or replace all materials or equipment damaged in transit or storage to the satisfaction of the Departmental Representative and at no cost to the Crown.

### **1.22 Location of Equipment and Fixtures**

- .1 Location of equipment, fixtures or any appurtenances indicated are to be considered approximate.
- .2 Where work involves breaking into or connecting to existing services, carry out work at times directed by governing authorities with minimum disturbance to site operations.
- .3 Before commencing work, establish location and extent of service lines in area of work and notify Departmental Representative of findings.
- .4 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.
- .5 Provide temporary services when directed by Departmental Representative to maintain critical facility systems.
- .6 Provide adequate bridging over trenches which cross walkways or road to permit normal traffic.
- .7 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .8 Protect, relocate or maintain existing active services as required. When inactive services are encountered, cap off in a manner approve by authorities having jurisdiction over service. Record locations of maintained, re-routed and abandoned service lines.
- .9 The wharf shall remain in full service to the users during the duration of the construction contract.

### **1.23 Inspection and Testing**

- .1 The Departmental Representative may employ an Inspector and/or Testing Company to ensure work conforms to this contract.

#### **1.24 Disposal of Debris**

- .1 Debris, including construction materials not incorporated in the work, oil products and containers, and other materials of this nature will be disposed of in suitable locations off the site. Disposal is the responsibility of the Contractor.
- .2 Material from the work will not be permitted to go adrift to otherwise become a menace to navigation.

#### **1.25 Existing Conditions**

- .1 Any information pertaining to soils and all borehole logs are furnished by the Departmental Representative as a matter of general information only, and borehole descriptions or logs are not to be interpreted as descriptive of conditions at locations other than those described by the boreholes themselves.

#### **1.26 Relics and Antiquities**

- .1 Protect relics, antiquities, items of historical or scientific interest such as cornerstones and contents, commemorative plaques, inscribed tablets, and similar objects found during course of work.
- .2 Give immediate notice to Departmental Representative and await written instructions before proceeding with work in this area.
- .3 Relics, antiquities and items of historical or scientific interest remain Her Majesty's property.

#### **1.27 Project Meetings**

- .1 Contractor 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 Contractor 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.



### **1.28 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.

### **1.29 Works Coordination's**

- .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 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 The Crown will not be responsible for or held accountable for any extra costs incurred as a result of the failure to Carry out coordination of 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 to the General Contractor and shall be resolved at no extra cost to the Crown.

### **1.30 Facility Smoking Environment**

- .1 Comply with smoking restrictions.

### **1.31 Cutting, Fitting and Patching**

- .1 Execute cutting, 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.

**PART 1 - GENERAL**

**1.1 GENERAL**

- .1 The bid item prices are full compensation for the work necessary to complete each item in the Contract in the Form of Tender. The prices bid are complete and separate from other or related bid items.
- .2 In the case of conflict between the instructions for measurement and payment contained in Section 01 22 00 and another Section of the Specifications, the requirements of Section 01 22 00 shall govern.
- .3 No separate payment will be made for:
  - .1 Unauthorized work beyond the limits shown.
  - .2 Field engineering survey and layout of work.
  - .3 Erosion and Sediment Control.
  - .4 Water Management.
  - .5 Dust Control.
  - .6 Temporary Facilities.
  - .7 Temporary Barriers and Enclosures.
  - .8 Calibrated Weight Scales.
  - .9 Snow and Ice clearing.

**1.2 DESCRIPTION OF WORK**

- .1 The tendered price for each item listed within the specification includes all labour, materials, and equipment for complete supply and installation of the work.
- .2 Mobilization/Demobilization including all equipment, temporary facilities, security, maintenance, snow clearing, and cleaning of site and public access roads (as required), securing all necessary regulatory permits, insurance and bonding, establishing health and safety protocol, and the construction, maintenance and decommissioning of all necessary temporary access roads.
- .3 All demolition, material disposal, service disconnection/ reconnection, site excavation, construction, repairs and improvements and site restoration and landscaping, as contained in the specifications.

PART 2 -  
PRODUCT MEASUREMENT

## 2.1 GENERAL

.1 This section details the measurement method to be used for payment purposes. Incidental items covered in the various sections of the specification are to be allowed for in the pricing of each pay item.

## 2.2 MEASUREMENT FOR PAYMENT

.1 Measurement for payment will be as specified in the following sections:  
Included:

### Section 02 41 16

- .1 Temporary Removal and Reinstallation or disposal, for construction operations will be paid as a lump sum and will include:
  - .1 Remove existing floats, H guide piles and associated hardware, and turn over to the Dipper Harbour Authority.
  - .2 Remove and dispose of existing fenders and bridles that are in the way of new pipe pile and guide pile installation. Any ladders that are in the way of new installation are to be removed and reinstalled in close approximate, to the Departmental Representative's approval.

Note: Contractor will note that an electrical cable runs along the top portion of the wharf, next to the wheelguard. Contractor will take precautions not to damage the cable during the installation of the Guide Pile Connections and the installation of new Concrete Filled Steel Pipe Piles.
  - .3 Loading, transportation and installation of floats currently stored on site.
  - .4 Clearly block the entrance to the gangway landing during construction. Once The construction is complete and approved, Contractor is to remove the blocked Access to the gangway landing.
- .2 Removal of all other items required for the progress of the work will not be measured separately for payment, it will be considered incidental to this contract.
- .3 Mobilization and Demobilization of all equipment necessary to make work progress for the entire contract will be incidental to this contract.

### Section 05 50 00

- .1 No separate payment shall be made for spikes, anchor bolts, machine bolts, lagscrews, nuts and washers, inserts, holdfasts, mooring rings, angles, channels, plates, any other metal required to complete the work, will be considered incidental to the contract and no separate payment will be made for these items.

## Float and Guide Pile

Page 3

## Installation

## Dipper Harbour

## Saint John County, N. B.

Project No R.076365.001

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**Section 31 62 19.16**

- .1 Supply, Preparation, and driving of steel pipe piles acceptably incorporated into work will be paid by the unit. Including in this work will be the pile splices and supply and installation of pile shoes and Guide Piles.
  - .1 Included in this bid item will be the Underwater placed Concrete specified under section 03 27 26.
- .2 Actual number and lengths of piles installed: established by Departmental Representative from piling records.
- .3 Supply and Installation of Cathodic Protection will be included in the lump sum bid price under this contract. Cathodic Protection shall be installed at the locations shown on the plans, or as directed by the Departmental Representative.

**Section 35 51 24**

- .1 Payment for transportation and installations of floats will be paid in a lump sum under this contract. This will include the furnishing, all equipment necessary for the complete float installation, to the locations shown on the plans. It includes all floats that are stored on site.

## **PART 1 - GENERAL**

### **1.1 SECTION INCLUDES**

- .1 Inspection and testing by inspecting firms or testing laboratories designated by Departmental Representative.

### **1.2 RELATED REQUIREMENTS SPECIFIED ELSEWHERE**

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

### **1.3 APPOINTMENT AND PAYMENT**

- .1 Departmental Representative will appoint and pay for services of testing laboratory except for the following:
  - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
  - .2 Inspection and testing performed exclusively for Contractor's convenience.
  - .3 Mill tests and certificates of compliance.
  - .4 Tests specified to be carried out by Contractor under the supervision of Departmental Representative.
  - .5 Tests requested by Departmental representative to confirm material specifications when the applicable manufacturer's documentation or test results are unavailable.
  - .6 Additional tests specified in the following paragraph.
- .2 Where tests or inspections by designated testing laboratory reveal Work not in accordance with contract requirements, pay costs for additional tests or inspections as required by Departmental Representative to verify acceptability of corrected work.

### **1.4 CONTRACTOR'S RESPONSIBILITIES**

- .1 Provide labour, equipment and facilities to:
  - .1 Provide access to Work to be inspected and tested.
  - .2 Facilitate inspections and tests.
  - .3 Make good Work disturbed by inspection and test.
  - .4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.
- .2 Notify Departmental Representative sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.
- .3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.

- .4 Pay costs for uncovering and making good Work that is covered before required inspection or testing is completed and approved by Departmental Representative.

## **PART 1 - GENERAL**

### **1.1 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 co-ordinate 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 4 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 color 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 ten (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 AND CERTIFICATES

- .1 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.

## **PART 1 - GENERAL**

### **1.1 Related Work**

- .1 Section 01 35 30: Health and Safety

### **1.2 References**

- .1 FCC No. 301-June 1982 Standard for Construction Operations.
- .2 FCC No. 302-June 1982 Standard for Welding and Cutting.
- .3 Above-noted FCC standards, may be viewed at the Regional Fire Protection Services' Office (previously known as the Fire Commissioner of Canada) located at 99 Wyse Road, 8th Floor, Dartmouth, NS; Tel: (902) 426-6053.

### **1.3 Definitions**

- .1 Hot Work defined as:
  - .1 Welding work.
  - .2 Cutting of materials by use of torch or other open flame devices.
  - .3 Grinding with equipment which produces sparks.
  - .4 Torching operations.

### **1.4 Fire Safety Requirement**

- .1 Implement and follow fire safety measures during Work. Comply with following:
  - .1 National Fire Code, 1995.
  - .2 Fire Protection Standards FCC 301 and FCC 302 as issued by the Fire Protection Services of Human Resources Development Canada.
  - .3 Federal and Provincial Occupational Health and Safety Acts and Regulations.
- .2 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, Departmental Representative will advise on the course of action to be followed.

### **1.5 Hot Work Authorization**

- .1 Obtain Departmental Representative's "Authorization to Proceed" before conducting any form of Hot Work on site.
- .2 To obtain authorization submit to Departmental Representative:
  - .1 Contractor's Hot Work Procedures to be followed on site to ensure fire safety.
  - .2 Description of the type and frequency of Hot Work required.
  - .3 Completed Hot Work Permit.
- .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 (1) written Authorization to Proceed covering the entire project and duration of work or;
- .2 Issue individual Authorization to Proceed for specific items of work by requiring Contractor to fill out individual Hot Work Permit for each hot work event as determined by Departmental Representative.
- .4 Frequency for Hot Work Permit based on:
  - .1 Nature of phasing of work;
  - .2 Risk to facility operations;
  - .3 Quantity of various trades needing to perform hot work on project or;
  - .4 Other situations 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.
- .6 Hot work to be performed inside building can only be done during Facility non-operational periods. Coordinate with Facility Manager through the Departmental Representative in this regard.
- .7 Failure to comply with the established hot work 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 29.

## **1.6 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 29.
  - .2 Use of a Hot Work Permit system for each event when Hot Work event.
  - .3 Permit shall be issued by Contractor's Superintendent granting permission to worker or subcontractor to proceed with hot work.
  - .4 Provision of a designated person(s) to carryout a Fire Safety Watch for a minimum of 60 minutes immediately upon completion of the hot work.
  - .5 Compliance with fire safety codes and standards specified herein and occupational health and safety regulations specified in Section 01 35 29.
- .3 Generic procedures, if used, must be edited, supplemented with pertinent information and tailored to reflect specific project conditions. Clearly label as being the Hot Work Procedures applicable to this contract.
- .4 Hot Work Procedures to be in typewritten format, listing step by step procedures and worker instructions, clearly establishing and allocating responsibilities of:
  - .1 Worker(s),
  - .2 Designated person authorized to issue 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.

### 1.7 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 DEFINITIONS

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

## 1.3 SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00.
- .2 Submit site-specific Health and Safety Plan prior to commencement of Work.
  - .1 Submit within 10 work days of notification of Bid Acceptance. Provide 3 copies.
  - .2 Departmental Representative will review Health and Safety Plan and provide comments.
  - .3 Revise the Plan as appropriate and resubmit within 5 work days after receipt of comments.
  - .4 Departmental Representative's review and comments made of the Plan shall not be construed as an endorsement, approval or implied warranty of any kind by Canada and does not reduce Contractor's overall responsibility for Occupational Health and Safety of the Work.
  - .5 Submit revisions and updates made to the Plan during the course of Work.
- .3 Submit name of designated Health & Safety Site Representative and support documentation specified in the Safety Plan.
- .4 Submit building permit, compliance certificates and other permits obtained.

- .5 Submit copy of Letter in Good Standing from Provincial Workers Compensation or other department of labour organization.
  - .1 Submit update of Letter of Good Standing whenever expiration date occurs during the period of Work.
- .6 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .7 Submit copies of incident reports.
- .8 Submit WHMIS MSDS - Material Safety Data Sheets.

#### 1.4 COMPLIANCE REQUIREMENTS

- .1 Comply with Occupational Health and Safety Act for Province of New Brunswick, and Regulations made pursuant to the Act.
- .2 Comply with Occupational Health and Safety Act for Province of Prince New Brunswick, and Occupational Health and Safety Regulations made pursuant to the Act.
- .3 Comply with Canada Labour Code - Part II (entitled Occupational Health and Safety) and the Canada Occupational Health and Safety Regulations (COSH) as well as any other regulations made pursuant to the Act.
  - .1 The Canada Labour Code can be viewed at:  
[www.http://laws.justice.gc.ca/en/L-2/](http://laws.justice.gc.ca/en/L-2/)
  - .2 COSH can be viewed at: [www.http://laws.justice.gc.ca/eng/SOR-86-304/ n e .html](http://laws.justice.gc.ca/eng/SOR-86-304/n_e.html)
  - .3 A copy may be obtained at: Canadian Government Publishing Public Works & Government Services Canada Ottawa, Ontario, K1A 0S9 Tel: (819) 956-4800 (1-800-635-7943) Publication No. L31-85/2000 E or F)
- .4 Observe construction safety measures of:
  - .1 Part 8 of National Building Code
  - .2 Municipal by-laws and ordinances.
- .5 In case of conflict or discrepancy between above specified requirements, the more stringent shall apply.
- .6 Maintain Workers Compensation Coverage in good standing for duration of Contract. Provide proof of clearance through submission of Letter in Good Standing.
- .7 Medical Surveillance: Where prescribed by legislation or regulation, obtain and maintain worker medical surveillance documentation.

#### 1.5 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons and environment adjacent to the site to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by all workers, sub-contractors and other persons granted access to Work Site with safety requirements of Contract Documents,

applicable federal, provincial, and local by-laws, regulations, and ordinances, and with site-specific Health and Safety Plan.

## 1.6 SITE CONTROL AND ACCESS

Work on one side of the wharf at a time, to permit fishermen to load and unload during fishing season. Clearly isolate the work area from the fishermen's area. Submit manner of isolation to Departmental Representative as per section 01 33 00.

- .1 Control the Work and entry points to Work Site. Approve and grant access only to workers and authorized persons. Immediately stop and remove non-authorized persons.
  - .1 Departmental Representative will provide names of those persons authorized by Departmental Representative to enter onto Work Site and will ensure that such authorized persons have the required knowledge and training on Health and Safety pertinent to their reason for being at the site, however, Contractor remains responsible for the health and safety of authorized persons while at the Work Site.
- .2 Isolate Work Site from other areas of the premises by use of appropriate means.
  - .1 Erect fences, hoarding, barricades and temporary lighting as required to effectively delineate the Work Site, stop non-authorized entry, and to protect pedestrians and vehicular traffic around and adjacent to the Work and create a safe environment. See Section 01 50 00 for minimum acceptable requirements.
  - .2 Post signage at entry points and other strategic locations indicating restricted access and conditions for access.
  - .3 Use professionally made signs with bilingual message in the 2 official languages or international known graphic symbols.
- .3 Provide safety orientation session to persons granted access to Work Site. Advise of hazards and safety rules to be observed while on site.
- .4 Ensure persons granted site access wear appropriate PPE. Supply PPE to inspection authorities who require access to conduct tests or perform inspections.
- .5 Secure Work Site against entry when inactive or unoccupied and to protect persons against harm. Provide security guard where adequate protection cannot be achieved by other means.

## 1.7 PROTECTION

- .1 Give precedence to safety and health of persons and protection of environment over cost and schedule considerations for Work.
- .2 Should unforeseen or peculiar safety related hazard or condition become evident during performance of Work, immediately take measures to rectify situation and prevent damage or harm. Advise Departmental Representative verbally and in writing.

## 1.8 FILING OF NOTICE

- .1 File Notice of Project with pertinent provincial health and safety authorities prior to beginning of Work.
  - .1 Departmental Representative will assist in locating address if needed.



## 1.9 PERMITS

- .1 Post permits, licenses and compliance certificates, specified in section 01 10 10, at Work Site.
- .2 Where a particular permit or compliance certificate cannot be obtained, notify Departmental Representative in writing and obtain approval to proceed before carrying out applicable portion of work.

## 1.10 HAZARD ASSESSMENTS

- .1 Perform site specific health and safety hazard assessment of the Work and its site.
- .2 Carryout initial assessment prior to commencement of Work with further assessments as needed during progress of work, including when new trades and subcontractors arrive on site.
- .3 Record results and address in Health and Safety Plan.
- .4 Keep documentation on site for entire duration of the Work.

## 1.11 PROJECT/SITE CONDITIONS

- .1 Following are potential health, environmental and safety hazards at the site for which Work may involve contact with:
  - .1 Known latent site and environmental conditions:
    - .1 Working near/on watercourse.
    - .2 Working with tides.
    - .3 Uneven work surfaces.
  - .2 Facility on-going operations:
    - .1 The Contractor will co-operate with users of existing facilities. Maintain access to the existing wharf structures during fishing season and consult with the Departmental Representative for site access limitations.
    - .2 Should interference occur, take directions from Departmental Representative.
    - .3 Do not unreasonably encumber site with materials.
    - .4 Move stored products or equipment which interfere with operations.
    - .5 Comply with all regulations and authorities having jurisdiction over the work, whether on land or on water.
    - .6 Contractor will note that fishing activity in the harbour includes fishing boats, moorings, etc.
- .2 Above items shall not be construed as being complete and inclusive of potential health and safety hazards encountered during Work.
- .3 Include above items in the hazard assessment of the Work.

- .4 MSDS Data sheets of pertinent hazardous and controlled products stored on site can be obtained from Departmental Representative.

## 1.12 MEETINGS

- .1 Attend pre-construction health and safety meeting, convened and chaired by Departmental Representative, prior to commencement of Work, at time, date and location determined by Departmental Representative. Ensure attendance of:
  - .1 Superintendent of Work
  - .2 Designated Health & Safety Site Representative
  - .3 Subcontractors
- .2 Conduct regularly scheduled tool box and safety meetings during the Work in conformance with Occupational Health and Safety regulations.
- .3 Keep documents on site.

## 1.13 HEALTH AND SAFETY PLAN

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

- .4 On-site Communication Plan:
  - .1 Procedures for sharing of work related safety information to workers and subcontractors, including emergency and evacuation measures.
  - .2 List of critical work activities to be communicated with Facility Manager which have a risk of endangering health and safety of Facility users.
- .5 Address all activities of the Work including those of subcontractors.
- .6 Review Health and Safety Plan regularly during the Work. Update as conditions warrant to address emerging risks and hazards, such as whenever new trade or subcontractor arrive at Work Site.
- .7 Departmental Representative will respond in writing, where deficiencies or concerns are noted and may request re-submission of the Plan with correction of deficiencies or concerns.
- .8 Post copy of the Plan, and updates, prominently on Work Site.

#### **1.14 SAFETY SUPERVISION**

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

- .7 Keep inspection reports and supervision related documentation on site.

### **1.15 TRAINING**

- .1 Use only skilled workers on Work Site who are effectively trained in occupational health and safety procedures and practices pertinent to their assigned task.
- .2 Maintain employee records and evidence of training received. Make data available to Departmental Representative upon request.
- .3 When unforeseen or peculiar safety-related hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing.

### **1.16 MINIMUM SITE SAFETY RULES**

- .1 Notwithstanding requirement to abide by federal and provincial health and safety regulations; ensure the following minimum safety rules are obeyed by persons granted access to Work Site:
  - .1 Wear appropriate PPE pertinent to the Work or assigned task; minimum being hard hat, safety footwear, safety glasses and hearing protection.
  - .2 Immediately report unsafe condition at site, near-miss accident, injury and damage.
  - .3 Maintain site and storage areas in a tidy condition free of hazards causing injury.
  - .4 Obey warning signs and safety tags.
- .2 Brief persons of disciplinary protocols to be taken for noncompliance. Post rules on site.

### **1.17 CORRECTION OF NON-COMPLIANCE**

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 Departmental Representative will stop Work if non-compliance of health and safety regulations is not corrected in a timely manner.

### **1.18 INCIDENT REPORTING**

- .1 Investigate and report the following incidents to Departmental Representative:
  - .1 Incidents requiring notification to Provincial Department of Occupational Safety and Health, Workers Compensation Board or to other regulatory Agency.

- .2 Medical aid injuries.
  - .3 Property damage in excess of \$10,000.00,
  - .4 Interruptions to Facility operations resulting in an operational lost to a Federal department in excess of \$5000.00.
- .2 Submit report in writing.

### 1.19 HAZARDOUS PRODUCTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS).
- .2 Keep MSDS data sheets for all products delivered to site.
  - .1 Post on site.
  - .2 Submit copy to Departmental Representative.
  - .3 For interior work in an occupied Facility, post additional copy in one or more publicly accessible locations.

### 1.20 SITE RECORDS

- .1 Maintain on Work Site copy of safety related documentation and reports stipulated to be produced in compliance with Acts and Regulations of authorities having jurisdiction and of those documents specified herein.
- .2 Upon request, make available to Departmental Representative or authorized Safety Officer for inspection.

### 1.21 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on Work Site in accordance with Acts and Regulations of Province having jurisdiction.
- .2 Post other documents as specified herein, including:
  - .1 Site specific Health and Safety Plan
  - .2 WHMIS data sheets
  - .3 Fire and Safety Requirements
  - .4 Special Procedures on Lockout Requirements

## **1.1 RELATED WORK**

- .1 Construction/Demolition Waste Management and Disposal: Section 01 74 19.

## **1.2 DEFINITIONS**

- .1 Hazardous Material: Product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to the environment or adversely affect health of persons, animals, or plant life when released into the environment.

## **1.3 FIRES**

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

## **1.4 HAZARDOUS MATERIAL HANDLING**

- .1 Store and handle hazardous materials in accordance with applicable federal and provincial laws, regulations, codes 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 storage began.
- .4 Store and handle flammable and combustible materials in accordance with National Fire Code.
- .5 Transport hazardous materials in accordance with federal Transportation of Dangerous Goods Regulations and applicable Provincial regulations.

## **1.5 DISPOSAL OF WASTES**

- .1 Do not bury rubbish and waste materials on site. Dispose in accordance with project waste management requirements specified in Section 01 74 19.
- .2 Do not dispose of hazardous waste or volatile materials, such as mineral spirits, paints, thinners, oil or fuel into waterways, storm or sanitary sewers or waste landfill sites.
- .3 Dispose of hazardous waste in accordance with applicable federal and provincial laws, regulations, codes and guidelines.

## **1.6 DRAINAGE**

- .1 Provide temporary drainage and pumping as necessary to keep excavations and site

free from water.

- .2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with governing regulations and requirements.
- .4 Provide control devices such as filter fabrics, sediment traps and settling ponds to control drainage and prevent erosion of adjacent lands. Maintain in good order for duration of work.

### 1.7 WORK ADJACENT TO WATERWAYS

- .1 Do not operate construction equipment in waterways.
- .2 Do not use waterway beds for borrow material.
- .3 Do not dump excavated fill, waste material or debris in waterways.
- .4 At borrow sites, design and construct temporary crossings to minimize erosion to waterways in strict conformance with provincial and federal environmental regulations.
- .5 Do not skid logs or construction materials across waterways.
- .6 Avoid indicated spawning beds when constructing temporary crossings of waterways.
- .7 Do not blast under water or 100 m of spawning beds.
- .8 Do not refuel any type of equipment within 100 meters of a water body. Maintain equipment in good working condition with no fluid leaks, loose hoses or fittings.

### 1.8 POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment and plant to local authorities emission requirements.
- .3 Prevent sandblasting and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures.
- .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads and around entire construction site.
- .5 Have appropriate emergency spill response equipment and rapid clean-up kit on site located adjacent to hazardous materials storage area. Provide personal protective equipment required for clean-up.
- .6 Report, spills of petroleum and other hazardous materials as well as accidents

having potential of polluting the environment to Federal and Provincial Department of the Environment.

- .1 Notify Departmental Representative and submit a written spill report to Departmental Representative within 24 hours of occurrence.

## 1.9 WILDLIFE PROTECTION

- .1 Should nests of migratory birds in wetlands be encountered during work, immediately notify Departmental Representative for directives to be followed.
  - .1 Do not disturb nest site and neighboring vegetation until nesting is completed.
  - .2 Minimize work immediately adjacent to such areas until nesting is completed.
  - .3 Protect these areas by following recommendations of Canadian Wildlife Service.



## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Waste Management and Disposal: Section 01 74 21.

### **1.02 REFERENCES**

- .1 Reference Standards:
  - .1 U.S. Environmental Protection Agency (EPA)/Office of Water
    - .1 EPA 832/R-92-005-92, Storm Water Management for Construction Activities, Chapter 3.
    - .2 EPA General Construction Permit (GCP) 2012.
- .2 WHMS: Workplace Hazardous Materials Information System, Health Canada.
- .3 Transportation of Dangerous Goods Act. Transport Canada, updated 2008-02-21.
- .4 Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters, Department of Fisheries and Oceans Canada, 1998.
- .5 MBCA: Migratory Birds Convention Act, Environment Canada, 1994.
- .6 Canadian Coast Guard Regulations, Department of Fisheries and Oceans Canada.
- .7 Canadian Shipping Act, Transport Canada, 2001.
- .8 AWPA: American Wood Preserver Association

### **1.03 DEFINITIONS**

- .1 Hazardous Material: Product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to the environment or adversely affect health of persons, animals, or plant life when released into the environment.
- .2 Wetlands: land where the water table is at, near or above the surface or which is saturated for a long enough period to promote such features as wet-altered soils and water tolerant vegetation. Wetlands include organic wetlands or "peatlands," and mineral wetlands or mineral soil areas that are influenced by excess water but produce little or no peat.
- .3 Watercourse: refers to the bed and shore of a river, stream, lake, creek, pond, marsh, estuary or salt-water body that contains water for at least part of each year.
- .4 Alien species: refers to a species or subspecies introduced outside its normal distribution whose establishment and spread threaten ecosystems, habitats or species with economic or environmental harm.

- .5 Buffer zone: a vegetated land that protects watercourses from adjacent land uses. It refers to the land adjacent to watercourses, such as streams, rivers, lakes, ponds, oceans, and wetlands, including the floodplain and the transitional lands between the watercourse and the drier upland areas.
- .6 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally and/or historically.
- .7 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction.

#### **1.04 TRANSPORTATION**

- .1 Transport hazardous materials and hazardous waste in compliance with Federal Transportation of Dangerous Goods Act.
- .2 Do not overload trucks when hauling material. Secure contents against spillage.
- .3 Maintain trucks clean and free of mud, dirt and other foreign matter.
- .4 Avoid potential release of contents and of any foreign matter onto highways, roads and access routes used for the Work. Take extra care when hauling dredged material and other hazardous materials. Immediately clean any spillage and soils.
- .5 Before commencement of work, advise the Departmental Representative of the existing roads and temporary routes proposed to be used to access work areas and to haul material to and from the site, including roads to the dredged disposal field.

#### **1.05 HAZARDOUS MATERIAL HANDLING**

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

#### **1.06 PETROLEUM, OIL AND LUBRICANTS**

- .1 Comply with Federal and Provincial laws, regulations, codes and guidelines for

the storage of fuel and petroleum products on site.

- .2 Do not place fuel storage tanks and store fuel or other petroleum products within a 30 metre buffer zone of watercourses and wetlands. Do not fuel or lubricate equipment within this 30 metre buffer zone. Obtain approval from Departmental Representative of acceptable location on site for fuel storage and equipment service.
- .3 Do not dump petroleum products or any other deleterious substances on ground or in the water.
- .4 Be diligent and take all necessary precautions to avoid spills and contaminate the soil and water (both surface and subsurface) when handling petroleum products on site and during fueling and servicing of vehicles and equipment.
- .5 Maintain on site appropriate emergency spill response equipment consisting of at least one 250-litre (55 gallon) overpack spill kit for containment and cleanup of spills.
- .6 Maintain vehicles and equipment in good working order to prevent leaks on site.
- .7 In the event of a petroleum spill, immediately notify the Departmental Representative and the Canadian Coast Guard (CCG) at 1-800-565-1633 (24 hour report line). Perform clean-up in accordance with all regulations and procedures stipulated by authority having jurisdiction.

## 1.07 PETROLEUM, OIL AND LUBRICANTS

- .1 Comply with Federal and Provincial laws, regulations, codes and guidelines for the storage of fuel and petroleum products on site.
- .2 Do not place fuel storage tanks and store fuel or other petroleum products within a 30 metre buffer zone of watercourses and wetlands. Do not fuel or lubricate equipment within this 30 metre buffer zone. Obtain approval from Departmental Representative of acceptable location on site for fuel storage and equipment service.
- .3 Do not dump petroleum products or any other deleterious substances on ground or in the water.
- .4 Be diligent and take all necessary precautions to avoid spills and contaminate the soil and water (both surface and subsurface) when handling petroleum products on site and during fueling and servicing of vehicles and equipment.
- .5 Maintain on site appropriate emergency spill response equipment consisting of at least one 250-litre (55 gallon) overpack spill kit for containment and cleanup of spills.
- .6 Maintain vehicles and equipment in good working order to prevent leaks on site.
- .7 In the event of a petroleum spill, immediately notify the Departmental

Representative and the Canadian Coast Guard (CCG) at 1-800-565-1633 (24 hour report line). Perform clean-up in accordance with all regulations and procedures stipulated by authority having jurisdiction.

## 1.08 DISPOSAL OF WASTE

- .1 Do not bury rubbish, demolition debris and waste materials on site.
- .2 Dispose and recycle demolition debris and waste materials in accordance with project waste management requirements specified in section 01 74 21.
- .3 Do not dispose of hazardous waste, volatile materials (such as mineral spirits, paints, thinners etc...) and petroleum products into waterways, storm or sanitary sewers or in waste landfill sites.
- .4 Dispose of hazardous waste in accordance with applicable federal and provincial laws, regulations, codes and guidelines.
- .5 Concrete waste:
  - .1 Do not discharge residual or rejected concrete on site.
  - .2 Immediately clean any accidental release of concrete on site prior to solidification.
  - .3 Do not wash and clean concrete vehicles on site.
  - .4 Perform dumping of residual material and truck cleaning operations only at the concrete plant. Follow environmental regulations and good practices as approved by the Provincial Department of the Environment and other authorities having jurisdiction.

## 1.9 WATER QUALITY

- .1 Conduct dredging of a watercourse or wetland in such a manner to limit turbidity and reduce sediment suspension in the water to an absolute minimum at all times.
  - .1 Maintain appropriate production speed and momentum of the dredging equipment. Make adjustments as required and as approved by Departmental Representative.
  - .2 Strategically position dredging equipment and barge to avoid over the water swings of excavated material whenever possible.
- .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 Visually monitor the water turbidity of the surrounding areas adjacent to the work and up to the established dredge limit of 200 metre.
  - .1 Should excessive change occur in the turbidity beyond the dredge limit which differs from existing conditions of the surrounding water bodies, such as a distinct color difference; notify the Departmental Representative to obtain appropriate mitigation measures to be followed.
- .4 Water quality during suction dredging:

- .1 Minimize out-fall of the dredge material at the disposal site by placing the pipeline outtake at or near the water level surface.
- .2 Restrict vessel traffic adjacent to the disposal site to an absolute minimum to avoid the re-suspension of dredged material from propeller wash.
- .5 Water contamination by preservative treated wood:
  - .1 Preservative treated lumber and timber, whether plant or site treated, shall be cured for a minimum of 30 days from date of the treatment application before their installation in areas which will be in contact with the water.
  - .2 Do not cut treated wood lumber over the surface of a watercourse or wetland.
  - .3 Do not use liquid applied preservative products over the surface of a watercourse or wetland.
  - .4 Wood treated with Chromate Copper Arsenate (CCA) or Ammoniac Copper Zinc Arsenate (ACZA) must be CSA or AWP approved.
  - .5 Do not use timber and lumber treated with cresote, petroleum and pentachlorophenol for any part of the Work.
- .6 Do not washdown equipment within a 30 metre buffer zone of a wetland, watercourse or other identified environmentally sensitive area.

#### 1.10 BLASTING

- .1 Develop a Blasting Plan for any blasting required in the Work identifying measures employed to minimize the impact on fish, mammals, water quality and the environment.
- .2 Blasting Plan shall include the following minimum requirements:
  - .1 Predictive analysis conducted to assess the zone of influence of the blasting activities.
  - .2 Ensure that fish and mammals are scared away from the blasting area by use of boat, pre-blasting caps or by other means.
  - .3 Make use of shock wave padding (bubble curtain or air curtain) to minimize the transmission of the blast through the water.
  - .4 The number and magnitude of explosives used is kept to an absolute minimum as required for the Work.
- .3 Submit Blasting Plan to Departmental Representative for review prior to the commencement of any blasting.
- .4 Obtain required permit required by authority having jurisdiction.
- .5 All blasting must be conducted in accordance with DFO's 1998 "Guidelines for Use of Explosives In or Near Canadian Fisheries Waters", as prescribed by DFO.
- .6 Blasting is to occur at high tide while rock fragment removal and placement my occur during all tide levels (i.e. wet and dry conditions). No work will be conducted before June 29 to avoid potential conflicts with the Commercial lobster fishery which commences yearly in Mid November to June 29<sup>th</sup>.

### 1.11 SOCIOECONOMIC RESTRICTIONS

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

### 1.12 BIRD AND BIRD HABITAT

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

### 1.13 FISH AND FISH HABITAT

- .1 Be aware of the risk for contamination of the fish habitat at the site as a result of alien species being introduced in the water.
- .2 To minimize the possibility of fish habitat contamination, all construction equipment which will be immersed into the water of a watercourse, or has the possibility of coming into contact with such water during the course of the work, must be cleaned and washed to ensure that they are free of marine growth and alien species.

- .1 Equipment shall include boats, barges, cranes, excavators, haul trucks, pumps, pipe lines and other all miscellaneous tools and equipment previously used in a marine environment.
- .3 Cleaning and washing of equipment shall be performed immediately upon their arrival at the site and before use in or over the body of water.
- .4 Conduct cleaning and washing operations as follows:
  - .1 Scrap and remove heavy accumulation of mud and dispose appropriately.
  - .2 Wash all surfaces of equipment by use of a pressurized fresh water supply.
  - .3 Immediately follow with application of a heavy sprayed coating of undiluted vinegar or other environmentally approved cleaning agent to thoroughly remove all plant matter, animals and sediments.
  - .4 Check and remove all plant, animal and sediment matter from the all bilges and filters.
  - .5 Drain standing water from equipment and let fully dry before use.
  - .6 Upon removal from the water, drain standing water from equipment and let fully dry before removal off the site.
- .5 Do not perform cleaning and washdown within a 30 metre buffer zone of a wetland, watercourse or other identified environmentally sensitive area.
- .6 Record of Assurance Logbook:
  - .1 Maintain an on-going log of past and present usage and washdowns of all equipment to illustrate mitigation measures undertaken against fish habitat contamination by alien species.
  - .2 Write data in a hard cover bound logbook,
  - .3 Include the following:
    - .1 Date and location where equipment was previously used in a watercourse or wetland;
    - .2 Type of work performed.
    - .3 Dates of washdown for each piece of equipment;
    - .4 Cleaning method and cleaning agent(s) used.
- .7 Keep Record of Assurance Logbook updated from project to project. Upon request, submit logbook to Departmental Representative for review.
- .8 Abide by requirements and recommendations of the Federal Department of Environment and the Department of Fisheries and Oceans - Habitat Protection and Sustainable Development Branch in cleaning and washdown of equipment.

#### 1.14 AIR QUALITY

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

#### 1.15 FIRES

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

END OF SECTION



## 1.1 RELATED SECTIONS

- .1 Section 03 01 00 - Concrete Forming and Accessories
- .2 Section 03 27 26 - Underwater Placed Concrete
- .3 Section 05 50 00 - Miscellaneous Metals
- .4 Section 31 62 16.19 - Steel Pipe Piles

## 1.2 INSPECTION

- .1 Give timely notice requesting inspection of Work designated for special tests, inspections or approvals by Departmental Representative or by inspection authorities having jurisdiction.
- .2 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.
- .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.
- .4 Pay costs to uncover and make good work disturbed by inspections and tests.

## 1.3 TESTING

- .1 Tests on materials, equipment and building systems as specified in various sections of the Specifications is the responsibility of the Contractor except where stipulated otherwise.
  - .1 Provide all necessary instruments, equipment and qualified personnel to perform tests.
- .2 At completion of tests, turn over 2 sets of fully documented tests reports to the Departmental Representative. Submit in accordance with Section 01 33 00.
  - .1 Obtain additional copies for inclusion of a complete set in each of the maintenance manuals specified in Section 01 78 00.
- .3 Unspecified tests may also be made by Departmental Representative, at the discretion of the Departmental Representative. The costs of these tests will be paid for by the Departmental Representative.
- .4 Where tests or inspections reveal work not in accordance with contract requirements, Contractor shall pay costs for additional tests and inspections incurred by

Departmental Representative as required to verify acceptability of corrected work.

#### 1.4 INDEPENDENT INSPECTION AGENCIES

- .1 Departmental Representative may 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 mechanical and electrical equipment and other building systems.
  - .4 Performance verification tests before building commissioning procedures commences.
  - .5 Mill tests and certificates of compliance.
  - .6 Tests as specified within various sections designated to be carried out by Contractor under the supervision of Departmental Representative.
  - .7 Additional tests as specified in Clause 1.3.4 above.
- .2 Provide sufficient advance notice to Departmental Representative of time when the Work will be ready for testing by designated Testing Agency in order for Departmental Representative to make attendance arrangements with such Agency. When directed by Departmental Representative notify the Agency directly.
- .3 When specified or directed, submit Representative samples of materials, in required quantities, to Testing Agency for testing purposes. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.
- .4 Provide labour and facilities to obtain, handle and deliver samples.
- .5 Provide sufficient space on site for Testing Agency's exclusive use to store equipment and cure test samples.
- .6 Employment of Independent 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 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 Furnish labour and facility to provide access to the work being inspected and tested.
- .3 Co-operate to facilitate such inspections and tests.

#### 1.6 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 new and existing construction and finishes resulting from removal or replacement of defective work.

#### 1.7 MOCK-UPS

- .1 Prepare mock-ups of certain work as specified in various sections of the Specifications. Include in each mock-up all related work components representative of final assembly.
- .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 Dismantle and remove mock-up when directed by Departmental Representative, unless approval is given for mock-up to remain as part of the 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.
- .2 The Contractor shall retain a qualified electrician to perform the electrical hook-up to conform to the requirements of the Canadian Electrical Code.

## 1.3 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.

## 1.4 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.

## 1.5 WATER SUPPLY

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

## 1.6 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 (R2006).

.4 Maintenance and Disposal of Site Signs:

- .1 Maintain approved signs and notices in good condition for duration of project and dispose of offsite on completion of project or earlier if directed by Departmental Representative.

## 1.7 REMOVAL OF TEMPORARY FACILITIES

- .1 Remove temporary facilities from site when directed by Departmental Representative.

## **PART 1 - GENERAL**

### **1.1 SECTION INCLUDES**

- .1 Barriers.
- .2 Traffic Controls.

### **1.2 INSTALLATION AND REMOVAL**

- .1 Provide temporary controls in order to execute work expeditiously.
- .2 Remove from site all such work after use.

### **1.3 HOARDING**

- .1 Erect temporary site enclosure using new 1.2 m high snow fence wired to rolled steel "T" bar fence posts spaced at 2.4 m centres. Provide one lockable truck gate. Maintain fence in good repair.

### **1.4 GUARD RAILS AND BARRICADES**

- .1 Provide secure, rigid guard rails and barricades around open excavations.
- .2 Provide barricades along wharf structure when wheelguard is removed.
- .3 Provide as required by governing authorities.

### **1.5 ACCESS TO SITE**

- .1 Provide and maintain access to adjacent harbour facilities.

### **1.6 PUBLIC TRAFFIC FLOW**

- .1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform work and protect the public.

PWGSC  
Float and Guide Pile  
Installation  
Dipper Harbour  
Saint John County, N.B.  
Project No. R.076365.001

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TEMPORARY BARRIERS and  
ENCLOSURES

Section 01 56 00  
Page 2

## **1.7 FIRE ROUTES**

- .1 Maintain access to property including overhead clearances for use by emergency response vehicles.

## **1.8 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY**

- .1 Protect surrounding private and public property from damage during performance of work.
- .2 Be responsible for damage incurred.

## **PART 1 - GENERAL**

### **1.1 General**

- .1 Use new material and equipment unless otherwise specified.
- .2 Within seven (7) days of written request by Departmental Representative, submit following information for any materials and product proposed for supply:
  - .1 name and address of manufacturer,
  - .2 trade name, model and catalogue number,
  - .3 performance, descriptive and test data,
  - .4 compliance to specified standards,
  - .5 manufacturer's installation or application instructions,
  - .6 evidence of arrangements to procure.
  - .7 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 Material**

- .1 Where materials are specified by trade names, trademarks or manufacturers, when so listed in the various sections of the Specification or added into the Contract Documents by addendum, select one of the names listed for use on project.
- .2 In accordance with Clause 15 of the General Instructions to Bidders, Document No. R2710T, submission of alternative materials to those trade names of manufacturers listed in the contract documents as acceptable materials, must be done during the bidding period following procedures indicated therein.



- .3 Note that Document R2710T is incorporated by reference into, and forms part of the Bid and Contract Documents.

#### **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 1.1.2.6 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 the General Conditions.
- .3 Ensure cooperation of workers in laying out work. Maintain efficient and continuous supervision on site at all times.
- .4 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 Keep exposed fastenings to minimum, space evenly and lay out neatly.
- .3 Fastenings which cause spalling or cracking are not acceptable.

#### **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. Use resilient washers with stainless steel.

### **1.9 Storage, Handling and Protection**

- .1 Deliver, handle, store and maintain in manner to prevent deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .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 Store sheet materials on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .6 Immediately remove damaged or rejected materials from site.
- .7 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 immediately and appropriate measures to contain, cleanup and dispose in an environmentally responsible manner.

## 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 waste which creates hazardous conditions.

## 2 Cleaning During Construction

- .1 Maintain the work, at least on a daily basis free from accumulations of waste material and debris.
- .2 Provide on-site containers for collection of waste materials, and debris.
- .3 Remove waste materials, and debris from site.
- .4 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces.

## 3 Final Cleaning

- .1 In preparation for acceptance of the project on an interim or final certificate of completion perform final cleaning.
- .2 Remove grease, dust, dirt, stains, and other foreign materials, from interior and exterior finished surfaces.

## **PART 1 - GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 02 41 16 - Sitework, Demolition and Removal.

### **1.2 DISPOSAL OF WASTE**

- .1 Separate and recycle waste materials designated for disposal.
- .2 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard, and packaging material in appropriate on-site bins for recycling.
- .3 Place materials defined as hazardous or toxic in designated containers.
- .4 Divert unused metal materials from landfill to metal recycling facility as approved by Departmental Representative.
- .5 Fold up metal banding, flatten and place in designated area for recycling.
- .6 Unused paint or coating material must be disposed of at an official hazardous material collections site as approved by Departmental Representative.
- .7 Do not dispose of unused paint material into sewer system, streams, lakes, onto ground, or in any other location where it will pose a health or environmental hazard.
- .8 Disposal of waste volatile materials, mineral spirits, oil, and paint thinner into waterways, storm, or sanitary sewers is strictly prohibited.
- .9 Do not dispose of preservative treated wood through incineration.
- .10 Do not dispose of preservative treated wood with other materials destined for recycling or reuse.
- .11 Dispose of treated wood, end pieces, wood scraps and sawdust at a sanitary landfill.
- .12 Dispose of unused preservative material at an official hazardous material collections site. Do not dispose of unused preservative material into the sewer system, streams, lakes, on ground or in any other location where they will pose a health or environmental hazard.
- .13 Burying of rubbish and waste materials is prohibited.
- .14 All waste material not designated for recycle to be disposed of at an approved waste disposal site in accordance with appropriate environmental guidelines.

### **1.3 STORAGE AND HANDLING OF WASTE**

- .1 Store materials to be reused, recycled and salvaged in locations as directed by Departmental Representative.
- .2 Unless specified otherwise, materials for removal become property of Contractor.
- .3 Protect, stockpile, store and catalogue salvaged items.
- .4 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.

## **PART 2 - PRODUCTS**

- .1 Not Used.

## **PART 3 - EXECUTION**

### **3.1 APPLICATION**

- .1 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

### **3.2 CLEANING**

- .1 Remove tools and waste materials on completion of work and leave work area in clean and orderly condition.
- .2 Clean-up work area as work progresses.
- .3 Source separate materials to be reused or recycled into specified sort areas.

### **3.3 DIVERSION OF MATERIALS**

- .1 Separate materials from general waste and stockpile in separate piles or containers, to approval of Departmental Representative, and consistent with applicable fire regulations. Mark containers or stockpile areas. Provide instruction on disposal practices.
- .2 On-site sale of salvaged, recovered, reusable, or recyclable materials is not permitted.

## **PART 1 - GENERAL**

### **1.1 SECTION INCLUDES**

- .1 Administrative procedures preceding inspection and acceptance of Work by Departmental Representative.

### **1.2 PROJECT RECORD DOCUMENTS**

- .1 Contractor's Inspection: Coordinate and perform, in concert with subcontractors, an inspection and check of all Work. Identify and correct deficiencies, defects, repairs and perform outstanding items as required to complete the Work in conformance with Contract Drawings Documents.
  - .1 Notify Departmental Representative in writing when deficiencies from Contractor's inspection have been rectified and that Work is deemed to be completed and ready for Departmental Representative's inspection of the completed work.
    - .1 Submit color photographs of Work; field drawings that supplies sufficient tie points to locate footprint of backfilled notification to the Departmental Representative.
- .2 Departmental Representative's Inspection: Accompany Departmental Representative during all Substantial and final inspections of the Work.
  - .1 Address defects, faults and outstanding items Of work identified by such inspections.
  - .2 Advise Departmental Representative when all Deficiencies identified have been rectified. Submit color photographs of rectified work Along with this written notification.
- .3 Note that Departmental Representative will no issue a Certificate of Substantial Performance of the Work until such time that the Contractor performs following work and turns over the specified documents:
  - .1 Project record as-built field sketches;
  - .2 Final Operations and Maintenance manuals;
  - .3 Maintenance materials, parts and tools;
  - .4 Compliance certificates from applicable authorities;
  - .5 Reports resulting from designated tests;
  - .6 Demonstration and training complete with user manuals;
  - .7 Manufacturer's Guarantee Certificates;
  - .8 Testing, adjusting and balancing of equipment and systems complete with submission of tests reports;
  - .9 Commissioning of equipment and systems specified;
  - .10 Color photographs depicting all aspects of work completed;
  - .11 Material Removal log, and Waste Manifests.
- .4 Correct all discrepancies before Departmental Representative will issue the Certificate of Completion.

## **PART 1 - GENERAL**

### **1.1 SECTION INCLUDES**

- .1 Project Record Documents as follows:
- .1 As-built drawings;
- .2 As-built specifications;
- .3 Reviewed shop drawings.

### **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 Geodetic 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.