



**Fisheries and Oceans  
Canada**



**Small Craft Harbours**

**Ile d'Entrée – Magdalen Islands Region**

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**Anchor blocks installation**

**Project n° F3731-230118**

**Specifications for tender**

**October 2023**

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**Part 1            General**

**1.1                RELATED SECTIONS**

- .1        Section 01 14 00 - Work Restrictions.
- .2        Section 01 32 16 - Construction Progress Schedules - Bar (Gantt) Charts.

**1.2                WORK COVERED BY CONTRACT DOCUMENTS**

- .1        Works in Ile d'Entrée harbor include but without being limited to :
  - .1        Demolition and disposal of structures shown on plans.
  - .2        Excavation and recovery of stones in existing rock embankments;
  - .3        Construction and installation of gangway blocks cribworks (timbers or plastic pieces and hardware supplied by DFO);
  - .4        Installation of anchor blocks supplied by DFO; .
  - .5        Supply and installation of lamp post base, electrical conduits and pulling cable;
  - .6        Installation of new section of armor rock protection;
  - .7        It is to consider that Department of Fisheries and Oceans (DFO) already acquired stones for actual project that will be available on January 15<sup>th</sup> 2024:
    - .1        Armor rock stones;
    - .2        Filter stones;
    - .3        20mm stones;
    - .4        Mg 20;
  - .8        Material supplied by DFO will be shipped by DFO onsite.
  - .9        Contractor will be in charge of users security onsite.

**1.3                CONTRACTOR SITE OCCUPANCY**

- .1        Site may be used with certain restrictions until substantial completion of work. The work shall be carried out in coordination with the Harbour Authority.
- .2        Co-ordinate use of premises under direction of Departmental Representative.
- .3        Work with Departmental Representative and the Harbour Authority in scheduling operations to minimize conflict and to facilitate the use of the premises by all users.
- .4        Contractor shall consider while planning works, that activities in Harbour take place from March to October. Harbour access and wharf shall be available and safe at any time.
- .5        Find additional storage areas necessary to work performance under the terms of this contract and pay the cost.
- .6        Repair or replace, as directed by the Departmental Representative, for connection to the existing structure or an adjacent structure or for alignment with them, the parts of the existing structure that have been modified during construction.
- .7        Once the work is completed, existing structures must be in the same or better condition than before the work began.

#### **1.4 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING**

- .1 Execute work with least possible interference or disturbance to occupants, public and normal use of premises. Make necessary arrangements with Departmental Representative and Harbour Authority to facilitate execution of work.

#### **1.5 EXISTING SERVICES**

- .1 Notify Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2 Where Work involves breaking into or connecting to existing services, Departmental Representative 48 hours notice for necessary interruption of mechanical or electrical service throughout course of work. Minimize duration of interruptions. Carry out work at times as directed by governing authorities with minimum disturbance to tenant operations.
- .3 Provide alternative routes for personnel, pedestrian and vehicular traffic.
- .4 Establish location and extent of service lines in area of work before starting Work. Notify Departmental Representative of findings.
- .5 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.
- .6 Provide temporary utilities according to Departmental Representative indications.
- .7 When unlisted utilities lines are discovered, immediately inform Departmental Representative, and record it in writing.
- .8 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.
- .9 Record the location of utilities lines that are maintained, displaced or abandoned.
- .10 Construct barriers and manage circulation in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

#### **1.6 WORK SEQUENCE**

- .1 Construct Work in stages, and if possible, as directed by Departmental Representative.
- .2 Coordinate Progress Schedule with Departmental Representative.
  - .1 **All work shall be completed by April 26 th 2024.**
  - .2 For more information on deadlines, refer to section 01 32 16 – Construction progress schedule - Bar (Gantt) charts
- .3 Sequence activities to limit exposure of partially constructed work to waves, ice and snow storms. Damages to new structures, partially constructed or completed, prior to substantial completion, due to Contractor or subcontractor operations, shall be repaired by Contractor at no additional cost for Departmental Representative.

#### **1.7 CONTINUITY OF SERVICES**

- .1 Fishing activities normally start in mid-April and ends in mid-October.

**1.8 DOCUMENTS**

- .1 Maintain at work site, one copy of each document mentioned above:
  - .1 Contract drawings
  - .2 Specifications
  - .3 Addenda
  - .4 Reviewed shop drawings
  - .5 List of outstanding shop drawings
  - .6 Change orders
  - .7 Other modifications to Contract
  - .8 Field test reports
  - .9 Copy of approved work schedule
  - .10 Health and safety plan and other safety related documents
  - .11 Other documents as specified

**Part 2 Products**

**2.1 NOT USED**

- .1 Not used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not used.

**END OF SECTION**

## **1 General**

### **1.1 RELATED SECTIONS**

- .1 Section 01 32 16 - Construction Progress Schedules - Bar (Gantt) Charts
- .2 Section 01 35 43 – Environmental Procedures
- .3 Section 01 56 00 – Temporary Barriers and Enclosures

### **1.2 ACCESS AND EGRESS**

- .1 Design, construct and maintain temporary "access to" and "egress from" work areas, including stairs, runways, ramps or ladders, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations.

### **1.3 USE OF SITE AND FACILITIES**

- .1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated.
- .2 Maintain the existing utilities services and provide personnel and vehicles with access to the work site.
- .3 Where security is reduced by work provide temporary means to maintain security.

### **1.4 MODIFICATIONS, REPAIRS OR ADDITIONS TO EXISTING STRUCTURES**

- .1 Perform works by disrupting the less users, and normal use of the premises. In this regard, make arrangements with the Department's representative to facilitate the implementation of the prescribed work.

### **1.5 EXISTING SERVICES**

- .1 Inform the representative of the Department and public carriers of the scheduled interruption of services and obtain permissions.
- .2 Whether to perform pressure on existing networks or connections to those networks, notify the representative of Ministry 48 hours before the scheduled time of interruption of the electrical or mechanical systems services. Ensure that the duration of interruptions is as short as possible. Make breaks after normal hours of work of the occupants, preferably weekend.
- .3 Ensure the movement of pedestrians, vehicles and personnel.
- .4 Build temporary barriers of protection in accordance with the 01 56 00 - works for access and protection section.
- .5 Preserve safe navigation close to the entrance and in the Harbour

### **1.6 SPECIAL REQUIREMENTS**

- .1 Noisy work shall be performed Monday through Friday between 7 am and 18 pm.
- .2 Develop and submit construction progress schedule in accordance with Section 01 32 16 – Construction Progress Schedules – Bar (Gantt) Charts.

- .3 Contractor shall comply with environmental limitation mentioned in Section 01 35 43 – Environmental Procedures.
- .4 Ensure that Contractor personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .5 Keep within limits of work, and avenues of ingress and egress free of obstacles.
- .6 In his construction schedule, the Contractor shall ensure the continuity of operations by other users during the work period.
- .7 The Contractor is responsible for obtaining, from harbour authority officials, all relevant information concerning activities in the fishing harbour. Plan and carry out the work so as not to hamper fishing activities or impede access to port facilities.

## **1.7 SAFETY**

- .1 Provide temporary means to maintain security if it has been reduced because of the work covered by this contract.

## **1.8 NAVIGATION INTERFERENCE**

- .1 It is of Contractor's responsibility to get from harbour authorities all information necessary to perform his activities in the harbour. Contractor shall plan and execute work in such manner that it will not interfere with usual operations, or limit access to wharf, by land or water.
- .2 Contractor is responsible for loss of time, equipment, material or any other cost related to interference with moored vessels, displacements of ships in harbour or other impacts Caused by Contractor's operations.

## **2 Products**

### **2.1 NOT USED**

- .1 Not Used.

## **3 Execution**

### **3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                MEASUREMENT METHOD**

- .1        The Contractor shall, within five (5) days after receiving an acceptance notice for the contract, provide cost breakdown for global units items.
- .2        The Contractor shall provide, within five (5) days after receiving an acceptance notice for the contract, a list of equipment and the hourly rates for each of the equipment available for the works.
- .3        The Contractor shall, within five (5) days after receiving an acceptance notice for the contract, provide a list of hourly rates for his staff.
- .4        The lump sum price and unit prices will include, but not limited to, leasing, equipment installation, equipment, tools, labour, administrative costs, profit, funding, expenditure for work not specifically defined either in the plan, or specifications or any other tender documents, but considered necessary so as to conform to best practices.
- .5        All work described in this specifications, or presented in the plans, or necessary for the completion of all the work specified herein, but not defined as a separate item requiring a fixed rate or unit payment, will be considered as directly or indirectly linked to the overall purpose of the contract and no separate payment will be made for any of these works; the cost of any work that is directly or indirectly linked to the aim of this contract must however be included in the unit prices quoted in the tender.
- .6        The method used to measure labour, tools or materials for the contract will be as follows:
- .7        **Refer to section 01 11 01 for article 1.2.1 for material supplied by DFO.**
- .8        Measuring method for items will be:
  - .1        Item 1 – Mobilization – Demobilization
    - .1        This item is measured as a lump sum price and includes all cost incurred for shipping and handling of all material and site installation.
    - .2        This item will be paid in a proportion of 50% at beginning of works and 50 % after site remediation and final cleaning of site. If some equipment must be demobilized before end of works, a payment upon justification could be approved by departmental representative.
  - .2        Item 2 - Site organization
    - .1        Item will be measured as a lump sum price and includes all items listed in division 1, also items that cannot be assigned to another measurement item.
    - .2        This item shall include all the necessary work and the means to ensure continuity of services for fishermen.
    - .3        This item also includes all works indicated on Drawing and Specs and that that there are not included in other items.



- .4 Site organization during work will be paid proportionately with monthly progress payments.
- .5 Construction site surveying and staking is under responsibility of contractor and is included in actual item.
- .3 Item 3 – Demolition, excavation and recovery
  - .1 This item will be measured as a lump sum price and includes without being limited to demolition and disposal of items shown on plans; excavation, stock piling and back filing of recovered material in area shown on plans.
- .4 Item 4 –Cribworks gangway blocks:
  - .1 This item will be measured at a lump sum price
  - .2 This item includes without being limited, supply of ballast stones and installation of cribworks gangway blocks according to location shown on plans. All accessories and components are included. Backfilling with new or recovered material is also included in actual item. Wood or plastic pieces ; hardware and stones for foundation are supplied by DFO.
- .5 Item 5 – Installation of anchor block.
  - .1 This item will be measured at a lump sum price.
  - .2 It includes recovery of anchor blocks supplied by DFO onsite and installation in works.
  - .3 It also includes stones foundation installation and type IV geotextile. Stone for foundation supplied by DFO.
- .6 Item 6 – Empty pipes and pulling boxes.
  - .1 This item will be measured at a lump sum price.
  - .2 It includes supply and installation of pipes, fittings, pulling boxes and ropes, CG 14 sand cover and type IV geotextile .
- .7 Item 7- Armor rock protection:
  - .1 This item will be measured by the ton
  - .2 This item is broken down as follow :
    - .1 1-2t stone installation
    - .2 100kg-200kg stone installation
    - .3 Mg 20 gravel installation;
    - .4 Quarry run supply and installation;
  - .3 Shipping of material supplied by DFO will be at charge of DFO.

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PAYMENT PROCEDURES  
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**END OF SECTION**

**Part 1            General**

**1.1                APPOINTMENT AND PAYMENT**

- .1    Departmental Representative will appoint and pay for services of testing laboratory for quality control as required. :
  - .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.
- .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.

**1.2                CONTRACTOR'S RESPONSIBILITIES**

- .1    Provide labour, equipment and facilities to:
  - .1    Provide access to Work for inspection and testing.
  - .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 48 hours 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 2            Products**

**2.1                NOT USED**

- .1    Not Used.

**Part 3            Execution**

**3.1                NOT USED**

- .1    Not Used.

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**END OF SECTION**

**Part 1            General**

**1.1                ADMINISTRATIVE**

- .1     Schedule of project meetings throughout the course of the work and at the request of the Departmental Representative, and the management of these.
- .2     Provide physical space and make arrangements for meetings.

**1.2                PRECONSTRUCTION MEETING**

- .1     Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.
- .2     Points on the agenda of the day
  - .1     Designation of official representatives of the participants in the work.
  - .2     Schedule of work, according to section 01 32 16 – Construction progress schedule - bar (GANTT) charts.
  - .3     Schedule of submission of shop drawings, samples, colour chips. Submit submittals in accordance with Section 01 33 00 – Submittal Procedures.
  - .4     Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section according to the 01 52 00 – Construction facilities.
  - .5     Delivery of materials and materials prescribed schedule.
  - .6     Site security in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.
  - .7     Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
  - .8     Owner provided products.
  - .9     Record drawings in accordance with Section 01 33 00 - Submittal Procedures.
  - .10    Maintenance manuals in accordance with Section 01 78 00 - Closeout Submittals.
  - .11    Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.
  - .12    Progress payments, administrative procedures, photographs, hold backs.
  - .13    Appointment of inspection and testing agencies or firms.
  - .14    Insurances, transcript of policies.

**1.3                PROGRESS MEETINGS**

- .1     Schedule meetings that will be held during the course of the work.
- .2     Contractor, major subcontractors involved in work and Departmental Representative are to be in attendance.
- .3     Agenda to include the following:
  - .1     Review, approval of minutes of previous meeting.
  - .2     Review of Work progress since previous meeting.

- .3 Field observations, problems, conflicts.
- .4 Problems which impede construction schedule.
- .5 Review of off-site fabrication delivery schedules.
- .6 Corrective measures and procedures to regain projected schedule.
- .7 Revision to construction schedule.
- .8 Progress schedule, during succeeding work period.
- .9 Review submittal schedules: expedite as required.
- .10 Maintenance of quality standards.
- .11 Review proposed changes for effect on construction schedule and on completion date.
- .12 Other

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

## 1.1 DÉFINITIONS

- .1 Activity: determined work carried out as part of a project. An activity normally has an expected duration and expected cost in resources-related needs. Activities can be subdivided into tasks.
- .2 Bar Chart (GANTT Chart): graphic display of schedule related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date placed horizontal bars. Generally Bar Chart should be derived from commercially available computerized project management system.
- .3 Baseline: original approved plan (for project, work package, or activity), plus or minus approved scope changes.
- .4 Construction Work Week: Monday to Friday, inclusive, will provide 5 day-work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.
- .5 Duration: number of work periods (not including holidays or other nonworking periods) required to complete activity or other project element. Usually expressed as workdays or workweeks.
- .6 Master Plan: summary level schedule that identifies major activities and key milestones.
- .7 Milestone: significant event in project, usually completion of major deliverable.
- .8 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision-making throughout project life cycle.
- .9 Project Planning, Monitoring and Control System: overall system operated by Departmental Representative to enable monitoring of project work in relation to established milestones.
- .10 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .11 The overall plan must provide for the realization of the work according to the prescribed milestones, within the agreed time.
- .12 Limit activity durations to maximum of approximately 10 working days, to allow for progress reporting.
- .13 Ensure that it is understood that Award of Contract or time of beginning, Certificate of substantial performance and Final Certificate as defined times of completion are of essence of this contract.

## 1.2 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to Departmental Representative within 10 working days of Notice of acceptance of the offer, the Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.

- .3 Submit Project Schedule to Departmental Representative within 5 working days of receipt of acceptance of Master Plan.
- .4 The Contractor shall be responsible for the information required to set up the work schedule. The Contractor shall submit to the Departmental Representative information concerning the work operations and sequence, the breakdown of the work into activities and the duration of these activities.
- .5 Work schedules are submitted subject to approval by the Departmental Representative. The Departmental Representative may require additional schedules or reports to demonstrate timely progress in the work or any other project deadline or indication of unrealistic performance.
- .6 Approval of work schedules by the Departmental Representative does not release the Contractor from its obligation to complete the work in accordance with the contract documents. Approval of the submitted schedules by the Departmental Representative shall not make the latter liable for time or cost overruns resulting from delays in the schedule.
- .7 The work schedule and monthly schedule updates shall be provided to the Departmental Representative for review with each request for payment as a condition of processing the payment request.
- .8 The Departmental Representative and the Contractor shall revise the updated work schedule at each progress meeting. The Contractor shall revise the schedule to incorporate changes made during the progress meetings.
- .9 When the deadlines or the completion date are not met, the Contractor shall, at no additional cost to the Departmental Representative, undertake one or more of the following: increase labour, increase working hours or take other actions to eliminate work delays.

### **1.3 PROJECT MILESTONES**

- .1 Milestones of the project are the interim targets set out in the schedule.
- .2 Works consist, without limitations, to:
  - .1 Supply of stone and aggregates of various sizes, also wood beams, bolt products and plastic sheathings for new wharves construction
  - .2 Dredging the exclusion zone in the area of installation of the new wharves.
  - .3 Construction of new treated wooden crib with concrete slabs
  - .4 Repairs with existing and imported stone of protection of access of wharf # 401
  - .5 Upgrading of electrical services on wharf #402.
  - .6 Reinstallation of wench on new concrete base.
  - .7 Construction of the granular surface of the services area.

### **1.4 MASTER PLAN**

- .1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar (GANTT) Chart.
- .2 Departmental Representative will review and return revised schedules within 5 working days.



- .3 Revise impractical schedule and resubmit within 5 working days.
- .4 Accepted revised schedule will become Master Plan and be used as baseline for updates.
- .5 Contractor shall be responsible for information required to develop the construction schedule. Contractor shall provide Departmental Representative with information regarding work operations, sequence of work, breakdown of the work into activities, and time estimates for the activities.

## **1.5 PROJECT SCHEDULE**

- .1 Develop a timetable for execution detailed from the master plan.
- .2 The time frame detailed must at least understand the steps for the following activities.
  - .1 Award
  - .2 Shop drawings, samples
  - .3 Permits
  - .4 Mobilization
  - .5 Stone delivery
  - .6 Material delivery
  - .7 Dredging of exclusion zone for bedding of new wharves
  - .8 Stone protection repairs
  - .9 Construction of wharves
  - .10 Installation of accessories (ladders, cleats, wheel guard)
  - .11 Installation of power supply.
  - .12 Demobilization

## **1.6 PROJECT SCHEDULE REPORTING**

- .1 Update Project Schedule on weekly basis reflecting activity changes and completions, as well as activities in progress.
- .2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.
- .3 The approval of Project Schedule by the Departmental Representative does not relieve the Contractor of his obligation to achieve works according to specifications. The acceptance of submitted Project Schedule by Departmental Representative will not make him responsible for goings of time or costs resulting from delays.
- .4 Both Departmental Representative and Contractor will have to update the Project Schedule at each site meeting. The Contractor will have to modify the Project Schedule in order to include the modifications that are done.
- .5 When the limit date or work achievement date will not be respected, the Contractor will, and this without additional fees for Departmental Representative, have to take one or more

**1.7 PROJECT MEETINGS**

- .1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.
- .2 Weather related delays with their remedial measures will be discussed and negotiated.

**Part 2 Products**

- 2.1 NOT USED**
- .1 Not used.

**Part 3 Execution**

- 3.1 NOT USED**
- .1 Not used.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED SECTIONS**

- .1            Section 01 45 00 - Quality control

**1.2                ADMINISTRATIVE**

- .1            Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2            Do not proceed with Work affected by submittal until review is complete.
- .3            Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4            Where items or information is not produced in SI Metric units converted values are acceptable.
- .5            Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .6            Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7            Verify field measurements and affected adjacent Work are co-ordinated.
- .8            Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .9            Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .10           Keep one reviewed copy of each submission on site.

**1.3                SHOP DRAWINGS AND PRODUCT DATA**

- .1            The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2            Submit shop drawings bearing stamp and signature of qualified professional engineer registered or licensed in the Province of Québec, Canada.
- .3            Coordinate the submission of necessary documents or samples in accordance with work and contract document requirements. Documents or samples submitted individually will not be verified until all related information is available.
- .4            Identify potential stakeholders in the project, such as the Contractor, subcontractors and suppliers, as well as all sections of the specifications, shop drawings and details relating thereto.

- .5 Leave a space on the documents for the "Document Verification" stamp by the Contractor and Departmental Representative.
- .6 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .7 Allow 5 days for Departmental Representative's review of each submission.
- .8 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .9 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.
- .10 Accompany submissions with transmittal letter, in duplicate, containing:
  - .1 Date
  - .2 Project title and number
  - .3 Contractor's name and address
  - .4 Identification and quantity of each shop drawing, product data and sample
  - .5 Other pertinent data
- .11 Submissions include:
  - .1 Date and revision dates
  - .2 Project title and number
  - .3 Name and address of:
    - .1 Subcontractor
    - .2 Supplier
    - .3 Manufacturer
  - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
  - .5 Details of appropriate portions of Work as applicable:
    - .1 Fabrication.
    - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
    - .3 Setting or erection details.
    - .4 Capacities.
    - .5 Performance characteristics.
    - .6 Standards.
    - .7 Operating weight.
    - .8 Wiring diagrams.

- .9 Single line and schematic diagrams.
- .10 Relationship to adjacent work.
- .12 After Departmental Representative's review, distribute copies.
- .13 Submit 3 copies of shop drawings for each requirement requested in specification Sections.
- .14 Submit 3 copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
- .15 Submit 3 copies of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
  - .2 Testing must have been within 3 years of date of contract award for project.
- .16 Submit three (3) copies of certificates for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
  - .2 Certificates must be dated after award of project contract complete with project name.
- .17 Soumettre trois (3) copies des instructions du fabricant prescrites dans les sections techniques du devis et exigées par le Représentant du Ministère.
  - .1 Documents préimprimés décrivant la méthode d'installation des produits, matériels et systèmes, y compris des notices particulières et des fiches signalétiques indiquant les impédances, les risques ainsi que les mesures de sécurité à mettre en place.
- .18 Submit 3 copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by the Departmental Representative.
- .19 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .20 Submit 3 copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by the Departmental Representative.
- .21 Delete information not applicable to project.
- .22 Supplement standard information to provide details applicable to project.
- .23 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

- .24 Review of shop drawings is for sole purpose of ascertaining conformance with general concept.
  - .1 This review shall not mean that Departmental Representative approves detail design inherent in 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 construction and Contract Documents.
  - .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of all sub-trades.

#### **1.4 SAMPLES**

- .1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Departmental Representative's site office.
- .3 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
- .5 Adjustments made on samples by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing Departmental Representative prior to proceeding with Work.
- .6 Make changes in samples which Departmental Representative may require, consistent with Contract Documents.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

#### **1.5 MOCK-UPS**

- .1 Erect mock-ups in accordance with 01 45 00 - Quality Control

#### **1.6 PHOTOGRAPHS SHOWING WORK PROGRESS**

- .1 Submit a copy of colour digital photography in .jpg format, standard resolution as directed by the Departmental Representative.
- .2 Project identification: name and number of project and date of exposure indicated.
- .3 Frequency of photographic documentation: as directed by the Departmental Representative.
  - .1 Upon completion of excavation, foundation, framing and services facilities works, before concealment

#### **1.7 CERTIFICATES AND TRANSCRIPTS**

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.
- .2 The Contractor shall:

- .1 When specified in individual Specification Sections, submit certification by manufacturer to Departmental Representative, in quantities required.
- .2 Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- .3 Certificates may be recent or previous test results on material or Product, but must be acceptable to Departmental Representative.

**1.8 PRODUCT DATA**

- .1 The Contractor shall:
  - .1 Submit the number of copies that the Contractor requires, plus two copies to be retained by Departmental Representative.
  - .2 Mark each copy to identify applicable products model, option, and other data. Supplement manufacturers' standard data to provide information unique to the Project.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

## **Part 1            General**

### **1.1                REFERENCES**

- .1        Canada Labour Code - Part II, Canadian Occupational Safety and Health Regulations.
- .2        Province of Québec
  - .1        Act Respecting Occupational Health and Safety, R.S.Q. Chapter S-2.1.
  - .2        Construction Safety Code, S-2.1, r.6.
- .3        Canadian Standards Association (CSA)
- .4        Workplace Hazardous Materials Information System (WHMIS)
  - .1        Material Safety Data Sheets (MSDS).
- .5        Canada Shipping Act and Navigable Waters Protection Act

### **1.2                SUBMITTALS**

- .1        Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2        Submit to Departmental Representative, the CNESST and the Association paritaire en santé et sécurité du secteur de la construction (ASP Construction) the site-specific safety program, as outlined in 1.8 at least 10 days prior to start of work. The Contractor must review his program during the course of the project if any change occurs in work methods or site conditions. The Departmental Representative may, after receiving the program or at any time during the project, ask the Contractor to update or modify the program in order to better reflect the reality of the construction site and activities. The Contractor must make the required changes before work begins.
- .3        Submit to Departmental Representative the site inspection sheet, duly completed, at the intervals indicated in 1.15.
- .4        Submit to Departmental Representative within 24 hours a copy of any inspection report, correction notice or recommendation issued by federal or provincial inspectors.
- .5        Submit to Departmental Representative within 24 hours an investigation report for any accident involving injury and any incident exposing a potential hazard.
- .6        Submit to Departmental Representative all safety data sheets for hazardous material to be used at the site at least three days before they are to be used.
- .7        Submit to Departmental Representative copies of all training certificates required to apply the safety program, in particular:
  - .1        General construction site safety and health courses;
  - .2        Safety officer attestations;
  - .3        First aid in the workplace and cardiopulmonary resuscitation;
  - .4        Wearing and fitting of individual protective gear;
  - .5        Forklift truck;
  - .6        Positioning platform;
  - .7        Any other requirement of Regulations or the safety program.



- .8 Medical examinations: Wherever legislation, regulations, directives, specification or a safety program require medical examinations, Contractor must:
  - .1 Prior to start-up, submit to Departmental Representative certificates of medical examination for all concerned supervisory staff and employees who will be on duty when the site opens.
  - .2 Thereafter, submit without delay certificates of medical examination for any newly hired concerned personnel as and when they start work at the site.
- .9 Emergency plan: The emergency plan, as defined in 1.8.5, shall be submitted to Departmental Representative at the same time as the site-specific safety program.
- .10 Notice of site opening: Notice of site opening shall be submitted to the Commission *de la santé et de la sécurité du travail* before work begins . A copy of such notice shall be submitted to Departmental Representative at the same time and another posted in full view at the site. During demobilization, a notice of site closing shall be submitted to the CNESST, with copy to Departmental Representative.
- .11 Engineer's plans and certificates of compliance : Submit to the CNESST and to Departmental Representative a copy signed and sealed by engineer of all plans and certificates of compliance required pursuant to the Construction Safety Code (S-2.1, r. 6), or by any other legislation or regulation or by any other clause in the specifications or in this contract. Copies of these documents must be on hand at the site at all times.
- .12 Certificate of compliance delivered by the CNESST: The certificate of compliance is a document delivered by the CNESST confirming that the contractor is in rule with the CSST, i.e. that he had pay out all the benefits concerning this contract. This document must be delivered to Departmental Representative at the end of the work.

### **1.3 FILING OF NOTICE**

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.
- .2 Contractor shall be responsible and assume the Principal Contractor role for each work zone location and not the entire complex. Contractor shall provide a written acknowledgement of this responsibility with 3 weeks of contract award. Contractor to submit written acknowledgement to CNESST along with Ouverture de Chantier Notice.
- .3 Contractor shall agree to install proper site separation and identification in order to maintain time and space at all times throughout life of project.

### **1.4 HAZARDS ASSESSMENT**

- .1 The contractor must identify all hazards inherent in each task to be carried out at the site.
- .2 The contractor must plan and organize work so as to eliminate hazards at source or promote mutual protection so that reliance on individual protective gear can be kept to a minimum. Where individual protection against falling is required, workers shall use safety harness that meets standard Can - CSA- Z-259.10 - 06. Safety belts shall not be used as protection against falling.
- .3 Equipment, tools and protective gear which cannot be installed, fitted or used without compromising the health or safety of workers or the public shall be deemed inadequate for the work to be executed.

- .4 All mechanical equipment shall be inspected before delivery to the site. Before using any mechanical equipment, submit to Departmental Representative a certificate of compliance signed by a qualified mechanic. Whenever he suspects a defect or accident risk, Departmental Representative may at any time order the immediate shut-down of equipment and require a new inspection by a specialist of his own choosing.

## **1.5 MEETINGS**

- .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.
- .2 Contractor decisional representative must attend any meetings at which site safety and health issues are to be discussed
- .3 Set up a site safety committee, and convene meetings in accordance with the Construction Safety Code.

## **1.6 LEGAL AND REGULATORY REQUIREMENTS**

- .1 Perform Work in accordance to Section 01 41 00 – Regulatory Requirements
- .2 Comply with all legislation, regulations and standards applicable to the site and its related activities.
- .3 Comply with specified standards and regulations to ensure safe operations at site containing hazardous or toxic materials.
- .4 Regardless of the publication date shown in the construction safety code, always use the most recent version.

## **1.7 SITE-SPECIFIC CONDITIONS**

- .1 In his work planning, Contractor shall not disturb Harbour activities
- .2 Workers to be exposed to the following conditions:
  - .1 Work near watercourse.
  - .2 Work involving risk of drowning.
  - .3 Marine work with difference of tide of around 1,0 metres and water depth near 2.5 metres under chart datum.
- .3 The weather conditions may be difficult (wind, cold, etc...). Harbour may be exposed to heavy agitation caused by waves and also moving ice floes.
- .4 Until final acceptance, the protection of work for work stability and workers' security during work progress remains under Contractor's responsibility.

## **1.8 GENERAL REQUIREMENTS**

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

- .3 Acknowledge and assume all the tasks and obligations which customarily devolve upon a principal Contractor under the terms of the Act Respecting Occupational Health and Safety (R.S.Q., chapter S-2.1) and the Construction Safety Code (S-2.1, r.6).
- .4 Develop a site-specific safety program based on the hazards identified and apply it from the start of project work until close-out is completed. The safety program must take account of all information appearing in 1.7 and must be submitted to all parties concerned, in accordance with the provisions set forth in 1.2. At a minimum, the site-specific safety program must include:
  - .1 Company safety and health policy.
  - .2 A description of the work, total costs, schedule and projected workforce curve.
  - .3 Flow chart of safety and health responsibility.
  - .4 The physical and material layout of the site.
  - .5 First-aid and first-line treatment standards.
  - .6 Identification of site-specific hazards.
  - .7 Risk assessment for the tasks to be carried out, including preventive measures and the procedures to apply them.
  - .8 Training requirements.
  - .9 Procedures in case of accident/injury
  - .10 Written commitment from all parties to comply with the prevention program.
  - .11 A site inspection schedule based on the preventive measures.
- .5 The contractor must draw up an effective emergency plan based on the characteristics and constraints of the site and its surroundings. Submit the emergency plan to all parties concerned, pursuant to the provisions of 1.2. The emergency plan must include:
  - .1 Evacuation procedure;
  - .2 Identification of resources (police, firefighters, ambulance services, etc.);
  - .3 Identification of persons in charge at the site;
  - .4 Identification of those with first-aid training;
  - .5 Training required for those responsible for applying the plan;
  - .6 Any other information needed, in the light of the site characteristics.
- .6 For all work involving risk of drowning, conform to following requirements:
  - .1 Comply with the Safety Code for the Construction Industry, paragraph 2.10.13.
  - .2 Ensure that required life vests are conforming to:
    - .1 CAN/GGSB-65.7-2007, Life Jackets, Inherently Buoyant published by the Canadian General Standards Board (CGSB).
    - .2 Or exceptions to be approved by Transport Canada.
  - .3 Obtain and submit to Departmental Representative a letter of compliance issued by Transport Canada for approval of any craft (transportation, rescue, inspection or other) prior to commencement of work
  - .4 Ensure that a rescue craft is moored, in the water and available for every shift. When craft is accessible by land, it can be used by several work locations provided that distance between each work location and craft is less than 100 metres.

- .5 Ensure that craft is equipped with a motor powerful enough to travel upstream.
- .6 Ensure that craft has required characteristics to carry individuals likely to participate in a rescue operation.
- .7 Ensure that craft is available for personnel at all times in case of emergency.
- .8 Ensure that a qualified individual is available to operate rescue equipment. Individual must be qualified to operate recreational craft, depending on length of craft used.
- .9 Establish written rescue procedures containing the information below and ensure that all personnel concerned by these procedures have received the necessary training and information to apply them.
  - .1 Complete descriptions of the procedures, including responsibilities of individuals permitted access to place of work.
  - .2 Location of rescue equipment.
- .10 When place of work is a landing wharf, dock, jetty, pier or other similar structure, install a ladder with at least two rungs below surface of water on front of structure every 60 metres. This measure also applies to construction projects. In this case, a temporary (or portable) ladder can be used and removed at end of work if Owner does not have basic facilities. But we have to notify the owner that site is not in accordance with the Canada Labour Code, Part 2.

## **1.9 RESPONSIBILITIES**

- .1 Assume responsibility of health and safety of those present on the site, as well as the protection of property located on the site; assume also, in contiguous areas to the construction site, the protection of people and the environment insofar as they are affected by the work.
- .2 Respect, and ensure respect by employees, security requirements set out in the contract Documents, orders, laws and local regulations, territorial, provincial and federal law applicable, as well as the health and safety plan for the site.
- .3 Take all necessary measures to ensure application of and compliance with the safety and health requirements of the contract documents, applicable federal and provincial regulations and standards as well as the site-specific safety program, complying without delay with any order or correction notice issued by the Commission de la santé et de la sécurité du travail.
- .4 No matter the size of the construction site or how many workers are present at the workplace, designate a competent person to supervise and take responsibility for health and safety
- .5 Take all necessary measures to ensure application of and compliance with the safety and health requirements of the contract documents, applicable federal and provincial regulations and standards as well as the site-specific safety program, complying without delay with any order or correction notice issued by the Commission de la santé et de la sécurité du travail.
- .6 Take all necessary measures to keep the site clean and in good order throughout the course of the work

### **1.10 COMMUNICATIONS AND POSTING**

- .1 Make all necessary arrangements to ensure effective communication of safety and health information at the site. As they arrive on site, all workers must be informed of their rights and obligations pertaining to the site specific safety program. The Contractor must insist on their right to refuse to perform work which they feel may threaten their own health, safety or physical integrity or that of other persons at the site. The Contractor must keep and update a written record of all information transmitted with signatures of all affected workers.
- .2 The following information and documents must be posted in a location readily accessible to all workers:
  - .1 Notice of site opening;
  - .2 Identification of Principal Contractor;
  - .3 Company OSH policy;
  - .4 Site-specific safety program;
  - .5 Emergency plan;
  - .6 Data sheets for all hazardous material used at the site;
  - .7 Minutes of site committee meetings;
  - .8 Names of site committee representatives;
  - .9 Names of those with first-aid training;
  - .10 Action reports and correction notices issued by the CNESST.

### **1.11 CONFORMITY REQUIREMENTS**

- .1 Comply with the labour act : Loi sur la santé et la sécurité du travail, L.R.Q., c. S-2.1, et au Code de sécurité pour les travaux de construction, c. S-2.1, r. 4.
- .2 Comply with the Regulations on health and safety at work made under the Canada Labour Code

### **1.12 UNFORESEEN CIRCUMSTANCES**

- .1 Whenever a source of danger not defined in the specifications or identified in the preliminary site inspection arises as a result of or in the course of the work, immediately suspend work, take appropriate temporary measures to protect the workers and the public and notify Departmental Representative, both verbally and in writing.

### **1.13 DOCUMENTS DISPLAYING**

Ensure that documents, articles, orders, and relevant notices are displayed prominently on the site, in accordance with the laws and to the province and in consultation with the Departmental Representative.

### **1.14 NON-COMPLIANCES FIXING**

- .1 When a specified in the quote and no identifiable source of danger during the preliminary inspection of the site appears by the fact or during the execution of the work, the contractor must immediately stop work, implement temporary protection measures for workers and the public, and prevent the departmental representative orally and in writing.

Subsequently, the contractor shall make the necessary changes to the prevention program so that the work can resume safely.

- .2 Immediately take the necessary steps to correct situations deemed non-compliant, in terms of health and safety, by the competent authority or by the departmental representative.
- .3 Provide to the departmental representative a written report measures taken to correct the situation in the event of non-compliance in health and security. The representative of the Department may order the stop work if the contractor does not have the necessary corrections with regard to the non-compliant health and safety conditions considered.

#### **1.15 INSPECTION OF SITE AND CORRECTION OF HAZARDOUS SITUATIONS**

- .1 Inspect the work site and complete the site inspection sheet at least once a week.
- .2 Immediately take all necessary measures to correct any lapses from legislative or regulatory requirements and any hazards identified by a government inspector, by the Departmental Representative, by the site safety and health coordinator or during routine inspections.
- .3 Submit to Departmental Representative written confirmation of all measures taken to correct lapses and hazardous situations.
- .4 Give the safety officer or, where there is no safety officer, the person assigned to safety and health responsibilities, full authority to order interruption and resuming of work as and when deemed necessary or desirable in the interests of safety and health. This person should always act so that the safety and health of the public and site workers and environmental protection take precedence over cost and scheduling considerations.
- .5 Without limiting the scope of sections 1.8 and 1.9, Departmental Representative may order cessation of work if, in his/her view, there is any hazard or threat to the safety or health of site personnel or the public or to the environment.

#### **1.16 BLASTING**

- .1 s/o

#### **1.17 CARTOUCHES DEVICES**

- .1 s/o

#### **1.18 WORK STOPS**

- .1 Priority to the health and safety of the public as well as the site personnel, and the protection of the environment, on issues related to the cost and timing of the work.

### **Part 2 Products**

#### **2.1 NOT USED**

- .1 Not Used.

<b>Part 3</b>	<b>Execution</b>
<b>3.1</b>	<b>NOT USED</b>
.1	Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                DEFINITIONS**

- .1    Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally and/or historically.
- .2    Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction.

**1.2                DOCUMENTS/ÉCHANTILLONS À SOUMETTRE POUR  
APPROBATION/INFORMATION**

- .1    Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2    Product Data:
  - .1    Submit manufacturer's instructions, printed product literature and data sheets.
  - .2    Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29 - Health and Safety Requirements.
  - .3    Prior to the start of construction activities or the delivery of materials and equipment to site, submit an environmental protection plan to the Departmental Representative;
  - .4    The environmental protection plan must include the following.
    - .1    Name of persons responsible for ensuring compliance with the plan;
    - .2    Name and qualifications of persons responsible for training site personnel;
    - .3    A description of the training program for staff assigned to environmental protection;
    - .4    Drawings showing the location of temporary excavations or fill site tracks, watercourse crossings, materials, constructions, sanitary facilities, deposits of surplus materials or soiled materials; drawings illustrating methods that will be used to control runoff water and to contain materials on site;
    - .5    Traffic control plans, including measures to reduce erosion of temporary roadbeds by construction vehicle traffic, particularly in wet weather.
    - .6    The emergency plan in the event of a spill must include the procedures to be implemented, the instructions to be observed, the list of stakeholders including their phone numbers and reports to be produced in the event of an unforeseeable spill of a regulated substance;

**1.3                FIRE**

- .1    Fire and waste material burning are prohibited.



#### **1.4 DISPOSAL OF WASTES**

- .1 Do not bury rubbish and waste materials on site unless approved by Departmental Representative.
- .2 Do not discharge any wastes into the aquatic environment. All accidentally introduced wastes must be removed as soon as possible.
- .3 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- .4 Grade and classify all reusable demolition materials from wharf to manage their future utilisation or disposal in compliance with all applicable environmental regulations.
- .5 All necessary installations for the use of grading and classification of reusable or disposal materials must be plan out of work site and in a safe and predetermined area.
- .6 Contractor shall gradually dispose of non-reusable material from demolition off work site to an authorized site.
- .7 Waste materials from demolition and non reusable in the new structure shall be recycle if possible, and if not, the site of disposal shall be approved by the Quebec Ministère de l'Environnement et de la Lutte contre les changements climatiques (MELCC). Upon request, the department may provide information on the sites in operation. This includes any dry material, waste or rubbish from demolition or construction.
- .8 Contractor shall submit a copy of official authorization and permits prior to seek Departmental Representative's authorization to remove waste materials from work site.
- .9 Dispose of contaminated waste and soils according to Québec's regulation and with Québec's Soil Protection and Rehabilitation of Contaminated Sites Policy.
- .10 Dispose of soils according to Québec's regulation

#### **1.5 WORK ADJACENT TO WATERWAYS**

- .1 Waterways shall be kept free of excavated fill, waste material and debris.
- .2 Do not use banks or waterway beds material for borrow.
- .3 Do not dump construction material, waste or debris in waterways.
- .4 Cleaning of equipment in the water is prohibited.
- .5 Service and refuel vehicles at least 30 m from bank.
- .6 Do not store petroleum products or any other hazardous materials less than 30 m from bank.
- .7 If for some reasons certain equipment or hazardous products, implying hazardous material handling, should stay beneath 30 m from waterways, Contractor shall submit a contingency plan to the Departmental Representative and get it approved prior to beginning of work. The plan will provide, without being limited to, details as follows:
  - .1 Designated inner limits of work area for the use of operations;
  - .2 Handled or stored hazardous products (ex. diesel, waste oils, etc.);
  - .3 Containment methods used in order to limit contamination during maintenance and refuelling of equipment and vehicles (in case of oil leakage);

- .4 The presence of emergency equipment in case of spill near supplying zone and maintenance area.
- .5 The procedure for hazardous spill.
- .6 A list of contacts in case of hazardous spill.
- .7 If generators must be used, make sure that the fuel tank of each generator is with double walls and that it is installed on an impermeable floor with raised kerb to avoid any discharge.
- .8 Before work begins and after it is completed, the Contractor shall provide, at its own expense, a characterization of the chemical quality of soil on the site used for refuelling, maintenance and storage of machinery, heavy equipment .
- .9 Soil characterization shall be performed by a recognized firm in accordance with the procedures specified by the MELCC and CCME. The sampling plan and protocol shall be approved by the Departmental Representative.
- .10 In the event of soil contamination in the targeted areas as a result of project-related activities, the site shall be restored to comply with its intended use,

## **1.6 INVASIVE ALIEN SPECIES**

- .1 In order to avoid the introduction of invasive alien marine species in natural ecosystem, the following measures shall be taken:
  - .2 Ensure that work equipment and machinery are clean and free of invasive species upon arrival on site and maintain them in this condition thereafter.
  - .3 For marine equipment cleaned and stored overland, before commencement of Work, contractor shall provide in writing to the Departmental Representative:
    - .1 Floating equipment list,
    - .2 Storage site
    - .3 Target date of launching
    - .4 Departmental representative shall be able to verify if the equipment is clean and stored overland before commencement of Work.
- .4 For equipment already in the water and before its mobilization, Contractor shall demonstrate at his own expense that the floating equipment is free of invasive alien marine species. Just before mobilization, Contractor shall present an inspection report certifying that the equipment is free of invasive alien marine species.
  - .1 Report shall be produced by qualified biologist in the identification of benthic fauna
  - .2 Sampling shall be realized by divers.
  - .3 Prior to site mobilization, Report submitted to Departmental Representative shall contain pictures and to be signed by a biologist before submitted to Departmental Representative. Report shall include, but is not limited to:
    - .1 The list of the inspected equipment
    - .2 Date and inspection site
    - .3 Summary of the protocol sampling and identification
    - .4 Samples listing

- .5 Results,
- .6 Certificate concerning the presence or the absence of species
- .5 If the inspection report confirms the presence of invasive alien species, Contractor shall replace equipment or proceed at his own expense to the complete cleaning of the equipment. The description of the cleaning works carried out shall be included in a new inspection report to certify the absence of invasive alien species.
- .6 Departmental Representative reserves the right to conduct a counter-expertise at his own expense at any time. If the presence of alien invasive species is observed, Contractor shall stop the Works and clean at his own expense the equipment referred and produce a new report.
- .7 The release into the water of aquatic invasive species found on equipment, machinery or artificial structures is prohibited.

## **1.7 POLLUTION CONTROL**

- .1 Maintain temporary facilities to prevent erosion and pollution, and implemented under this contract.
- .2 Control emissions from equipment and plant to local authorities emission requirements.
- .3 Prevent fine materials and other extraneous materials from contaminating air and water beyond work site.
- .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Following indications of Departmental Representative, water the dry materials.
- .5 Use clean materials free of contaminants to create the riprap.
- .6 Use machinery in good operating condition to avoid grease, oil or fuel leaks. Submerged equipment parts shall be clean and free of leaks.
- .7 Perform service and verifications on all machineries (excavator, crane, etc) by a qualified mecanican before arrival at site. Ensure there are no fuel, oil or grease leaks, and silencer must be in good condition. Repair non-compliant equipment as rapidly as possible (noise or leaks).
- .8 Immediately recover any contaminant spill in the environment and dispose of it in accordance with applicable legislation.
- .9 Maintain absorbent materials on site at all times for rapid intervention in case of hazardous spill. Know how to use emergency equipment in case of accidental spill. Report any oil spill or other environmental incident to Departmental Representative and authorities having jurisdiction. Recover hydrocarbons and contaminated soil and dispose of in conformance with applicable legislation.
- .10 L'Entrepreneur devra fournir un plan d'urgence relatif à un déversement environnemental, avec liste des intervenants incluant leur numéro de téléphone.
- .11 Keep on site suitable emergency equipment in case of an accidental spill and ensure the appropriate use of it.
- .12 Keep on site, near the work area and near the supplying zone established, an emergency spill response kit. The emergency spill response kit shall contain absorbent material in adequate quantities to remove petroleum from site.

- .13 In the event of a hydrocarbons spill or other hazardous material, the Contractor must advise Departmental Representative and authorities having jurisdiction mentioned in the emergency plan. Report immediately the situation to Environment Canada Emergency services (1-866-283-2333), Environment Emergency of Québec (1-866-694-5454) for an on land spills and to Canadian Coast Guard- Marine Accidental Spill Incidents (1-800-363-4735).
- .14 Soils or fill materials contaminated by an accidental spill must:
  - .1 be stockpiles on waterproof membrane and covered with waterproof membrane;
  - .2 be sampled according to the methods recommended in the Sampling Guide for Environmental Analysis, Booklet 5: CEHQ Soil Sampling;
  - .3 be subjected to laboratory chemical analyzes for C10 to C50 petroleum hydrocarbons, metals, polycyclic aromatic hydrocarbons (PAHs) and volatile organic compounds (VOCs);
  - .4 be managed according to the regulations in force and thus transported to an authorized site.
- .15 Water contaminated by an accidental spill must be confined in order to be characterized or taken care of directly by a specialized company which will transport it to a treatment center approved by the MELCCFP.
- .16 Wasted oils and other contaminated wastes shall be managed in compliance with effective regulation. This included storage at site, transportation and elimination.
- .17 Do not dispose of volatile materials such as mineral oils and oil or paint thinner in rivers, storm-water or sewers.
- .18 Any hazardous waste generated on the work site will have to be conveyed to a well-authorized disposition site by MELCC.
- .19 Hazardous waste storage and transport will have to be done in accordance with the regulation in force in order not to contaminate the environment.
- .20 Prior to conveying hazardous waste from work site, the Contractor shall obtain Departmental Representative authorization by showing a copy of all licenses obtained from the owners or hazardous waste disposal site authorities

## **1.8 TRANSPORT OF MATERIALS**

- .1 Materials may be transported on public roads to construction site from Monday to Saturday unless notified otherwise by the authorities having jurisdiction. Transport is prohibited on Sundays and public holidays.
- .2 Materials may be transported through the city between 7:00 a.m. and 5:00 p.m. (17h00) Transport outside these hours is prohibited.
- .3 Ensure proper operation of trucks used. Any trucks or other means of transport creating sound levels that Departmental Representative deems to exceed standards shall cease transporting materials or be repaired or modified to be made acceptable.
- .4 Contractor shall use adequate signalization and co-operate with municipality, Departmental Representative and other authorities having jurisdiction to minimize the impact of transportation on the daily lives of residents in area adjacent to truck route and construction site.

- .5 Use a sheet to cover granular material during transportation.
- .6 Limit traffic for the transportation of material to roads and areas identified in the specifications.
- .7 Maintain the roads used in good condition at all times and take the necessary measures to ensure they can be safely used and crossed by other users.
- .8 Upon work completion, promptly restore the roads to a condition that is at least equal to their original state.
- .9 If required, the Contractor must respect the speed restriction measures in the Gulf of St. Lawrence for the protection of North Atlantic right whales, according to the applicable dates and areas mentioned in the navigation warnings (AVNAVs) and ship safety bulletins.

#### 1.9 **PROTECTION OF THE AQUATIC ENVIRONMENT IN THE WORK AREA**

- .1 The work area should be clearly defined.
- .2 Ensure workers are informed of environmental and safety measures.
- .3 Do not store stone or debris from demolition on bank.
- .4 **Stock piles of material must remain out of higher high water of large tides (HHWLT). If required, stabilize or isolate material (tarp, sediment barrier) in a way to avoid sediment transport toward aquatic environment either with water flow or wind. .**
- .5 As work progresses, completely clean bank to recover all debris (wood) from demolition of existing wharf.
- .6 The Contractor shall minimize the work in aquatic environment and on bank. At anytime the heavy equipment will be allowed the move outside the work area.
- .7 For underwater works required, the Contractor must assure that all equipment pieces involved are free of contamination and of any oil leakage.
- .8 Machinery must no be stored less than 30 m from shore or circulate on marine bottom.
- .9 Select the storage location for materials, if applicable, based on the characteristics of the surrounding environment (accessibility, size of the location, distance from sensitive environments, etc.);
- .10 If possible, locate storage area less than 30m from sensible area and to 3 meters from ditch. Chose a flat lot or less than 10% slope.
- .11 If required, store contaminated material on a water tight membrane and cover with protective tarp from rain. Prefer less permeable surface such as clay, pavement or concrete away from surface water.
- .12 For works in tidal area, prefer working at low tide.
- .13 Mark and limit the movement of machinery to the strict minimum in the event that it has to pass below the level of the HWLHT when the area is exposed;

- .14 For works planned below the higher high water of large tide (HHWLT), prioritize, when possible, their implementation in an exposed area at low tide. Stabilize the site before the return of the tide.
- .15 Interrupt work when difficult weather conditions (e.g.: strong winds, storm, etc.) are anticipated or occur in order to avoid dispersion of sediment outside the work area.
- .16 Put in place effective measures to limit the supply of sediment from the site to the aquatic environment and ensure their maintenance (e.g. sediment barrier, berms, sediment trap, sedimentation basin, temporary stabilization of embankments, water deviation to vegetation areas). The measures must remain effective during periods of flooding, during heavy rains or during periods of frost.
- .17 Laying stones on the seabed, or as close to the bottom as possible, rather than dropping them from the surface to limit further encroachment and suspension of sediments;
- .18 For work carried out above high water level of high tide (HWLHT), put in place effective measures to limit the input of sediments from work site to aquatic environment and ensure their maintenance (p. g.: sediment barrier, berms, sediment trap, sedimentation pond, temporary stabilization of slopes, diversion of water towards vegetation areas). The measures must remain effective during the temporary closure of the site and during periods of flooding or during heavy rains.
- .19 Dispose of excavated material outside high water level of high tide (HWLHT). If required, confine or stabilize these materials (e.g.: impermeable membrane, sediment barrier) in order to prevent sediment to enter aquatic environment.
- .20 Workers must be aware of not unnecessarily suspending sediments from seabed during work by making sudden movements or by leveling the bottom by pivoting the bucket/equipment;

## **1.10 PROTECTION OF MARINE WILDLIFE IN THE WORKS SECTOR**

- .1 Ensure workers are made aware and be able to spot the presence of marine mammals or leatherback turtles in the area within 200 m of the harbor.
- .2 If a marine mammal or a leatherback turtle approaches within 200 m of the work area in an aquatic environment, stop the work and wait for the animal to move away more than 200 m.
- .3 In the event that marine mammals or leatherback turtles are found near the barges, the use of any means to frighten the animals should not be considered.

## **1.11 NOISY WORKS**

- .1 Noisy works are prohibited at night, unless absolutely necessary.
- .2 Schedule particularly noisy work during normal working hours and in accordance with municipal requirements, ie from 7:00 am to 7:00 pm;
- .3 Avoid as much as possible idling of engines;
- .4 Limit the use of the engine brake to a minimum when transporting equipment and materials;

- .5 Maintain motorized equipment in good working order (muffler and other noise reduction system);

## **1.12 CONTAMINATED MATERIALS**

- .1 Treated wood and contaminated soils shall be temporarily stored in leak-proof containers or under waterproof tarps prior to shipping the wood for sorting, removal of metals or other preparations so that the wood and any other contaminated materials can be contained from the soil and protected from the rain and so that runoff does not reach the soil or waterways. For example, wood piles can be placed on a waterproof tarp and covered with another waterproof tarp. Absorbents must be scattered around the piles to capture contaminants.
- .2 During the work, take all necessary measures to avoid spreading debris into the aquatic environment:
  - .1 Store waste and debris at a site distant from the aquatic environment, in agreement with Departmental Representative.
  - .2 Quickly retrieve debris or objects released into the aquatic environment.
  - .3 The Contractor shall provide a log of activities related to the management and disposal of demolition materials.
- .3 Contaminated sediments shall be sent to a site authorized by the MELCCFP and intended for this purpose.

## **1.13 TREATED WOOD CRIBWORK**

- .1 Cribwork must be carried out at a sufficient distance from a watercourse or other sensitive environments to avoid any contamination by storage, debris or sawdust;
- .2 Work must comply with the best practices of the following guide: Best Management Practices for the use of treated wood in aquatic and wetland environments (WWP Institute, 2011);
- .3 Store treated wood on a waterproof membrane and cover it with a protective sheet to protect from weather when not in use. Favor surfaces of limited permeability, such as clay and compacted earth, asphalt or concrete far from surface water;
- .4 Use cutting tools equipped with dust collectors.
- .5 Debris and sawdust must be recovered and disposed in accordance with regulations in force for this type of material. If these materials are temporarily stored on the site, they must be kept between membrane or in a waterproof container;
- .6 Require that CCA treated wood has undergone a chromotropic acid test verifying that the product is well fixed;
- .7 Require that treated wood be delivered membrane covered;
- .8 Inspect treated lumber at time of construction for surface deposits and dryness. Do not use non-compliant equipment;
- .9 Promote precut of wood pieces according to the desired specifications before their pressure treatment;
- .10 Consider incorporating a water repellent when treating wood with a water-based agent;

- .11 Check with supplier the possibility, for CCA-treated wood, of carrying out an industrial immersion period for 24 or 48 hours to eliminate surpluses and avoid significant rejections which occur at installation in water environment;
- .12 Wood treatments must not be applied in situ. In the case of finishing adjustments that can only be made on site, wood treatments should not be applied in situ when wood is in direct contact with water. Favor periods of low tide and without precipitation.

#### **1.14 NOTICE TO SHIPPING**

- .1 Issue a Notice to Shipping regarding date and duration of work, in accordance with the Canadian Navigable Waters Act.
- .2 Set up and meet requirements of license emitted under the terms of the Canadian Navigable Waters Act.

#### **1.15 WORK MONITORING**

- .1 Mitigation measures from the assessment report, and those mentioned in the present section will be subject to constant monitoring on work site by a Departmental Representative.
- .2 The Department Representative will complete an environmental control data record of work site. This control data record will be given to Contractor on a weekly basis.

#### **1.16 NON-COMPLIANCE NOTICE**

- .1 Departmental Representative will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.
- .2 Contractor: after receipt of such notice, inform Departmental Representative of proposed corrective action and take such action for approval by Departmental Representative.
  - .1 Take action only after receipt of written approval by Departmental Representative.
- .3 Departmental Representative will issue stop order of work until satisfactory corrective action has been taken.
- .4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

### **Part 2 Product**

#### **2.1 NOT USED**

- .1 Not used.



**Part 3            Execution**

**3.1                CLEANING**

- .1    Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1        Leave Work area clean at end of each day.
- .2    Bury rubbish and waste materials on site where directed after receipt of written approval from Departmental Representative.
- .3    Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.
- .4    Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .5    Waste Management: separate waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal
  - .1        Remove recycling containers and bins from site and dispose of materials at appropriate facility.

**FIN DE LA SECTION**

**Part 1           General**

**1.1               REFERENCES AND CODES**

- .1 All work shall meet or exceed the requirements of the latest edition of the standards of the Canadian Government Specifications Board (CGSB), the Canadian Standards Association (CSA), the National Building Code of Canada (NBC), the American Society for Testing and Materials (ASTM), the Canadian Standard Association (CSA), the American Concrete Institute (ACI), Cahier des charges et Devis généraux (CCDG) from Ministère des Transports du Québec and the other standards and codes referred to herein, including amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
- .2 Where conflict arises in the course of work, the strictest standards shall apply.
- .3 At any time when the specifications refer to standards, standard to be applied shall be the latest edition available, regardless of the edition designated in specification.
- .4 Meet or exceed requirements of:
  - .1 Contract documents.
  - .2 Specified standards, codes and referenced documents.

**1.2               LAWS, REGULATIONS AND DECREES**

- .1 Contractor shall conform to all rights and privileges of others, and to all federal, provincial and municipal laws, regulations and decrees; he must also make sure that his employees, in law or in fact, and his subcontractors conform to same.
- .2 The applicable permits and approvals will have to be obtained by the Contractor before the beginning of work.

**1.3               PERMITS, FEES AND TAXES**

- .1 Contractor shall give all notices, obtain and pay all fees and construction permits for the demolition and for construction, and for all other services, as required by the authorities having jurisdiction.
- .2 Contractor shall be responsible for all damage and costs resulting from default to obtain these fees and permits.

**Part 2           Products**

**2.1               NOT USED**

- .1 Not Used.

**Part 3            Execution**

**3.1                NOT USED**

.1            Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED SECTIONS**

- .1        Section 01 33 00 – Submittal procedures
- .2        Section 01 77 00 – Closeout procedures

**1.2                INSPECTION**

- .1        Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2        Give timely notice requesting inspection if Work is designated for inspections, approvals or special tests required by Departmental Representative or by law of Place of Work.
- .3        If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4        Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction.

**1.3                INDEPENDENT INSPECTION AGENCIES**

- .1        Independent Inspection/Testing Agencies will be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Departmental Representative.
- .2        Provide equipment required for executing inspection and testing by appointed agencies.
- .3        Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4        If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to Departmental Representative. Pay costs for retesting and reinspection.

**1.4                ACCESS TO WORK**

- .1        Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
- .2        Co-operate to provide reasonable facilities for such access.

**1.5                PROCEDURES**

- .1        Notify appropriate agency and Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.
- .2        Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.

- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

## **1.6 REPORTS**

- .1 Submit 2 copies of inspection and test reports to Departmental Representative
- .2 Provide copies to manufacturer or fabricator of material being inspected or tested.

## **1.7 TESTS AND MIX DESIGNS**

- .1 Furnish test results and mix designs as requested.
- .2 Cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work will be appraised by Departmental Representative.

## **1.8 MOCK-UPS**

- .1 Prepare mock-ups for Work specifically requested in specifications. Include for Work of Sections required to provide mock-ups.
- .2 Construct mock-ups in locations approved by the Departmental Representative.
- .3 Prepare mock-ups for Departmental Representative review with reasonable promptness and in orderly sequence, to not cause delays in Work.
- .4 Failure to prepare mock-ups in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .5 If requested, Departmental Representative will assist in preparing schedule fixing dates for preparation.
- .6 Remove mock-up at conclusion of Work or when acceptable to Departmental Representative.
- .7 Mock-ups may remain as part of Work.
- .8 Specification section identifies whether mock-up may remain as part of Work or if it is to be removed and when.

## **1.9 MILL TESTS**

- .1 Submit mill test certificates as required of specification Sections.

## **1.10 EQUIPMENT AND SYSTEMS**

- .1 Submit adjustment and balancing reports for mechanical, electrical Products

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not Used.

**Part 3            Execution**

**3.1                NOT USED**

.1            Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED SECTIONS**

- .1        Section 01 51 00 - Temporary Utilities
- .2        Section 01 56 00 - Temporary Barriers and Enclosures
- .3        Section 01 74 11 – Cleaning

**1.2                ACTION AND INFORMATIONAL SUBMITTALS**

- .1        Submittals in accordance with Section 01 33 00 - Submittal Procedures.

**1.3                INSTALLATION AND REMOVAL**

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

**1.4                SCAFFOLDING**

- .1        Scaffolding in accordance with CAN/CSA-S269.2.

**1.5                HOISTING**

- .1        Provide, operate and maintain hoists required for moving of workers, materials and equipment and provide maintenance and use of hoists.
- .2        Hoist to be operated by qualified operator.

**1.6                SITE STORAGE/LOADING**

- .1        Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products and materials.
- .2        Do not load or permit to load any part of Work with weight or force that will endanger Work.
- .3        Before storing equipment or materials on-site, the Contractor shall obtain written authorization from Harbour Authority.

**1.7                ON-SITE PARKING**

- .1        Parking will be permitted on site if it does not disrupt performance of Work. The storage area planned for the Contractor can be used for this purpose.
- .2        If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and repair damages resulting from Contractors' use of roads
- .3        Provide and maintain adequate access to project site.
- .4        Clean runways where used by Contractor's equipment.
  - .1        .

## **1.8 EQUIPMENT, TOOL AND MATERIALS STORAGE**

- .1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

## **1.9 SANITARY FACILITIES**

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

## **1.10 CONSTRUCTION SIGNAGE**

- .1 Provide and erect project sign, within three (3) weeks of notice of acceptance of order, in a location designated by Departmental Representative.
- .2 Construction sign 1.2 m x 2.4 m, of wood frame and plywood construction painted with exhibit lettering produced by a professional sign painter.
- .3 Indicate on sign, name of Owner, Contractor and Subcontractor (if applicable), of design style established by Departmental Representative.
- .4 No other signs or advertisements, other than warning signs, are permitted on site.
- .5 Provide project identification site sign comprising foundation, framing, and one 1200 x 2400 mm signboard as detailed and as described below.
  - .1 Foundations: 15 MPa concrete to CSA-A23.1 minimum 200 mm x 900 mm deep.
  - .2 Framework and battens: SPF, pressure treated minimum 89 x 89 mm.
  - .3 Signboard: Medium Density Overlaid Douglas fir Plywood to CSA O121.
  - .4 Paint: alkyd enamel to CAN/CGSB-1.59 over exterior alkyd primer to CAN/CGSB 1.189.
  - .5 Fasteners: hot-dip galvanized steel nails and carriage bolts.
- .6 Locate project identification sign as directed by Departmental Representative and construct as follows:
  - .1 Build concrete foundation, erect framework, and attach signboard to framing.
  - .2 Paint surfaces of signboard and framing with one coat primer and two coats enamel. Colour white on signboard face, black on other surfaces.
  - .3 Apply vinyl sign face overlay to painted signboard face in accordance with installation instruction supplied.
- .7 Direct requests for approval to erect Contractor signboard to Departmental Representative. For consideration general appearance of signboard must conform to project identification site sign. Wording in both official languages.



- .8 Signs and notices for safety and instruction in both official languages. Graphic symbols to CAN/CSA-Z321.
- .9 Maintain approved signs and notices in good condition for duration of project, and dispose of off-site on completion of project or earlier if directed by Departmental Representative.

#### **1.11 PROTECTION AND MAINTENANCE OF TRAFFIC**

- .1 Provide access and temporary relocated roads as necessary to maintain traffic.
- .2 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Departmental Representative.
- .3 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs
- .4 Protect travelling public from damage to person and property.
- .5 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.
- .6 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.
- .7 Construct access and haul roads necessary.
- .8 Haul roads: constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided.
- .9 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .10 Dust control: adequate to ensure safe operation at all times.
- .11 Location, grade, width, and alignment of construction and hauling roads: subject to approval by Departmental Representative.

#### **1.12 ELECTRICAL SERVICES**

- .1 Supply necessary electrical services on work site.
- .2 Assume the cost of these electrical services, whether for lighting, heating or other uses.
- .3 Assume the cost of installation and removal of these electrical services
- .4 The installation of electrical services shall be abide by applicable laws and regulations

#### **1.13 TEMPORARY AIDS TO NAVIGATION AND MARKER BUOYS**

- .1 Provide temporary aids to navigation and marker buoys to delineate work areas acceptable to Canadian Coast Guard and Harbour Authority.
- .2 Coordinate with the Local Authorities to provide Notices to Mariners regarding navigation requirements throughout the duration of Work

**1.14 CLEANING**

- .1 Remove construction debris, waste materials, packaging material from work site daily.
- .2 Clean dirt or mud tracked onto paved or surfaced roadways.
- .3 Store materials resulting from demolition activities that are salvageable.
- .4 Stack stored new or salvaged material not in construction facilities.
- .5 Clean work area progressively.
- .6 Once Works is completed, remove machinery/tools and evacuate waste to leave the place in order.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL**

- .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, that complies with requirements of authorities having jurisdiction
- .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED SECTIONS**

- .1        Section 01 14 00 – Work Restrictions
- .2        Section 01 51 00 – Temporary Utilities
- .3        Section 01 52 00 – Construction Facilities

**1.2                REFERENCE STANDARDS**

- .1        Canadian General Standards Board (CGSB)
  - .1        CGSB 1.59, Alkyd Exterior Gloss Enamel.
  - .2        CAN/CGSB 1.189 , Exterior Alkyd Primer for Wood.
- .2        Canadian Standards Association (CSA International)
  - .1        CSA-O121, Douglas Fir Plywood.

**1.3                INSTALLATION AND REMOVAL**

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

**1.4                GUARD RAILS AND BARRICADES**

- .1        Provide secure, rigid guard rails and barricades around deep excavations.
- .2        Provide items as required by governing authorities.

**1.5                ACCESS TO SITE**

- .1        Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.

**1.6                FIRE ROUTES**

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

**1.7                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.

**1.8                PROTECTION OF WORK FINISHES**

- .1        Provide protection for finished and partially finished building finishes and equipment during performance of Work.
- .2        Provide necessary screens, covers, and hoardings.

- .3 Be responsible for damage incurred due to lack of or improper protection.

**1.9 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED SECTIONS**

- .1        Section 01 74 21 - Construction/demolition Waste Management
- .2        Section 01 77 00 - Closeout Procedures

**1.2                WORK SITE CLEANLINESS**

- .1        Maintain work site in tidy condition, free from accumulation of waste products and debris.
- .2        Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative
- .3        Do not burn waste materials on site, unless approved by Departmental Representative.
- .4        Keep work site access road free of ice and snow. Place snow only at indicated areas or evacuate out of work site as indicated.
- .5        Make arrangements to obtain all necessary licences from authorities for waste disposal.
- .6        Provide on-site containers for collection of waste materials and debris.
- .7        Provide and use marked separate bins for recycling. Refer to Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .8        Dispose of waste materials and debris off-site.
- .9        Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.
- .10      Store volatile waste in covered metal containers, and remove from premises at end of each working day.

**1.3                FINAL CLEANING**

- .1        When work is substantially performed, remove surplus products, tools, construction machinery and equipment not required for performance of remaining work.
- .2        Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .3        Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4        Remove waste products and debris including that caused by Owner or other Contractors.
- .5        Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .6        Make arrangements to obtain all necessary licences from authorities for waste disposal.
- .7        Inspect finishes, fitments and equipment and ensure specified workmanship and operation.

**1.4 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for recycling and reuse in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED SECTIONS**

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

**1.2                ADMINISTRATIVE REQUIREMENTS**

- .1        Acceptance of Work Procedures:
  - .1        Contractor's Inspection: Contractor: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
    - .1        Notify Departmental Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
    - .2        Request for Departmental Representative inspection.
  - .2        Departmental Representative Inspection:
    - .1        Departmental Representative and Contractor to inspect Work identify defects and deficiencies.
    - .2        Contractor to correct Work as directed.
  - .3        Completion Tasks: submit written certificates that tasks have been performed as follows:
    - .1        Work: completed and inspected for compliance with Contract Documents.
    - .2        Defects: corrected and deficiencies completed.
    - .3        Equipment and systems: tested, adjusted, balanced and fully operational.
    - .4        Certificates required by Utility companies: submitted.
    - .5        Operation of systems: demonstrated to Owner's personnel.
    - .6        Commissioning of mechanical systems: completed in accordance with Departmental Representative.
    - .7        Work: complete and ready for final inspection.
  - .4        Final Inspection:
    - .1        When completion tasks are done, request final inspection of Work by Departmental Representative, and contractor
    - .2        When Work incomplete according to Departmental Representative, complete outstanding items and request re-inspection.
  - .5        Declaration of Substantial Performance: when Departmental Representative considers deficiencies and defects corrected and requirements of Contract substantially performed, make application for Certificate of Substantial Performance.
  - .6        Commencement of Lien and Warranty Periods: date of Owner's acceptance of submitted declaration of Substantial Performance to be date for commencement

for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.

- .7 Certificate of Final Completion:
  - .1 When Departmental Representative considers final deficiencies and defects corrected and requirements of Contract met, make application for final payment.
  - .2 When Work deemed incomplete by Departmental Representative, complete outstanding items and request re-inspection.
- .8 Payment of Holdback: after issuance of Certificate of Substantial Performance of Work, submit application for payment of holdback amount in accordance with contractual agreement.

### **1.3 FINAL CLEANING**

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Remove surplus materials, excess materials, rubbish, tools and equipment.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

### **Part 2 Products**

#### **2.1 NOT USED**

- .1 Not Used.

### **Part 3 Execution**

#### **3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**



**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1    Section 05 50 00 – Metal fabrication
- .2    Section 06 05 73 – Wood treatment

**1.2                REFERENCES**

- .1    American Society for Testing and Materials International (ASTM)
  - .1    ASTM A307, Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
  - .2    ASTM A-123, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
  - .3    ASTM A153, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
  - .4    ASTM D1761, Standard Test Methods for Mechanical Fasteners in Wood.
  - .5    ASTM F1667, Driven Fasteners: Nails, Spikes, and Staples.
  - .6    ASTM F2329, Standard Specification for Zinc Coating, Hot-Dip, Requirements for Application to Carbon and Alloy Steel Bolts, Screws, Washers, Nuts, and Special Threaded Fasteners.
- .2    Canadian Standards Association (CSA International)
  - .1    CSA-G40.20/G40.21-04, 300/350W General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
  - .2    CSA-O80 Series-97, Wood Preservation.
- .3    Canadian Wood Council
  - .1    Wood Design Manual - 2005.
- .4    National Lumber Grades Authority (NLGA)
  - .1    Standard Grading Rules for Canadian Lumber 2003 edition.
- .5    Conseil de l'industrie forestière du Québec (CIFQ)
- .6    Forest Stewardship Council (FSC)
  - .1    FSC-STD-01-001, FSC Principles and Criteria for Forest Stewardship.
  - .2    FSC-STD-20-002, Structure, content and local adaptation of Generic Forest Stewardship Standards
- .7    Sustainable Forestry Initiative (SFI)
- .8    Canadian Standard Association for sustainable forest management (CAS).
- .9    British Columbia Lumber Manufacturer's Association
  - .1    Standard Specifications for Construction Grade

- .10 Ministry of Forests, Lands and Natural Resource Operations of British Columbia.
- .11 Interim Process Specification for CCA Treatment of Coastal Douglas-fir Wood
- .12 It supplier's responsibility to comply to all codes and standards related to material and various component.
- .13 All wood must be treated according to BMP - Best Management Practices for the use of treated wood in aquatic and sensitive environments.

### **1.3 ACTION/INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Shop Drawings:
  - .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Submit proposed placing method for ballast to Departmental Representative for approval, prior to placing of ballast

### **1.4 QUALITY ASSURANCE**

- .1 Quality Assurance: in accordance with Section 01 45 00 - Quality Control.
- .2 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .3 Worker protection:
  - .1 Workers must wear Personal Protective Equipment when handling, drilling, sawing, cutting or sanding preservative treated wood and applying preservative materials.
  - .2 Workers must not eat, drink or smoke while applying preservative material.
  - .3 Clean up spills of preservative materials immediately with absorbent material. Safely discard of adsorbent material to sanitary landfill.

### **1.5 QUALITY CONTROL**

- .1 If required, independent Inspection/Testing Agencies will be hired by Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be covered by Departmental Representative. If non-compliance are noted, additional tests expenses are at the expense of the supplier further to the correction of the non-compliance,
- .2 Hiring of inspection/testing agencies does not release contractor's responsibility to provide with material and to take responsibility for quality insurance in accordance with Contract Documents.
- .3 Provide equipment required for executing inspection and testing by appointed agencies.
- .4 Allow inspection/testing agencies access to Supplier's facilities.

- .5 Co-operate to provide reasonable facilities for such access.
- .6 Remove defective works, whether result of poor workmanship, use of defective products or damage and including defect which are noticed during the implementation of materials, which have been rejected by Departmental Representative as not in compliance with the contractual documents. Replace or re-execute in accordance with Contract Documents.

## 1.6 WASTE MANAGEMENT

- .1 Separate waste materials for reuse, recycling or elimination in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Place materials defined as hazardous or toxic in designated containers.
- .3 Ensure emptied containers are sealed and stored safely.
- .4 Do not dispose of preservative treated wood through incineration.
- .5 Do not dispose of preservative treated wood with other materials destined for recycling or reuse.
- .6 Dispose of treated wood, end pieces, wood scraps and sawdust at a sanitary landfill.

## Part 2 Products

### 2.1 MATERIALS

- .1 Lumber:
  - .1 Species : among the following : Douglas -larch ; Hemlock- fir; SPF
  - .2 Quality : No.1 according to the paragraph 130.B for the beams and stringer and 131.B for ports and square wood. However, all wood altered (soft rot) shall be rejected. A maximum of 30% of no. 2 quality is accepted.
  - .3 Timber grading must be specified in delivery slips and invoices. Timber must be stamped according to standard. If wood is delivered without that information, a laboratory will be hired at Contractor's expenses.
  - .4 Timbers has to be cut square in both ends before processing, according to the article 748 c) of the Standard Grading Rules for Canadian Lumber (precision cut).
  - .5 Minimum length for main member is 3660mm (12ft).
  - .6 All the parts must be rough wood;
  - .7 The wood must be dried before the treatment.
  - .8 Before the treatment with a product of conservation, dry materials until obtaining a degree of humidity not exceeding 25 %.
  - .9 Incision have to be made on all pieces of wood for the treatment.
  - .10 The product of conservation used for the treatment of the wood under pressure has to be in accordance with the standard CAN/CSA-080-M.

- .11 For Douglas, treatment process must be in compliance with *the Interim Process Specification for CCA Treatment of Coastal Douglas-fir Wood* of British Columbia, *Ministry of Forests, Lands and Natural Resource Operations*.
  - .12 The coastal Douglas fir must meet the requirements of the NLGA 2000 titled "Standard Grading Rules for Canadian Lumber".
  - .13 The coastal Douglas fir must meet the requirements of the British Columbia Lumber Manufacturers Association titled "Standard Specifications for Construction Grade".
- .2 Hardware
- .1 Bolts
    - .1 Bolts according to A307 B heavy hex, galvanised.
    - .2 Washer made of G40.21 300W or 350W steel galvanized, 10mm thick and 75 of outer diameter and 28.5 inner diameter. Square washer plates are not accepted.
    - .3 Lag bolts to be used with ASTM A436 washer, both to be galvanized.
    - .4 Bolts and nuts : hot dip galvanized to 560g / m2 according to ASTM A153.
    - .5 Bars and plates hot dip galvanized to 525g /m2 according to ASTM A123.
    - .6 Drift pins must comply with CSA O86, with a length of 15mm less than total of both timbers attached thickness.
  - .2 Nails, spikes and staples: in compliance with ASTM F1667, Driven Fasteners: Nails, Spikes, and Staples.

## 2.2 STORAGE, HANDLING AND DELIVERY INSTRUCTIONS

- .1 Timbers have to be grouped by dimensions and attached solidly in bundle. Every bundle have to be delivered and covered with waterproof membrane (top, four sides, up to 2/3 height). Take the precautions so that the tarp material does not adhere to the wood.
- .2 Timber length must be indicated on each side of the bundle (top and four sides), directly on the tarp.
- .3 Untreated wooden blocks must be supplied at unloading to support bundles and insure they will not be directly lie on the ground. Blocks will have to be for a maximum distance of 2400 mm, with 100x100mm (4'x4') minimum size.
- .4 Store the wood of work in horizontal position, equally supported and piled to allow the aeration when it is stored for long periods.
- .5 Timbers bundles must be sorted by length in the storage area positioned to insure that all timbers sizes are easily available to begin the prefabrication by the Contractor in charge of the works. The point must be coordinated with the Department Representative.
- .6 When wood is handled, support the bundle in several places to prevent damage by flexion.

- .7 Handle the work treated wood with slings or other approved transportation method by Department Representative, by avoiding damaging them, altering them or foul them and by following the instructions of the manufacturer, if necessary. Do not use sharp or sharp tools for the handling.
- .8 The maximal height of bundles, from the ground, in the storing area (boats wintering park) will not exceed 3 bundles high or 4 meters. The same pile should not include different lengths.
- .9 Plan ahead delivery, unloading and storage in a way to ensure continuous supply to work site.

### **Part 3 Execution**

#### **3.1 PREPARATION**

- .1 Before construction, stockpile sufficient ballast to completely fill cribs.
- .2 Preparing the foundation:
  - .1 Prior to the construction of the cribs, the Contractor shall carry out a full bathymetric survey of the area where cribs will be placed. The frequency of data collection points must be 0.5 meters c/c in each of the transverse and longitudinal directions. The Contractor shall submit to the Departmental Representative the prescribed survey and the changes in the conditions on the site. If bedrock is found at a level higher than the location of the crib bottom, refer to the plan for the way forward.

#### **3.2 APPLICATION**

- .1 Manufacturer's instructions: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

#### **3.3 CRIB CONSTRUCTION**

- .1 Precut and pre-bore timber prior to preservative treatment.
- .2 For the lag screws, bore guide holes with a diameter equivalent to 70% of the diameter of the stem of the lag. For drift pin, bore holes with the diameter of the type of hardware to be used, less than 1.0 mm than that of the latter. For mechanical bolts, bore holes with the same diameter as that of the bolts.
- .3 Construct timber cribwork to specified height prior to sinking in final position.
- .4 No joints are allowed for cross ties.
- .5 No joints are allowed in posts.
- .6 Joints in longitudinals must comply with detail on plan. Joints must be scattered from one row to another and from wall to another.
- .7 Pre-manufactured cribs must be at least 3 units long.
- .8 Cribworks must be attached over mean tide level with timbers that cross joints.

- .9 Ream holes in a way that bolts heads do not exceed on mooring side and on sides where another crib is found.
- .10 Each longitudinal and cross ties must be attached to superior and inferior timbers with drift pins.
- .11 Each longitudinal and cross ties must be attached to posts with mechanical bolts.
- .12 Post: the post must be installed in one piece, from the bottom of the crib to the top and their lengths should be adjusted once the cribs are built to their final level.
- .13 The posts must be covered with a membrane piece folded 10mm on sides.

### **3.4 INSTALLATION**

- .1 The Contractor shall notify the Departmental Representative fifteen (15) days before the expected date of immersing the cribs and they will not be immersed unless the Departmental Representative gives a written approval.
- .2 Contractor must provide with his installation method. For cribwork which floor elevation varies, no void must be present under cribwork after installation.
- .3 If some cribs are not aligned after immersion, the Contractor shall remove ballast stone at his own expense until the cribs can come afloat, and he will put them in the right place.
- .4 These cribs will be completely filled right to the lower limit of the joists with ballast stone.
- .5 Install the joists with their camber facing upward.
- .6 Carefully choose the structural elements that will be left exposed. Install the sawn lumber elements so as to disguise classification markings and deterioration, or remove by sanding the marks and traces of these exposed surfaces.
- .7 The construction and final assembly of the cribs as shown in the plans will continue once the cribs are placed in their final positions.
- .8 No permanent marks will be accepted or tolerated on the sections of the structure left exposed above level -2.0m (tidal level).
- .9 Assemble, anchor, attach, tie and brace the elements to make them strong and solid enough.

### **3.5 HANDLING TREATED TIMBER**

- .1 Handle treated material without damaging original treatment.
  - .1 Replace treated timber with major damage to original treatment, as instructed by Departmental Representative.

### **3.6 TREATMENT ON THE SITE**

- .1 This should be done in compliance with CAN/CSA-080 standards.
- .2 Any pressure treated material, requiring cutting to be adjusted, should be coated with three (3) layers of preservative while it is still dry, as required by CAN/CSA-080 standards. The process will be completed by brushing to force the penetration of the

product. All holes made in the timber after the pressure treatment, should also be treated this way.

- .3 Discard any chemical deposits, treated pieces of wood to which a finishing product will be applied.

### **3.7 TOLERANCES**

- .1 The accepted tolerance, as far as the overall dimensions of a crib are concerned, shall be 50 mm.
- .2 The allowed deviation from the specified location is at most 50 mm.
- .3 The exterior frontage of all wooden cribs must be aligned to one and the same plan. The difference between one side of a crib in relation to the adjacent side of the other crib shall not exceed 15 mm.
- .4 The vertical alignment of the exterior frontage of the cribs shall not exceed 5 mm by 1000 mm.
- .5 The differential between the two verticals of a crib and the next one shall not exceed 15mm.

### **3.8 CLEANING**

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

**END OF SECTION**

**Part 1 Execution**

**1.1 PREPARATION**

- .1 Haul roads: construct and maintain haul roads.
- .2 If required, install traffic lights on floating equipment in accordance with international regulations, and maintain on board a radio operator system.
- .3 Install and keep in good state buoys, direction signs, bench marks and traffic lights used to delimit work site.
- .4 Stake and maintain the work based on the proper reference and control points provided by the Departmental Representative. The Contractor shall be responsible for the accuracy of the work in relation to proper reference points, control points and baselines. Obtain written permission from the Departmental Representative before establishing reference points or placing markers on private property and pay all rental fees arising from this practice. If necessary, repair any damage to private property to the satisfaction of the Departmental Representative and pay all costs arising from this work. Provide all additional control points (over and above those indicated) necessary for the proper execution of operations. Throughout the project, ensure that all control points remain in good condition.
- .5 If necessary, install and maintain in good condition the landmarks used to locate and define the boundaries of designated work areas. The benchmarks used must be appropriate to control work and bathymetric survey operations. Provide the labour and equipment needed for the construction of these benchmarks. Remove the benchmarks once the work is completed.

**1.2 QUALITY CONTROL DURING PRODUCTION**

- .1 The Contractor shall carry out Quality Control activities throughout the stone production and placement period as required in this section and in section 01 45 00 – Quality control.
- .2 The weighing of stones, or their re-measurement, shall be carried out to ascertain the calculated weight either when the Departmental Representative questions the size of stones or when the inspector deems it appropriate.
- .3 Drop tests shall be carried out when the Departmental Representative questions the quality or integrity of stones or when the inspector deems it appropriate. Drop tests shall be carried out as follows:
  - .1 Visual inspection of the stone on all sides; marking/recording of all existing cracks;
  - .2 Lift the stone to 3 m and drop it onto a rigid surface (bedrock or stone of similar size);
  - .3 Visual inspection of the stone on all sides to identify existing and/or developing cracks;
  - .4 Repeat at least three times as directed by the Departmental Representative;
  - .5 The stone is acceptable for the intended purpose if existing cracks have not open and no new cracks have developed.



- .4 The Contractor is notified that adverse weather conditions (rain, snow, ice, frost and mud) may hide or conceal defects that would otherwise have been identified. Winter conditions may postpone the required inspection of stones until the next Spring. Stones shall not be shipped to the worksite before their inspection.
- .5 Except where gradation tolerances allow it, any broken or cracked stone, stones that do not meet gradation standards and stones that are not correctly placed in the structure shall be removed and replaced with satisfactory stones. This corrective measure is at Contractor's expense. Rejected materials shall be removed from the worksite without delay. Such materials are excluded from measurement and payment.

### **1.3 TRANSPORT AND TEMPORARY STORAGE**

- .1 The Contractor shall take charge of the transportation and storage of the stones and ensure that stockpiles are not contaminated with dirt or other substances; he shall also inhibit size segregation of stockpiled material.
- .2 The Contractor shall implement measures to prevent introduction of invasive alien species in accordance with Section 01 35 43 – Environmental Procedures
- .3 The storage of stones after shipment from the quarry and before permanent placement into the structure shall be submitted to the Departmental Representative for approval.
- .4 Underwater storage of stones is not authorized.

### **1.4 MEASUREMENT OF STONE**

- .1 All stone materials shall be measured for payment by metric ton unit (1000 kilograms), for material acceptably placed in the work according to certified scale tickets as follows and Section 01 11 11 – Summary of Works:
  - .1 The Contractor shall proceed to the installation and the certification of an electronic weigh scale at the barge leading site(s) before shipping the stones. Weigh scale shall be of register type and have a sufficient size and capacity to weigh the stone and their means of transportation. The size of weight scale shall allow the receiving of all the wheels of the means of transportation used by the Contractor or the subcontractor.
  - .2 The Contractor shall supply each day to the Departmental Representative scale ticket copies for all stones delivered on site, separated by category.

### **1.5 TERMINOLOGY**

- .1 In the description of the stone construction, one must refer to the survey control line (CL) and the neat lines. The following definitions shall apply to those items:
  - .1 Survey control line (CL) – Line shown on the contract drawings to which all breakwater surveys shall be referenced;
  - .2 Neat lines – Solid lines shown on the contact drawings which depict the limits of the various types of stone materials. Tolerances for the placement of the stones described in this section are perpendicular to these neat lines.
  - .3 The word “ton” (t) refers to the metric ton (1 m.t. = 1000 kg).

## **1.6 RUBBLE MOUND**

- .1 The Contractor is free to choose the construction process. However, he shall be held responsible for any damage caused during construction and shall make good the work at his own expense and to the Departmental Representative's satisfaction. It would be preferable for the Contractor to place armour stone as work progresses.
- .2 The Contractor shall use suitable equipment to place the stones in the correct location and on the grades and slopes shown on drawings. He shall replace any badly placed stones at his own expense.
- .3 Before placing the stone, ask Departmental Representative to check alignments.
- .4 Discharge of armour stone will not be allowed. Place each armour material, stone by stone, starting from the bottom of slope and so that stone is stable and in contact with all adjacent stones.

## **1.7 CORE STONE**

- .1 Place core material to lines, grades and dimensions as indicated. Use dredged material, crushed concrete or quarry-run as indicated on drawings.
- .2 Use granular material recovered from demolition, recovered stone or quarry-run, as indicated on drawings.

## **1.8 ARMOUR AND FILTER STONE**

- .1 Place armour stones and filter stones to lines, grades and dimensions as indicated.
- .2 Place armour stone in courses to total layer thickness as indicated on drawings.
- .3 Place each stone or dolosse in stable position.
- .4 Place stone to obtain an optimal stability and criss-cross action.

## **1.9 DEFORMATION**

- .1 In case of deformation of any part of the work during construction or after construction but before acceptance, the Contractor shall remove the displaced materials and rebuild this portion of the structure using either new materials or the displaced materials if deemed appropriate.
- .2 Stone placement prior to the installation of the outer protection shall be at Contractor's own risk.

## **1.10 TOLERANCES**

- .1 Surfaces obtained shall not deviate from the lines and grades indicated on the contract drawings in a range of plus or minus the tolerances indicated below. Tolerances are measured perpendicularly to the indicated neat lines.
- .2 Extreme limits of the tolerances given below shall not be continuous in any given direction over five (5) times the average dimension of a stone and/or over more than ten square metres of structure surface area.

- .3 Any section of a stone course built to the upper tolerance limit shall not be in the immediate vicinity of a section built to the lower limit and vice-versa. In other words, transitions between tolerance limits shall be smooth.

MATERIAL	ABOVE CHART DATUM	BELOW CHART DATUM
Armour stone	40 cm	50 cm
Filter stone	25 cm	30 cm
Quarry-run	20 cm	30 cm

- .4 In addition to the above-indicated perpendicular tolerances with reference to the slope, the horizontal position of every break in grade of finished stone courses shall be less than 60 cm to the indications on drawings. The variation shall not be systematic in one way or the other. Lines, arcs and curves lines shall be continuous and smooth, without visible deflection, bends or kinks.
- .5 The above tolerances aim at ensuring that the work is constructed to the required heights, slopes and levels. Placed material that would not meet these requirements shall be removed or reworked as directed by the Departmental Representative.

### **1.11 CIRCULATION ON THE BREAKWATER**

- .1 **Circulation on stone protection is accepted.**

### **1.12 DEBRIS**

- .1 Unless otherwise indicated by the Departmental Representative, all the timbers, the unsatisfactory materials and the debris within the construction zone shall be removed and become the Contractor's property. All the materials shall be disposed of as required in sections 01 35 43 – Environmental Protection and 01 14 00 – Work restrictions.

### **1.13 TURBIDITY CONTROL**

- .1 The Contractor shall control stone placement in such way to minimize water turbidity. Contractor operations shall comply with the requirements of Sections 01 35 43 Environmental Protection and 01 14 00 – Work restrictions.

**END OF SECTION**