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Canada



Ports pour Petits Bateaux
Small Craft Harbours

HARRINGTON HARBOUR HAULING SLIP REPAIR

PROJECT N° F3731-220158

SPECIFICATION FOR TENDER

MARCH 2023

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END OF SECTION

General

1.1 WORK LOCATION

- .1 Work will take place at hauling slip in Harrington Harbour village

1.2 WORK DESCRIPTION

- .1 The works covered by this contract include :
 - .1 Removal and disposal of a part of wood decking shown on plans;
 - .2 Removal and disposal of timber embedded in concrete in works area;
 - .3 Unsound concrete demolition and surface preparation;
 - .4 Installation of anchors; rebars and wire mesh and pouring of new concrete.
 - .5 Repair of hauling slip posts and installation of new bracing cables.

1.3 EXECUTION OF CONTRACT

- .1 Preparatory works must begin after reception of Notice of acceptance of offer .
- .2 Works onsite can begin in May 2023.
- .3 Provide with documents to submit as stated in actual specification;

1.4 WORK SEQUENCE

- .1 Construct Work in stages, so as to respect the proposed schedule.
- .2 Contractor must schedule works to allow access to southern part of hauling slip.
- .3 Maintain fire access/control. Equipment to prevent fires shall be provided.

1.5 SITE INSPECTION

- .1 Before submitting bid, Contractor shall be responsible to get all necessary information regarding nature and scope of the contract, as well as all the conditions that may affect the execution of the contract.
- .2 By bidding for present contract, Contractor confirms their knowledge of the nature and location of works, general and local conditions, especially weather or climatic conditions, wave action, tide levels, specific physical conditions at the contract site and any other situation that may affect the execution of the contract and the value of the work. Consider the distance between TC wharf and work site and that there is no road on island. Regarding that matter, prefer a mobilization directly onsite with floating equipment.
- .3 Contractor shall plan ahead for works in a way to properly protect structures to withstand wave actions.

1.6 CONTRACTOR USE OF PREMISES

- .1 Contractor has access to work site until substantial completion of works.
- .2 Works area is shown on plan. If Contractor wishes to use other lot, he must reach an agreement with the concerned owners and pay for it. A copy of the agreement shall be sent to the Departmental Representative.
- .3 The use of the site is restricted to the areas needed for the execution of the contract and access routes.
- .4 The use of the premises should follow the guidelines of the Departmental Representative in such a way that works do not interfere with users activities. The Contractor shall be responsible for the safety of operations with regard to users. See section 01 56 00 - *Temporary access and protection works* for guidelines.
- .5 Contractor must coordinates with Fishermen's Association and local authorities to ensure areas available for contractor and work area remain accessible.

1.7 EXISTING UTILITY SERVICES

- .1 Contractor must be self sufficient in regard with water and electricity supply. 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, give Departmental Representative 48 hour 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. Connections must be executed by a certified electrician.
- .3 Provide alternative routes for users.
- .4 Establish location and extent of service lines in area of work before starting Work. Notify Departmental Representative of findings.
- .5 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .6 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction and keep track.
- .7 Record locations of maintained, re-routed and abandoned service lines.
- .8 Construct barriers in accordance with Section 01 56 00 - *Temporary Barriers and Enclosures*.

1.8 SITE STAKING

- .1 Fully stake out the site and ensure its complete implementation depending on the indicated location, lines and levels.

- .2 Before work begins, the Contractor shall verify all measurements on the site and notify the Departmental Representative of any errors or mismatches.

1.9 REQUIRED DOCUMENTS

- .1 Maintain at job site, one copy each document as follows:
 - .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

1.1 RELATED REQUIREMENTS

- .1 Section 01 32 16.07 – Construction progress schedule – Bar (Gantt chart)
- .2 Section 01 56 00 – Temporary barriers and enclosures

1.2 ACCESS TO WORK AREAS

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

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 existing services to building and provide for personnel and vehicle access.
- .3 Where security is reduced by work provide temporary means to maintain security.
- .4 Once the contract is completed, the existing structures that were not concerned by the work should be in the same condition, if not better than the condition it had before the work started.
- .5 Closures: protect work temporarily until permanent enclosures are completed.

1.4 SPECIAL REQUIREMENTS

- .1 Submit schedule in accordance with Section 01 32 16.07 - Construction Progress Schedule - Bar (GANTT) Chart.
- .2 Ensure Contractor's personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .3 Keep within limits of work and access path.
- .4 Acces for Contractor vehicles at site is limited to areas indicated on plan.
- .5 Deliver materials outside of peak traffic hours, unless otherwise approved by Departmental Representative.

1.5 INTERFERENCES ON NAVIGATION

- .1 Place and keep functional buoys and traffic lights throughout the duration of the contract.
- .2 The Contractor must, at his own expense, provide, install, and maintain all the buoys or marks required to effectively carry out works. If, by chance or by accident, one or more buoys/marks got sunk or went adrift, they would be bailed out and/or recovered at the expense of the Contractor to the satisfaction of the Departmental Representative.

1.6 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions. Smoking is not permitted.

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 MEASUREMENT METHOD

- .1 The Contractor shall provide, within two (2) 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.
- .2 The Contractor shall, within two (2) days after receiving an acceptance notice for the contract, provide a list of hourly rates for his staff.
- .3 The lump sum price and unit prices will include, but not limited to, leasing, equipment installation, equipment, tools, labor, 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.
- .4 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.
- .5 Take good note of the material list provided by DFO for actual project, following the bid form.
- .6 The method used to measure labor, tools or materials for the contract will be as follows:
 - .1 Lump sum works: such jobs will be appraised as a global unit. Contractor shall provide with his bid following actual articles breakdown. Canada could ask to bidding contractors a breakdown of lump sum item in a 48 hours notice following a written notification. Non compliance could lead to bidding refusal. Details for each item shall be provided by contractor, including : supply, labor, shipping, handling, administrative fees and every other item in description.
 - .2 Item 1 includes all lump sum item and is broken down as following:
 - .1 **Item 1.1 - Mobilization and demobilization**
 - .1 This item will be measured as a global unit and will include all costs related to the shipping and handling of all equipment and construction of facilities.
 - .2 This item will be paid following a 50% proportion at the beginning of the contract and 50% after premises have been returned to pre-work state and the final cleaning. If some equipment are to be demobilized before the end of the contract, a justified payment may be done upon approval from the Departmental Representative.
 - .2 **Item 1.2 - Site organization**
 - .1 This item will be measured as a global unit and will include, but not be limited to, the following:

- .1 Construction bond and administrative charges;
 - .2 Investigation, planning, management and supervision;
 - .3 Permits and request for authorization (municipal, provincial and federal);
 - .4 Management of general waste that is not included in other items;
 - .5 Connection and disconnection of temporary services (electricity, water, etc.);
 - .6 Bills for temporary public services (electricity, telephone, Internet, water, etc.);
 - .7 Supply and construction of temporary fences and dismantling them around the different areas (construction site, assembly, storage, etc.);
 - .8 Temporary installations at construction sites;
 - .9 Tidiness and snow removal at the construction site and final cleaning;
 - .10 Temporary works construction and restoration of site;
 - .11 All fixed costs and various items under section 01 of the specifications. It also includes works indicated in the plans and specifications for which payment was not designated in another measured item.
- .2 This item will be paid in proportion of completed work, following bid form costs or upon submission of supporting documents.
- .3 Item 1.3 – Removal of wooden decking and timbers.
- .1 This item will be measured as a global unit and will include, but not be limited to, the following:
 - .1 Removal and disposal of decking. Removal and disposal of creosoted timbers under decking and around concrete posts to replace. Handling and disposal in an authorised site.
- .4 Item 1.4 – Repair of hauling slip sides with new concrete.
- .1 This item will be paid following a global unit and will include removal of loose concrete, pressure washing of concrete and surface preparation of concrete according to manufacturer; supply and installation of formworks, anchors, new rebars and wire mesh. Item also includes supply and pouring of new concrete; cure and protection of concrete. Ensure coordination with tides to reduce works exposition with sea water.

.5 Item 1.5 – Construction of new wood decking of hauling slip.

- .1 This item will be paid following a global unit and will include supply and installation wood, hardware, accessories; shims etc. It also includes supply and installation of plastic timber and leveling with grout in grooves and all other related works.

.6 Item 1.6 – Construction of new concrete posts.

- .1 This item will be paid following a global unit and will include demolition of posts shown on plan, disposal of demolition material; supply and installation of formworks, anchors, new rebars. Item also includes supply and pouring of new concrete; cure and concrete protection. Cable bracing and eye bolts embedded in bed rock are included in actual item.

.7 Item 1.7 – Construction of new timber posts.

- .1 This item will be paid following a global unit and will include supply and installation of timber posts to be cut onsite; base plates; grout levelling; fabricated metal brackets; bracing and all related work to complete this item.

- .3 Unit price works: The quantities indicated in the price list are estimated quantities and they can only be increased after a written authorization from the Departmental Representative. No payment shall be made for any additional quantities if the Contractor does not receive prior written authorisation from the Department. Such work is subjected to a unit price agreement and includes, but is not limited to:

.1 Item 2.1– Demolition of unsound concrete on hauling slip deck.

- .1 This item will be measured by the square meter and will include, saw cut, demolition of concrete around area to repair and disposal; cleaning and surface preparation prior to pour new concrete, which means to obtain a rough profile to ensure good bond.

- .2 Quantity on bid form are approximate and could vary, depending on damages found onsite following decking removal. An inspection with Departmental representative will be conducted

.2 Item 2.2– Repair of concrete on hauling slip deck

- 1 This item will be measured by the square meter and include supply and installation of anchors, new rebars and wire mesh ; support and protection of existing rebars; formworks; supply and pouring of new concrete; cure and protection of concrete; grinding; saw cuts etc. Ensure coordination with tides to reduce works exposition with sea water.
- 2 Quantity on bid form are approximate and could vary, depending on damages found onsite following decking removal. An inspection with Departmental representative will be conducted.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 01 32 16.07 – Construction progress schedule – Bar (Gantt chart)
- .2 Section 01 35 29.06 – Health and safety requirements
- .3 Section 01 51 00 – Temporary utilities
- .4 Section 01 52 00 – Construction facilities
- .5 Section 01 56 00 – Temporary barriers and enclosures

1.2 ADMINISTRATIVE

- .1 Schedule and administer project meetings throughout the progress of the work according to schedule or at the call of Departmental Representative.
- .2 Contractor provides physical space and make arrangements for meetings.
- .3 Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.
- .4 The Departmental Representative will:
 - .1 Prepare agenda for meetings and send to participants and interested parties, at least one (1) day prior to the meeting.
 - .2 Chair project meetings.
 - .3 Write down minutes of meetings. Indicate all important questions and decisions therein. Specify the actions taken by the different parties.
 - .4 Distribute the minutes of meetings to members, members absent from meetings, within five (5) days after the meeting.

1.3 PRECONSTRUCTION MEETING

- .1 Within 15 days after notice of acceptance of offer, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2 Departmental Representative, Contractor, major Subcontractors, field inspectors and supervisors will be in attendance.
- .3 Establish time and location of meeting and notify parties concerned minimum five (5) days before meeting.
- .4 Agenda to include:
 - .1 Appointment of official representative of participants in the Work.
 - .2 Schedule of Work: in accordance with Section Section 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart.
 - .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 01 51 00 – Temporary Utilities; 01 52 00 - Construction Facilities and 01 56 00 – Temporary Barrier and Enclosure.
- .5 Delivery schedule of equipment.
- .6 Site security in accordance with Section 01 35 29.06 – Health and Safety Requirements and 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 Monthly progress claims, administrative procedures, photographs, hold backs.
- .13 Appointment of inspection and testing agencies or firms.
- .14 Site inspection, with a report on any damages.

1.4 PROGRESS MEETINGS

- .1 The Departmental Representative will establish, with the collaboration of the Contractor, a schedule for meetings to be held every three (3) weeks in the course of work and two (2) weeks before to the completion of the latter.
- .2 The schedule for meetings can be modified depending on the progress of work and needs, with the consent of the various parties. A copy of modification to schedule shall be handed to Department representative every update.
- .3 Contractor, major Subcontractors involved in Work and Departmental Representative are to be in attendance.
- .4 Agenda to include the following:
 - .1 Review, approval of minutes of previous meeting.
 - .2 Review of Work progress since previous meeting.
 - .3 Shop drawings and product samples.
 - .4 Field observations, problems, conflicts.
 - .5 Problems which impede construction schedule.
 - .6 Review of off-site fabrication delivery schedules.
 - .7 Corrective measures and procedures to regain projected schedule.
 - .8 Revision to construction schedule.
 - .9 Progress schedule, during succeeding work period.
 - .10 Review submittal schedules: expedite as required.
 - .11 Maintenance of quality standards.
 - .12 Review proposed changes for affect on construction schedule and on completion date.
 - .13 Other business.

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 DEFINITIONS

- .1 Activity: element of Work performed during course of Project. Activity normally has expected duration, and expected cost and expected resource requirements. 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: According to municipality regulation.
- .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 Critical path: this is a sequence of activities that determines the duration of the project. The critical path is usually the longest path between the beginning and end of the project.
 - .1 The critical path is usually the one for which all activities have a margin lower than or equal to a certain value, often set to zero.

1.2 REQUIREMENTS

- .1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
- .3 Limit activity durations to maximum of approximately [10] working days, to allow for progress reporting.

- .4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.
- .5 Ensure that the planning process is repeated and that it always leads to a downward treatment, with additional details as planning goes on and decisions made with regard to the options and extra/replacement solutions.
- .6 Ensure the implementation timetable is respected through a close follow-up of the works to ensure integrity of the critical path, comparing the actual progress of individual activities with the expected progress; review the progress of incomplete ongoing activities.
- .7 Carry out frequent checks so as to immediately detect the causes of delays and eliminate them.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to Departmental Representative within fifteen (15) working days of Notice of Acceptance of Offer, Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.
- .3 Submit Project Schedule to Departmental Representative within five (5) working days of receipt of acceptance of Master Plan.

1.4 PROJECT MILESTONES

- .1 Project milestones form interim targets for Project Schedule.

1.5 MASTER PLAN

- .1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).
- .2 Departmental Representative will review and return revised schedules within five (5) working days.
- .3 Revise impractical schedule and resubmit within five (5) working days.
- .4 Accepted revised schedule will become Master Plan and be used as baseline for updates.

1.6 PROJECT SCHEDULE

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:
 - .1 Kick off Meeting ;
 - .2 Shop Drawings, Samples;
 - .3 Permits;
 - .4 Mobilization and installation on the site;
 - .5 Removal of existing items;

- .6 Works;
 - .7 Restoration of premises;
 - .8 Demobilization;
 - .9 Rectification of defects
- .3 Clearly identify the detailed implementation schedule, the critical path of the works and ensure strict monitoring so as to respect it.

1.7 PROJECT SCHEDULE REPORTING

- .1 Update Project Schedule once in a week, reflecting activity changes and completions, as well as activities in progress.
- .2 Provide an updated copy of the schedule to the Departmental Representative two (2) days prior to each meeting on the site or at the request of the Departmental Representative.
- .3 Once every month, with each progressive count, provide Departmental Representative with a detailed report which situates progress of work, compares the progress with the baseline schedule and presents current projections, anticipated delays, the impact of these factors and possible mitigating measures.

1.8 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 OTHER REQUIREMENTS

- .1 Section 03 20 00 – Concrete reinforcing
- .2 Section 03 30 00.01 – Cast in place concrete
- .3 Section 03 41 00 – Precast structural concrete
- .4 Section 05 50 00 – Metal fabrication
- .5 Section 35 31 24 – Stones production

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 drawings stamped and signed by professional engineer registered or licensed in Quebec.

- .3 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.
- .4 Allow five (5) days for Departmental Representative's review of each submission.
- .5 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.
- .6 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.
- .7 Accompany submissions with transmittal letter, in two (2) copies, 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
- .8 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.

- .9 After Departmental Representative's review, distribute copies.
- .10 Submit one (1) electronic copy and four (4) prints of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
- .11 Submit one (1) electronic copy 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.
- .12 Submit one (1) electronic copy 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 three (3) years of date of contract award for project.
- .13 Submit one (1) electronic copy 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.
- .14 Submit one (1) electronic copy of manufacturer's instructions for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .15 Submit one (1) electronic copy of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Departmental Representative.
- .16 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .17 Submit one (1) electronic copy of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.
- .18 Delete information not applicable to project.
- .19 Supplement standard information to provide details applicable to project.
- .20 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, electronic copy 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.
- .21 The review of shop drawings by Department representative 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 requirements of construction and Contract Documents.
- .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

1.4 CERTIFICATES AND TRANSCRIPTS

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.
- .2 Submit transcription of insurance immediately after award of Contract.

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 01 33 00 – Submittal procedures

1.2 REFERENCES

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations (L.R.Q. c. S-2.1)
- .2 Province of Quebec, an Act Respecting Occupational Health and Safety (L.R.Q., c.S-2.1 current edition) - Updated 2016.
- .3 Canada Shipping Act, 2001- Collision Regulations (C.R.C., ch.1416).
- .4 Workplace Hazardous Materials Information System (WHMIS)
- .5 CAN/CSA-Z259.10-12 – Full body harnesses
- .6 CAN/CSA-Z460-13 – Control of hazardous energy - Lockout and other methods
- .7 CAN/CGSB-65.7-2007 – Life Jackets
- .8 CAN/CSA-Z275.2 - Occupational safety code for diving operations

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to Departmental Representative the site-specific Health and Safety Plan: Within seven (7) days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Commitment of the management and the workers to the health and the safety.
 - .2 Policy of the company regarding health and safety.
 - .3 Results of site specific safety hazard assessment.
 - .4 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
 - .5 Procedures in case of accidents/incidents.
- .3 Weekly submit Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative.
- .4 Submit to Departmental representative within 24 hours a copy of any inspection report, correction notice or recommendation issued by Federal, Provincial and Territorial health and safety inspectors.
- .5 Submit to Departmental representative within 24 hours an investigation report for any accident or incident.
- .6 Submit WHMIS MSDS - Material Safety Data Sheets if needed. Contractor must also keep one copy of these documents on the construction site.
- .7 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within ten (10) days after receipt of plan.

- Revise plan as appropriate and resubmit plan to Departmental Representative within ten (10) days after receipt of comments from Departmental Representative.
- .8 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
 - .9 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Departmental Representative.
 - .10 Submit to Departmental Representative copies of all training certificates required for the application of the prevention program, in particular (if applicable) for the following:
 - .1 First aid in the workplace and cardiopulmonary resuscitation;
 - .2 Work in confined spaces;
 - .3 Lockout-tagout procedures;
 - .4 Wearing and adjustment of personal protective equipment;
 - .5 Any other training requirement of Regulations or the safety program.
 - .11 Engineer's plans and certificates of compliance: Contractor must submit to the Departmental representative and to the *Commission des normes, de l'équité, de la santé et de la sécurité du travail* (CNESST) a copy signed and sealed by engineer of all plans and certificates of compliance required pursuant to the *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the construction industry) or by any other legislation or regulation or by any other clause in the specifications or in the contract. The Contractor must also submit a certificate of conformity signed by an engineer once the facility for which these plans were prepared has been completed and before a person uses the facility. A copy of these documents must be available on site at all times.
 - .1 Any modification in an equipment or a part of machinery which was not authorized in writing by the manufacturer. A copy of these documents must be available any time on the work site.
 - .12 Submit to Departmental Representative an on-site Emergency Response Plan. The Emergency Response plan must be distributed to all concerned persons as listed in the article « 1.3 Action and Informational Submittals. » The plan must contain :
 - .1 The procedure of evacuation;
 - .2 Identification of the resources (police, fire brigades, ambulances, etc);
 - .3 Identification of the on-site's persons in charge;
 - .4 Identification of the first-aid workers;
 - .5 The training required for the people responsible for his application ;
 - .6 And any other information which would be necessary, considering the characteristics of the working construction site / place.
 - .13 Submit all the documents relative to diving works.

1.4 COMMISSION DES NORMES, DE L'ÉQUITÉ, DE LA SANTÉ ET DE LA SÉCURITÉ DU TRAVAIL DU QUÉBEC (CNESST)

- .1 Comply with the *Loi sur la santé et la sécurité du travail* (L.R.Q., c. S-2.1) (Act Respecting Occupational Health and Safety) and the *Code de sécurité pour les travaux de construction* (S-2.1, r. 4.) (Safety code for the construction industry) in addition to respecting all the requirements of this specification manual.

1.5 FILING OF NOTICE OF CONSTRUCTION SITE OPENING

- .1 Before works begin, submit notice to the competent provincial authorities.
- .2 Notice of site opening: Notice of site opening shall be submitted to the CNESST before work begins. A copy of such notice shall be submitted to Departmental Representative at the same time and another posted in full view on the worksite. At demobilization, a notice of site closing shall be forwarded to CNESST with copy to Departmental Representative.
- .3 The Contractor shall assume the role of being the Primary Contractor in the limits of the construction site and elsewhere where he must execute work within the framework of this project. The Contractor shall recognize the responsibility of being the Principal Contractor of the project and identify himself as such in the notice of the construction site opening he provides to the CNESST.
- .4 Works will take place in zones below:
 - .1 Defined on plans.
- .5 The Contractor shall accept to divide and identify the construction site adequately in order to define time and space at all times throughout the course of the project.

1.6 CERTIFICATION OF COMPLIANCE (CNESST)

- .1 Certification of compliance delivered by CNESST: the certification of compliance (Attestation de conformité) is a document issued by CNESST to confirm that the Contractor is in good standing with CNESST, that is, all amounts owing to CNESST with respect to a given contract have been paid. The document shall be submitted to the Departmental Representative at work completion.

1.7 EVALUATION OF RISKS/DANGERS

- .1 Contractor must proceed to an identification of the dangers relative to each of the tasks carried out on the working construction site / place.
- .2 Plan and organize work so as to eliminate the risk of fall at the source or ensure collective protection, thereby minimizing the use of personal protective equipment. When personal fall protection is required, workers must use a safety harness that complies with CSA standard CAN/CSA Z-259.10 M90. A safety belt must not be used as fall protection.
- .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 (for example, but not limited to: hoisting devices for persons or materials, excavators, concrete pumps, concrete saws) shall be inspected before

delivery to the construction site. Before using any mechanical equipment, the Contractor shall obtain a certificate of compliance signed by a qualified mechanic dated less than a week prior to the arrival of each piece of equipment on the construction site; the certificate shall remain on the construction site and transmitted to the Departmental representative. The Departmental representative can at all times, if he suspects a malfunction or the risk of an accident, order the immediate stop of any piece of equipment and require an inspection by a specialist of his choice.

1.8 MEETINGS

- .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.

1.9 REGULATORY REQUIREMENTS

- .1 Do Work in accordance with Section 01 41 00 - Regulatory Requirements.

1.10 RISK INHERENT TO THE WORK SITE

- .1 In addition to the risks related to the tasks to be carried out, personnel responsible for the execution of the work on the construction site will be exposed to the following risks, inherent to the area where the work will be executed:
 - .1 Works exposed to the variable weather conditions, among which the heat, the cold, the winds, the rain, the snow, etc.
 - .2 Demolition works.
 - .3 Concrete works

1.11 GENERAL REQUIREMENTS

- .1 Before undertaking the work, prepare a site-specific prevention program based on the hazards identified according to the article "HAZARD ASSESSMENT" and the article "WORKSITE CONDITIONS / IMPLEMENTATION" in this section. Apply this program in its totality from the start of the project until demobilization of all personnel from the construction site. The prevention program shall take into consideration the specific characteristics of the project and cover all the work to be executed on the construction site.

The safety program must include at least the following:

- .1 company safety and health policy;
- .2 description of the stages of the work;
- .3 total costs, schedule and projected workforce curves;
- .4 flow chart of safety and health responsibilities;
- .5 physical and material layout of the construction site;
- .6 risk assessment for each stage of the work, including preventive measures and the procedures for applying them;
- .7 identification of the preventive measures relative to the specific risks inherent to the worksite indicated in the article "WORKSITE CONDITIONS / IMPLEMENTATION";

- .8 identification of preventive measures for health and safety of employees and / or public works site as indicated in the article "SPECIFIC REQUIREMENTS FOR THE HEALTH AND SAFETY OF OCCUPANTS AND PUBLIC";
- .9 training requirements;
- .10 procedures in case of accident/injury;
- .11 written commitment from all parties to comply with the safety program;
- .12 construction site inspection checklist based on the preventive measures;
- .13 emergency response plan which shall contain at least the following:
 - .1 construction site evacuation procedures;
 - .2 identification of resources (police, firefighters, ambulance services, etc.);
 - .3 identification of persons in charge of the construction site;
 - .4 identification of the first-aid attendants;
 - .5 communication organizational chart (including the person responsible for the site and the Departmental representative);
 - .6 training required for those responsible for applying the plan;
 - .7 any other information needed, in the light of the construction site's characteristics.

If available the Departmental representative will provide the evacuation procedures to the Contractor who shall then coordinate the construction site procedure with that of the site and submit it to the Departmental representative.

- .2 Departmental representative may respond in writing, where deficiencies or concerns are noted in the prevention program and may request resubmission with correction of deficiencies or concerns.
- .3 In addition to the prevention program, during the course of the work the Contractor shall elaborate and submit to the Departmental representative specific written procedures for any work having a high risk factor of accident (for example: demolition procedures, specific installation procedures, hoisting plan, procedures for entering a confined space, procedures for interrupting electric power, etc.) or at the request of the Departmental representative.
- .4 The Contractor shall plan and organize work so as to eliminate the danger at source or ensure collective protection, thereby minimizing the use of personal protective equipment.
- .5 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.
- .6 All mechanical equipment (for example, but not limited to: hoisting devices for persons or materials, excavators, concrete pumps, concrete saws) shall be inspected before delivery to the construction site. Before using any mechanical equipment, the Contractor shall obtain a certificate of compliance signed by a qualified mechanic dated less than a week prior to the arrival of each piece of equipment on the construction site; the certificate shall remain on the construction site and transmitted to the Departmental representative on demand.

- .7 Ensure all inspections (daily, periodic, annual, etc.) for the hoisting devices for persons or materials required by the current standards are carried out and be able to provide a copy of the inspection certificates to the Departmental representative on demand.
- .8 The Departmental representative can at all times, if he suspects a malfunction or the risk of an accident, order the immediate stop of any piece of equipment and require an inspection by a specialist of his choice.
- .9 The Departmental representative must be consulted for the location of storing gas cylinders and tanks on the construction site.

1.12 RESPONSIBILITY

- .1 The Contractor must acknowledge and assume all the tasks and obligations which customarily devolve upon a principal Contractor under the terms of the *Loi sur la santé et la sécurité du travail* (L.R.Q., ch. S-2.1) (Act Respecting Occupational Health and Safety) and the *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the construction industry).
- .2 The Contractor must be responsible for health and safety of persons on construction site, safety of property on construction site and for the protection of persons adjacent to construction site and the environment to the extent that they may be affected by conduct of the work.
- .3 No matter the size or location of the construction site, the Contractor must clearly define the limits of the construction site by physical means and respect all specific regulation requirements applicable in this regard. The means chosen to define the limits of the construction site must be submitted to the Departmental representative.
- .4 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific prevention Plan.

1.13 COMPLIANCE REQUIREMENTS

- .1 Comply with the *Loi sur la santé et la sécurité du travail* (L.R.Q., c. S-2.1) (Act Respecting Occupational Health and Safety) and the *Code de sécurité pour les travaux de construction* (S-2.1, r. 4.) (Safety code for the construction industry) in addition to respecting all the requirements of this specification manual.

1.14 UNFORSEEN HAZARDS

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing.

1.15 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Departmental Representative.

1.16 CORRECTION OF NON-COMPLIANCE

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

1.17 WORK STOPPAGE

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

1.18 BLASTING

- .1 Blasting or other use of explosives is not permitted.

1.19 FLOATING MATERIAL

- .1 Conform to the codes and to the municipal, provincial and national regulations concerning the present works
- .2 Mark out the floating equipment by navigation lights according to the Regulation on boarding and to the Notices to the sailors.
 - .1 Maintain a maritime radio set VHF (channel 16) aboard the floating equipment.
- .3 Obtain and submit to the Department Representative a letter of conformity emitted by Transport Canada for the approval of any boat (transport, rescue, inspection or other one) before the beginning of the works
- .4 Floating equipment and dredges installations have to be of sufficient capacity and in good working order, to allow the execution of works in a satisfactory way, according to the calendar and to the specification.
- .5 Organize activities so as to minimize the interference with the sailors and the fishermen using the harbor.
- .6 Maintain any time the access to the neighboring quays
- .7 Supply and place the necessary buoys of warning to indicate the zone of the works.
- .8 Inform the center of operations of the staff of quarter and the administrator of district of the Canadian Coastal Guard (CCG), Oceans and Fisheries Canada, the dredging works progress so that they can produce appropriate sailors notice.

1.20 WORKS NEAR BODIES OF WATER

- .1 For all the works involving risks of drowning, the following requirements must be met:
 - .1 Respect article 2.10.13 of the Safety code for building work.

- .1 Wear a life jacket or a floating device allowing to maintain the head of the user outside the water and to be able to float effortlessly arms and in compliance with the following standard:
 - .1 CAN/CGSB-65.7-2007 – Life jackets
 - .2 Or for some exceptions, be accepted by Transport Canada.
- .2 Or be protected by a safety net or a protective device against the falls.
- .2 For every boat used (transport, rescue, inspection or other one), submit to the Departmental Representative, before the beginning of the works, a letter emitted by Transport Canada giving evidence that the boat is corresponding to the stipulations statutory of the Law on the merchant navy of Canada 2001. If there is more than a year between the date of delivery of this letter and the date of realization of the present works, submit also to the Departmental Representative a confirmation in the effect that the annual report of conformity required by Transport Canada was completed for the current year.
- .3 Establish and transmit to the Department Representative the emergency procedures in which we find the information mentioned below and make sure that all the workers concerned by these procedures received the necessary training(formation) and the information to apply them :
 - .1 A description of completes procedures, including responsibilities of the people whom is allowed the access instead of work; ;
 - .2 The location of the emergency equipment.
- .4 Where the construction site is a wharf, a pier, a quay or any similar structure, a ladder with at least two (2) rungs below the surface of the water shall be installed on the front of the structure every 60 m. This measure applies even if it is a construction project. In this situation, if the owner does not possess the basic installations, a temporary (or portable) ladder can be used and taken off at the end of works. Contractor shall mention in writing to the owner that the site is not in compliance with the Canadian Code of the work, the part II.

1.21 LIFTING MATERIAL

- .1 Lifting devices shall be positioned in such a way that loads are not carried over workers, occupants or the public.
- .2 The Contractor must transmit to department representative a work procedure, signed and sealed by an engineer, including inter alia the position of the crane, a sketch of the trajectory of the transported loads, the length of the mast and a plan of lifting for the handling of loads above occupied buildings. Department Representative can, if judge necessary, impose work of evening and weekend.
- .3 All mobile cranes manufactured after January 1st 1980 must be equipped with a safety device against overload.
- .4 All mobile cranes with cables manufactured after January 1st 1970, except if they are used for other end than lifting loads, must be provided with a safety device against two-

- blocking. Regarding mobile cranes with cables manufactured before January 1st 1970, they will have to be equipped with the device at the latest on December 31st 2006.
- .5 The Contractor shall provide the Department Representative with a mechanical service inspection certificate for each lifting device. Inspections must be carried out just prior to the delivery of the equipment to the work site.
 - .6 For all winch installations, the Contractor shall provide the Department Representative with the installation method recommended by the manufacturer. If unavailable, the Contractor shall then provide an installation procedure signed and sealed by an engineer. The installation procedure must take into account load bearing capacity, the amount, weight and location of counterweight and any other detail that may affect the capacity and stability of the device.
 - .7 In addition to the mechanical service inspection certificate, the annual inspection certificate and the crane logbook must be aboard all crane and crane-truck cabs.
 - .8 The entire lifting area shall be closed off to prevent non-authorized people from entering it.
 - .9 The Contractor shall obtain all of the permits at his own expense, in the event the thoroughfare must be temporarily closed off to meet the requirement stipulated in the preceding paragraph or for any other reason pertaining to the safety of workers, occupants or the public.
 - .10 The Contractor shall carefully inspect all of the slings and lifting accessories and make sure that those in poor condition are destroyed or scrapped.
 - .11 Compressed-gas cylinders shall be lifted with a basket specially designed for this purpose.

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 Division 01 – General requirements

1.2 DEFINITION

- .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 and environmental disturbance during construction. The prevention of pollution and damage to environment covers the protection of the soil, water, air, biological and cultural resources; it also includes visual aesthetics, noise, solid, chemical, gas and liquid wastes, radiation energy, radioactive substances and other pollutants.

1.3 REFERENCES

- .1 Fisheries Act (2019)
- .2 Canadian Environmental Protection Act (2019)
- .3 Canadian Navigable water Act, R.S.C. (2019)
- .4 Politic of Soil Protection and Rehabilitation of Contaminated Sites (MELCC) and Environmental analyses sampling guide relating to it.
- .5 Dust control : BNQ 2410-300

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit one (1) soft copy of required descriptive records, following the terms of WHMIS, in accordance with Section 01 35 29.06 - Health and Safety.
- .3 Before commencing construction activities or delivery of materials to site, submit Environmental Protection Plan to Departmental Representative.
- .4 Environmental Protection Plan must include comprehensive overview of known or potential environmental issues to be addressed during construction.
- .5 Address topics at level of detail commensurate with environmental issue and required construction tasks.
- .6 Include in Environmental Protection Plan:
 - .1 Names of persons responsible for ensuring adherence to Environmental Protection Plan.

- .2 Names and qualifications of persons responsible for manifesting hazardous waste to be removed from site.
- .3 Names and qualifications of persons responsible for training site personnel.
- .4 Descriptions of environmental protection personnel training program.
- .5 Drawings indicating locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on site.
- .6 Traffic Control Plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather.
 - .1 Plans to include measures to minimize amount of material transported onto paved public roads by vehicles or runoff.
- .7 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use.
 - .1 Plan to include measures for marking limits of use areas and methods for protection of features to be preserved within authorized work areas.
- .8 Spill Control Plan to include procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.
- .9 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
- .10 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, are contained on project site.
- .11 Contaminant Prevention Plan identifying potentially hazardous substances to be used on job site; intended actions to prevent introduction of such materials into air, water, or ground; and detailing provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.

1.5 EMERGENCY MEASURES AND INCIDENT PREVENTION

- .1 Contractor must ensure that a spill kit is accessible on site for all duration of work to allow for intervention in case of an accidental spill (absorbent, containers etc). Kit must contain enough absorbent rolls to allow for an intervention on all width of waterway or to contain oil products in perimeter of machinery involved by installing a floating barrier.
- .2 Contractor must ensure machinery is in good condition and well maintained, to avoid grease, oil and fuel leaks
- .3 Contractor shall use HF biodegradable oil intended for that specific use for works in or near water.
- .4 Contractor shall identify toxic products spill risk that will be used or stored during works. He shall plan for prevention and safety measures, and an emergency plan in case of spill.
- .5 When fueling machinery, all measures must be taken to avoid accidental spilling (equipment stabilisation before proceeding, availability of a spill kit etc).

- .6 In case of an equipment failure of spill, emergency measures must be applied to control situation and if applicable, failure will be repaired immediately. Area affected by toxic waste must be contained, cleaned and contaminated material must be removed and disposed in an authorized site by a specialized company.
- .7 Event must be immediately reported to Environmental and climate change emergency line at : 1800 283 2333, to Canadian Coast Guard 1800 363 4735 to MELCC 1866 694 5454 and to site supervisor. Numbers shall be displayed onsite. Accidental spills shall be communicated to Department representative in the shortest notice.
- .8 Soil or contaminated material by spill must :
 - .1 Stored and covered with a watertight tarp.
 - .2 Sampled according to *Guide d'échantillonnage à des fins d'analyses environnementales, Cahier 5 : Échantillonnage des sols du CEHQ*
 - .3 Tested in laboratory to detect oil product C10 C50, metals, polyaromatic hydrocarbons (PAHs) and volatile organic compound (VOC).
 - .4 Be managed according to applying regulation and disposed in an authorized site.
- .9 Contaminated water by a spill shall be contained and analysed or managed by a specialized company that will dispose in an MELCC approved facility.

1.6 FIRES

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

1.7 DRAINAGE

- .1 Develop and submit erosion and Sediment Control Plan (ESC) identifying type and location of erosion and sediment controls provided. Plan to include monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.

1.8 DEMOLITION WASTE AND EXCAVATED MATERIAL MANAGEMENT

- .1 Sort materials for reuse/recycling or elimination
- .2 During cribwork demolition, proceed with sorting near demolition area and dispose creosoted timber directly in watertight bin. Do not store timber out of worksite.
- .3 If material is dropped during loading and transport, it must be recovered and surface cleaned.
- .4 All material become Contractor's responsibility and quickly remove from work site a works progress.
- .5 Manage excavation material according soil analysis and according to Guide d'intervention – Protection des sols et rehabilitation des terrains contaminés.
- .6 Demolition material that can not be recovered must be disposed in an authorised site by MELCC.

1.9 WASTE MATERIAL AND HAZARDOUS MATERIAL

- .1 Dispose reusable and non reusable material separately.

- .2 Do not leave any waste material onsite;
- .3 Dispose of all waste material according to applying regulation. Burning, burial, or disposal of waste in water is forbidden.
- .4 It is forbidden to dispose hydrocarbon, paint remover, thinner in water or sewer.
- .5 No hazardous material disposal in water will be tolerated (oil and waste water). Their disposal must be done according to applying regulation in a way that causes no harm to environment;
- .6 Ensure that all waste and residue from treated wood (preservation product, empty containers; saw dust, contaminated soil etc) be disposed according to applying regulation.

1.10 WORK ADJACENT TO WATERWAYS

- .1 Waterways to be kept free of excavated fill, waste material and debris.
- .2 Recover immediately floating debris and take them out of water.
- .3 Carry out vehicle maintenance and cleaning and refuelling at a minimum distance of 30 meters from shore.
- .4 Store equipment more than 30 meters away from water body and do not circulate on marine bottom. In case some of the equipment must be within 30 meters of water body, the Contractor shall submit a protection plan for the operations to the Departmental Representative.
- .5 Store fuel, or other hazardous substance, more than 30 meters away from water body. If temporary oil facilities are used, then storage facilities must be planned in accordance with applicable rules and regulations. Storage systems must be on impervious surfaces. A response kit in case of oil spills must be available on the site. Reduce as much as possible the use of engine brake.
- .6 Avoid storage of material near water to avoid them to be washed away or blown by the wind.
- .7 Install storage area more than 30 meters from ecologically sensible area and more than 3 meters from ditch. Choose a flat area or less than 10% slope.
- .8 In case of unexpected contaminated material management , store material on a water tight tarp and cover with a tarp to avoid leaching in water or blowing by the wind. Prefer impervious surfaces, of limited permeability like clay or compacted ground, pavement or concrete away from surface water.
- .9 For works over HHWLT, use effective method to avoid sediment transport from worksite to aquatic environment and ensure their maintenance (for example silt barrier, berm, sediment trap, catch basin, temporary stabilisation of embankment, water deviation toward vegetation). Measures must remain efficient during temporary closing of work site, and during flood period or heavy rain.

1.11 TRANSPORTATION OF MATERIALS

- .1 Transportation of materials on public roads to the site shall be done according to municipal regulation.

- .2 The Contractor shall ensure the proper functioning of the trucks used. Any truck or other means of transportation that the Departmental Representative considers too noisy shall not be used to transport materials unless it is repaired or improved upon to make it acceptable.
- .3 Reduce use of engine break to a minimum during equipment and material transport.
- .4 The Contractor shall use proper signs and cooperate with the municipality, the Departmental Representative and other competent authorities, so as to minimize the impact of transportation on the lives of residents around where the trucks pass and the project site.
- .5 Use tarpaulin to cover the materials during transportation to reduce emission of fine particles and to avoid exposition to rain and snow.
- .6 Use roads with less residences.
- .7 Regularly clean, or at the request of the Departmental Representative, public roads using a sweeper. Use dust reduction product as needed.
- .8 Respect highway safety roads and applying rules regarding loading limits and speed limits.
- .9 Following works, restore roadway in at least an equivalent state, in best delay.

1.12 PRESERVING AQUATIC LIFE AT THE PROJECT SITE

- .1 It is forbidden to store any demolition waste in water.
- .2 Moreover, floating waste shall recovered from water and stored 30m from water, so it can't be transported by wind.
- .3 Stop works if weather condition are not suitable to avoid spreading of sediment out of work zone.
- .4 Avoid all sudden movement during work in water.
- .5 Use clean, clean stone to make the riprap.
- .6 Design and stabilize temporary structure, if required, in a way that they withstand environmental conditions (for example : tide, waves) that could occur during working periods.
- .7 Do not use fine material for bearing surface of a temporary structure, if applicable.
- .8 Workers shall be instructed to avoid spreading sediment from marine bottom by doing sudden movement or by leveling marine bottom by turning excavator bucket.
- .9 Carry out work gradually and slowly to avoid spreading of sediment, minimize material disturbance et and avoid to cause lifting of material to surface.
- .10 Place rocks 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 sediment
- .11 Ensure that equipment is clean an free of leaks ; invasive species and weed upon arrival onsite and during all works
- .12 For all floating equipment, contractor shall prove they are free of invasive species .
Thereafter :

- .1 Submit a list in writing of all equipment that was cleaned and placed on land just before work begins to Departmental Representative; list to include photos of the hull, storage location and date for launch in the water. Departmental Representative shall be able to verify whether equipment was clean and stored on land prior to start of Work.
- .2 For equipment already launched in water, prove that equipment remained in the immediate region of the Work for at least the twelve (12) months preceding Work, or:
 - .1 Provide written inspection report immediately prior to mobilizing equipment to work site, certifying that all equipment is free of invasive species. Ensure inspection report is produced by a biologist qualified to identify fresh water aquatic fauna. Ensure sampling is performed by divers. Report to include, without being limited to, the following: list of equipment inspected (tugs, barges, etc.), inspection date and location, summary of sampling and identification protocols, list of samples, table of results and certification regarding presence or absence of invasive species. Report also to include photos and be signed by the qualified biologist before submission to the Project Manager with other required contract documents, and before equipment is mobilized to work site.
 - .2 If inspection report confirms presence of invasive species, replace equipment or clean equipment fully at own cost. Include description of cleaning operations in biologist's new inspection report (after cleaning), containing all information previously stipulated.
- .3 Departmental Representative reserves the right to obtain a second opinion at any time.
- .4 If invasive species are observed, suspend work and clean equipment affected at own cost, according to procedure previously stipulated
- .13 Contractor shall limit work area where equipment must remain at all times.
- .14 All granular material use in works shall be clean and free of contamination and coming from known quarries.

1.13 POLLUTION CONTROL

- .1 Comply to municipal regulation for work execution.
- .2 Maintain temporary erosion and pollution control features installed under this Contract.
- .3 Control emissions from equipment and plant in accordance with local authorities' emission requirements.
- .4 Use a work method reducing to a minimum dust emission and oxide and / or exhaust emission. If needed, dust emission control can be done using water mist, containment method and if required, other dust reducing product according to BNQ 2410-300.
- .5 Machinery used will be maintained in good working condition, free of any contaminant and any adjustments will be made before it is brought on site. Ensure that there are no leakages of fuel, oil or grease. The Contractor must send a mechanical inspection certificate to the Departmental Representative on the condition of equipment just before their delivery to the site.
- .6 Avoid cleaning machines close to water.

- .7 If possible, do not leave the engines of machines and trucks running unnecessarily.
- .8 An up-to-date environmental response kit must be in every machine, including even those for subcontractors.

1.14 ACCIDENT AND BREAKAGE

- .1 An intervention plan must be prepared before work beginning and transmitted to all stakeholders.
- .2 In the case of an accidental spill of oil, fuel or other environmental incident, report the matter immediately to the Departmental Representative and the following authorities:
 - .1 Environment Canada, Environmental Emergencies Centre. Tél.: 866-283-2333.
 - .2 Ministry of Environment and the Fight against Climate Change (MELCC).
Tél.: 1-866-694-5454.
 - .3 Canadian Coast Guard, Maritime Pollution. Tél.: 800-363-4735.
 - .4 Site Supervisor.

1.15 NONCOMPLIANCE NOTIFICATION

- .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.
- .3 Take action only after receipt of written approval by Departmental Representative.
- .4 Departmental Representative will issue stop order of work until satisfactory corrective action has been taken.
- .5 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

Part 2 Products

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 for reuse/recycling 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.

END OF SECTION

Part 1 General

1.1 REFERENCES AND CODES

- .1 Meet or exceed requirements of:
 - .1 Contract documents.
 - .2 All the codes and CSA Standards applicable for the present project and all other standards specified in the present specification, such the applicable standards ASTM.

1.2 HAZARDOUS MATERIAL DISCOVERY

- .1 Asbestos: demolition of spray or trowel-applied asbestos is hazardous to health. Stop work immediately when material resembling spray or trowel-applied asbestos is encountered during demolition work. Notify Departmental Representative.
- .2 PCB: Polychlorinated Biphenyl: stop work immediately when material resembling Polychlorinated Biphenyl is encountered during demolition work. Notify Departmental Representative.

1.3 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions and municipal by-laws.

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 INSPECTION

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

1.2 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 Contractor shall 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.

1.3 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.

1.4 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.

1.5 REJECTED WORK

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 If in opinion of Departmental Representative Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by .

1.6 REPORTS

- .1 Submit four (4) copies of inspection and test reports to Departmental Representative.
- .2 Provide copies to subcontractor of work being inspected or tested or 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 and may be authorized as recoverable unless they are asked by the Contractor and/or required by the 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 in locations as specified in specific Section acceptable to 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 requested or required of specification Sections.

1.10 EQUIPMENT AND SYSTEMS

- .1 Submit adjustment and balancing reports for mechanical, electrical [and building equipment] systems.

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 01 52 00 – Construction facilities
- .2 Section 01 56 00 – Temporary barriers and enclosures
- .3 Section 01 74 11 – Cleaning
- .4 Section 01 74 21 – Construction-demolition waste management and disposal

1.2 REFERENCES

- .1 Electricity Canadian electrical code, last edition version

1.3 ACTION AND INFORMATIONAL SUBMITTALS

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

1.4 INSTALLATION AND REMOVAL

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

1.5 TEMPORARY HEATING

- .1 If applicable, provide temporary heating required during construction period, including attendance, maintenance and fuel.
- .2 Construction heaters used on construction site or inside temporary facilities must be vented to outside or be non-flameless type. Solid fuel salamanders are not permitted.
- .3 Provide temporary heat and ventilation in enclosed areas as required to:
 - .1 Facilitate progress of Work.
 - .2 Protect Work and products against dampness and cold.
 - .3 Prevent moisture condensation on surfaces.
 - .4 Provide ambient temperatures and humidity levels for storage, installation and curing of materials.
 - .5 Provide adequate ventilation to meet health regulations for safe working environment.
- .4 Pay costs for maintaining temporary heat.
- .5 Maintain strict supervision of operation of temporary heating equipment to:
 - .1 Conform with applicable codes and standards.
 - .2 Enforce safe practices.
 - .3 Prevent abuse of services.
 - .4 Prevent damage to finishes.
 - .5 Vent direct-fired combustion units to outside.

1.6 TEMPORARY POWER AND LIGHT

- .1 DFO will not provide with electrical power for works purposes. Provide and pay for temporary power during construction for temporary lighting and operating of power tools. Also provide with temporary power supply to users.
- .2 Arrange for connection with appropriate utility company. Pay costs for installation, maintenance and removal.
- .3 Make electrical connections according to the Canadian Code of the electricity.
- .4 Provide and maintain temporary lighting throughout project. Ensure level of illumination on all floors and stairs is not less than 100 lx.
- .5 Electrical power and lighting systems installed under this Contract may be used for construction requirements only with prior approval of Departmental Representative provided that guarantees are not affected. Make good damage to electrical system caused by use under this Contract. Replace lamps which have been used for more than (3) months.

1.7 TEMPORARY COMMUNICATION FACILITIES

- .1 Provide and pay for temporary telephone, fax, data (web access) hook up, lines and equipment necessary for own use and use of Departmental Representative, he has to insure the connecting of these installations the main networks and assume the costs of all these service.

1.8 FIRE PROTECTION

- .1 Provide and maintain temporary fire protection equipment during performance of Work required by governing codes, regulations and bylaws.
- .2 Burning rubbish and construction waste materials is not permitted on site.

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 01 51 00 – Temporary utilities
- .2 Section 01 56 00 – Temporary barriers and enclosures
- .3 Section 01 74 11 – Cleaning
- .4 Section 01 74 21 – Construction-demolition waste management and disposal

1.2 REFERENCES

- .1 Canadian Standards Association (CSA International)
 - .1 CSA-A23.1/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
 - .2 CSA-0121-M1978(R2003), Douglas Fir Plywood.
 - .3 CAN/CSA-S269.2-M1987(R2003), Access Scaffolding for Construction Purposes.
 - .4 CAN/CSA-Z321-96(R2001), Signs and Symbols for the Occupational Environment.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

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

1.4 INSTALLATION AND REMOVAL

- .1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.
- .2 Indicate use of supplemental or other staging area.
- .3 Provide construction facilities in order to execute work expeditiously.
- .4 Remove from site all such work after use.

1.5 SCAFFOLDING

- .1 Scaffolding in accordance with CAN/CSA-S269.2.
- .2 Provide and maintain scaffolding, ramps, ladders, swing staging, platforms, and temporary stairs.

1.6 HOISTING

- .1 Provide, operate and maintain hoists and cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for their use of hoists.
- .2 Hoists and cranes to be operated by qualified operator.

1.7 SITE STORAGE/LOADING

- .1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.
- .2 Do not load or permit to load any part of Work with weight or force that will endanger Work.

1.8 CONSTRUCTION PARKING

- .1 Parking will be permitted on site inside contractor zone.
- .2 Provide and maintain adequate access to project site.
- .3 Clean runways and taxi areas where used by Contractor's equipment.

1.9 SECURITY

- .1 If required, provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays.

1.10 OFFICES

- .1 Provide office heated to 22 degrees C, lighted 750 lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table.
- .2 Provide marked and fully stocked first-aid case in a readily available location.
- .3 Subcontractors to provide their own offices as necessary. Direct location of these offices. The Contractor have to inform them, where they can install there temporary facilities.

1.11 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.

1.12 SANITARY FACILITIES

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

1.13 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 Protect public users from damage to person and property.
- .4 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.

- .5 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.
- .6 Construct access and haul roads necessary.
- .7 Haul roads: constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided.
- .8 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .9 Dust control: adequate to ensure safe operation at all times.
- .10 Location, grade, width, and alignment of construction and hauling roads: subject to approval by Departmental Representative.
- .11 Lighting: to assure full and clear visibility for full width of haul road and work areas during night work operations.
- .12 Provide snow removal during period of Work.
- .13 Remove, upon completion of work, haul roads designated by Departmental Representative.

1.14 CLEAN-UP

- .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.

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 WASTE MANAGEMENT GOALS

- .1 Minimize amount of non-hazardous solid waste generated by project and accomplish maximum source reduction, reuse and recycling of solid waste.
- .2 Protect environment and prevent environmental pollution damage.

1.2 RELATED REQUIREMENTS

- .1 Section 01 74 11 – Cleaning
- .2 Section 02 41 16.01 – Structure demolition – short form
- .3 Section 35 20 23 – Dredging

1.3 REFERENCES

- .1 Definitions:
 - .1 **Construction, Renovation and/or Demolition (CRD) Waste:** Class III solid, non-hazardous waste materials generated during construction, demolition, and/or renovation activities
 - .2 **Inert Fill:** inert waste - exclusively asphalt and concrete.
 - .3 **Separate Condition:** refers to waste sorted into individual types.
 - .4 **Approved/Authorized recycling facility:** waste recycler approved by applicable provincial authority or other users of material for recycling approved by the Departmental Representative.
 - .5 **Class III non-hazardous waste** - construction renovation and demolition waste.
 - .6 **Salvage:** removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.
 - .7 **Recyclable:** ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse.
 - .8 **Recycling:** process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
 - .9 **Recycle:** process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
 - .10 **Reuse:** repeated use of product in same form but not necessarily for same purpose. Reuse includes:
 - .1 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
 - .2 Returning reusable items including pallets or unused products to vendors.
 - .11 **Source Separation:** act of keeping different types of waste materials separate beginning from the point they became waste.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

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

1.5 USE OF SITE AND FACILITIES

- .1 Execute Work with minimal interference and disturbance to normal use of premises.
- .2 Maintain security measures established by facility provide temporary security measures approved by Departmental Representative.
- .3 Provide, on the construction site, enough container to collect, handle and store the anticipated quantities of reusable and recyclable scrap materials.
- .4 On-the-spot sale of collected scrap materials is not allowed, except with written authorization of the Departmental Representative.

1.6 WASTE PROCESSING SITES

- .1 Contractor is responsible to research and locate waste diversion resources and service providers. Salvaged materials are to be transported off site to approved and/or authorized recycling facilities or to users of material for recycling.
- .2 Provide the documents which confirm arrangement of the waste in authorized sites.

1.7 STORAGE, HANDLING AND PROTECTION

- .1 Unless specified otherwise, materials for removal become Contractor's property.
- .2 Protect, stockpile, store and catalogue salvaged items.
- .3 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.
- .4 Protect structural components not removed and salvaged materials from movement or damage.
- .5 Support affected structures. If safety of structure is endangered, cease operations and immediately notify Departmental Representative.
- .6 Provide on-site facilities and containers for collection and storage of reusable and recyclable materials.
- .7 Separate and store materials produced during project in designated areas.
- .8 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated processing facilities.
 - .1 On-site source separation is recommended.
 - .2 Remove co-mingled materials to off site processing facility for separation.
 - .3 Obtain waybills, receipts and/or scale tickets for separated materials removed from site.
 - .4 Materials reused on-site are considered to be diverted from landfill and as such are to be included in all reporting.

1.8 DISPOSAL OF WASTES

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of wastes into waterways, storm, or sanitary sewers.
- .3 Remove materials on-site as Work progresses.

1.9 ARRANGEMENT OF SOILS AND DREDGED SEDIMENTS

- .1 Refer to the section 35 20 23 – Dredging

1.10 SCHEDULING

- .1 Co-ordinate Work with other activities at site to ensure timely and orderly progress of Work.

Part 2 Execution

2.1 GENERAL

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

2.2 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

2.3 CANADIAN GOVERNMENTAL DEPARTMENTS CHIEF RESPONSIBILITY FOR THE ENVIRONMENT

- .1 Government Chief Responsibility for the Environment:

Minister of Sustainable Development, Environment and the Fight against Climate Change			
Québec	Informations center Édifice Marie-Guyart, 29e étage 675, boulevard René-Lévesque Est Québec, Québec G1R 5V7	418 521-3830 1-800-561-1616	418-646-5974
Sainte-Anne-des-Monts	124, 1 ^{re} Avenue Ouest Sainte-Anne-des-Monts, Québec G4V 1C5	418 763-3301	418 763-7810
Rimouski	212, avenue Belzile Rimouski, Québec G5L 3C3	418 727-3511	418 727-3849

HARRINGTON HARBOUR
Hauling slip repair
Project: F3731-220158

Section 01 74 21
CONSTRUCTION/DEMOLITION WASTE
MANAGEMENT AND DISPOSAL
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END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 01 35 43 – Environmental procedures
- .2 Section 01 74 11 – Cleaning
- .3 Section 01 74 21 – Construction-demolition waste management and disposal

1.2 REFERENCES

- .1 Canadian Standards Association (CSA International)
 - .1 CSA S350-M1980 (R2003), Code of Practice for Safety in Demolition of Structures.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Before proceeding with demolition of load bearing walls and other walls and where required by authority having jurisdiction submit for review by Departmental Representative shoring and underpinning drawings prepared by qualified professional engineer registered or licensed in the Province of Quebec in Canada showing proposed method.

1.4 DELIVERY, STORAGE AND HANDLING

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

1.5 SITE CONDITIONS

- .1 Review designated substance report and take precautions to protect environment.
- .2 If a material listed as dangerous is discovered during the execution of the works, stop and take the appropriate precautions and to inform immediately the Departmental Representative.
 - .1 Do not proceed until written instructions have been received from Departmental Representative.
- .3 Notify Departmental Representative and obtain its agreement before disrupting the access to the work or interrupting the services.

Part 2 Products

2.1 EQUIPMENT AND MATERIAL

- .1 Leave equipment and machinery running only while in use, except where extreme temperatures prohibit shutting down.

- .2 Demonstrate that tools and machinery are being used in manner which allows for salvage of materials in best condition possible.

Part 3 Execution

3.1 PREPARATION

- .1 Do Work in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .2 Protection:
 - .1 Prevent movement, settlement, or damage to adjacent structures, utilities and parts of building to remain in place. Provide bracing and shoring required.
 - .2 Keep noise, dust, and inconvenience to occupants to minimum.
 - .3 Protect building systems, services and equipment.
 - .4 Provide temporary dust screens, covers, railings, supports and other protection as required.
- .3 Disconnect and re-route electrical, telephone and communication service lines. Post warning signs on electrical lines and equipment which must remain energized to serve other products during period of demolition.
- .4 Locate and protect utility lines. Do not disrupt active or energized utilities designated to remain undisturbed.

3.2 DEMOLITION SALVAGE AND DISPOSAL

- .1 Dismantle or support temporarily the parts of the existing work the removal of which is necessary to permit new construction.
- .2 Refer to demolition drawings and specifications for items to be salvaged for reuse.
- .3 Protect surrounding and circulation path.
- .4 Load creosoted timbers directly in trucks for disposal after demolition.
- .5 Use saw cut around area to demolish
- .6 Remove items to be reused, store as directed by Departmental Representative, and re-install under appropriate section of specification.
- .7 Dispose of removed materials, to appropriate recycling or reuse facilities except where specified otherwise, in accordance with authority having jurisdiction.

3.3 PARTIAL DEMOLITION OF STRUCTURES

- .1 Refer to the prescriptions and demolition's drawings to identify the elements of the work to be partially or completely demolished and which are the elements to kept

3.4 DISMANTLEMENT

- .1 Refer to the prescriptions and drawings to identify the elements of the work to be dismantled with the aim of their reinstallation or of their return to the ministry.

3.5 STOCKPILING

- .1 Label stockpiles, indicating material type and quantity.
- .2 Designate appropriate security resources/measures to prevent vandalism, damage and theft.
- .3 Locate stockpiled materials convenient for use in new construction. Eliminate double handling wherever possible.
- .4 Stockpile materials designated for alternate disposal in location which facilitates removal from site and examination by potential end markets, and which does not impede disassembly, processing, or hauling procedures.

3.6 REMOVAL FROM SITE

- .1 Transport material designated for alternate disposal to approved facilities receiving organizations and in accordance with applicable regulations. Do not deviate from facilities or receiving organizations without prior written authorization from Departmental Representative.
- .2 Dispose of materials not designated for alternate disposal in accordance with applicable regulations in disposal facilities approved. Do not deviate from disposal facilities without prior written authorization from Departmental Representative.

3.7 CLEANING AND RESTORATION

- .1 Keep site clean and organized throughout demolition procedure.
- .2 Upon completion of project, reinstate areas, parking surfaces, walkways, light standards, affected by Work to condition which existed prior to beginning of Work or match condition of adjacent, undisturbed areas.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 03 20 00 – Concrete reinforcing
- .2 Section 03 30 00.01 – Cast-in-place concrete – short form
- .3 Section 03 41 00 – Precast structural concrete

1.2 REFERENCES

- .1 Canadian Standards Association (CSA International)
 - .1 CSA-A23.1-04/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
 - .2 CSA-O86S1-05, Supplement No. 1 to CAN/CSA-O86-01, Engineering Design in Wood.
 - .3 CSA O121-M1978 (R2013), Douglas Fir Plywood.
 - .4 CSA O151-04, Canadian Softwood Plywood.
 - .5 CSA O153-M1980 (R2008), Poplar Plywood.
 - .6 CSA O437 Series-93 (R2006), Standards for OSB and Waferboard.
 - .7 CSA S269.1-1975 (R2003), Falsework for Construction Purposes.
 - .8 CAN/CSA-S269.3-M92 (R2013), Concrete Formwork, National Standard of Canada

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit shop drawings for formwork and falsework.
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Quebec, Canada.
- .3 Submit - Material Safety Data Sheets in accordance with WHMIS MSDS.
- .4 Co-ordinate submittal requirements and provide submittals required by this section.
- .5 Indicate method and schedule of construction, shoring, stripping and re-shoring procedures, materials, arrangement of joints, special architectural exposed finishes, ties, liners, and locations of temporary embedded parts. Comply with CSA S269.1, for falsework drawings and Comply with CAN/CSA-S269.3 for formwork drawings.
- .6 Indicate formwork design data: permissible rate of concrete placement, and temperature of concrete, in forms.
- .7 Indicate sequence of erection and removal of formwork/falsework as directed by Departmental Representative.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Waste Management and Disposal:

- .1 Separate waste materials and unused 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.

Part 2 Products

2.1 MATERIALS

- .1 Formwork materials:
 - .1 For concrete without special architectural features, use wood and wood product formwork materials to CSA-O121, CAN/CSA-O86, CSA O437 Series and CSA-O153.
 - .2 Rigid insulation board: to CAN/ULC-S701.
- .2 Form ties:
 - .1 For concrete not designated 'Architectural', use removable or snap-off metal ties, fixed or adjustable length, free of devices leaving holes larger than 25 mm diameter in concrete surface.
 - .2 For Architectural concrete, use snap ties complete with plastic cones and light grey concrete plugs.
- .3 Form release agent: non-toxic, biodegradable, low VOC.
- .4 Form stripping agent: colourless mineral oil, non-toxic, biodegradable, low VOC, free of kerosene, with viscosity between 70 and 110s Saybolt Universal 15 to 24 mm²/s at 40 degrees C, flashpoint minimum 150 degrees C, open cup.
- .5 Falsework materials: to CSA-S269.1.

Part 3 Execution

3.1 FABRICATION AND ERECTION

- .1 Verify lines, levels and centres before proceeding with formwork/falsework and ensure dimensions agree with drawings.
- .2 Obtain Departmental Representative's approval for use of earth forms framing openings not indicated on drawings.
- .3 Hand trim sides and bottoms and remove loose earth from earth forms before placing concrete.
- .4 Fabricate and erect falsework in accordance with CSA S269.1.
- .5 Do not place shores and mud sills on frozen ground.
- .6 Provide site drainage to prevent washout of soil supporting mud sills and shores.
- .7 Fabricate and erect formwork in accordance with CAN/CSA-S269.3 to produce finished concrete conforming to shape, dimensions, locations and levels indicated within tolerances required by CSA-A23.1/A23.2.

- .8 Use 25 mm chamfer strips on external corners and/or 25 mm fillets at interior corners, joints, unless specified otherwise.
- .9 Form chases, slots, openings, drips, recesses, expansion and control joints as indicated.
- .10 Construct forms for architectural concrete, and place ties as indicated
 - .1 Joint pattern not necessarily based on using standard size panels or maximum permissible spacing of ties.
- .11 Build in anchors, sleeves, and other inserts required to accommodate Work specified in other sections.
 - .1 Ensure that anchors and inserts will not protrude beyond surfaces designated to receive applied finishes, including painting.
- .12 Clean formwork in accordance with CSA-A23.1/A23.2, before placing concrete.
- .13 Align form joints and make watertight.
- .14 Keep form joints to minimum.

3.2 REMOVAL AND STRAINING

- .1 Leave formwork in place for a minimum of 48 hours after placing concrete, for all concrete elements
- .2 Re-use formwork and falsework subject to requirements of CSA-A23.1/A23.2.
- .3 For precast concrete slab, the Contractor will have to demonstrate that the slab reached a sufficient resistance before circulating on this one, after their installation.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 03 10 00 – Concrete forming and accessories
- .2 Section 03 20 00 – Concrete reinforcing
- .3 Section 03 41 00 – Precast structural concrete

1.2 REFERENCES

- .1 American Concrete Institute (ACI)
 - .1 SP-66-04, ACI Detailing Manual 2004.
- .2 ASTM International
 - .1 ASTM A82/A82M-07, Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
 - .2 ASTM A-123, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
 - .3 ASTM A143/A143M-07, Standard Practice for Safeguarding Against Embrittlement of Hot-Dip Galvanized Structural Steel Products and Procedure for Detecting Embrittlement.
 - .4 ASTM A185/A185M-07, Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
- .3 CSA International
 - .1 CSA-A23.1-09/A23.2-09, Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.
 - .2 CAN/CSA-A23.3-04 (R2010), Design of Concrete Structures.
 - .3 CSA-G30.18-09, Carbon Steel Bars for Concrete Reinforcement.
 - .4 CSA-G40.20/G40.21-04 (R2009), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
 - .5 CSA W186-M1990 (R2007), Welding of Reinforcing Bars in Reinforced Concrete Construction.
- .4 Reinforcing Steel Institute of Canada (RSIC)
 - .1 RSIC-2004, Reinforcing Steel Manual of Standard Practice.

1.3 ACTION/INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prepare reinforcement drawings in accordance with RSIC Manual of Standard Practice
- .3 Shop Drawings
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Quebec of Canada.
 - .1 Indicate placing of reinforcement and:

- .1 Bar bending details.
 - .2 Lists.
 - .3 Quantities of reinforcement.
 - .4 Sizes, spacings, locations of reinforcement and mechanical splices if approved by Departmental Representative, with identifying code marks to permit correct placement without reference to structural drawings.
 - .5 Indicate sizes, spacings and locations of chairs, spacers and hangers. Use steel or plastic chair, concrete block is not allowed.
- .2 Detail lap lengths and bar development lengths to CAN/CSA-A23.3.

1.4 QUALITY ASSURANCE

- .1 Submit in accordance with Section 01 45 00 - Quality Control and as described in PART 2 - SOURCE QUALITY CONTROL.
 - .1 Mill Test Report: upon request, provide Departmental Representative with certified copy of mill test report of reinforcing steel, minimum four (4) weeks prior to beginning reinforcing work.
 - .2 Upon request submit in writing to Departmental Representative proposed source of reinforcement material to be supplied.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Replace defective or damaged materials with new.
- .4 All the reinforcing steel will be delivered free of rust except for that which may have been formed during transport to the site. It will be protected at all times against moisture, grease, dirt, mortar or cement until it is finally used.

Part 2 Products

2.1 MATERIALS

- .1 Substitute different size bars only if permitted in writing by Departmental Representative.
- .2 Reinforcing steel: billet steel, grade 400W, deformed bars to CSA-G30.18, unless indicated otherwise.
- .3 Cold-drawn annealed steel wire ties: to ASTM A82/A82M.
- .4 Deformed steel wire for concrete reinforcement: to ASTM A82/A82M.

- .5 Welded steel wire fabric: to ASTM A185/A185M.
 - .1 Provide in flat sheets only.
- .6 Galvanizing of non-prestressed reinforcement: to CAN/CSA-G164, minimum zinc coating 610 g/m².
 - .1 Protect galvanized reinforcing steel with chromate treatment to prevent reaction with Portland cement paste.
 - .2 If chromate treatment is carried out immediately after galvanizing, soak steel in aqueous solution containing minimum 0.2% by weight sodium dichromate or 0.2% chromic acid.
 - .1 Temperature of solution equal to or greater than 32 degrees and galvanized steels immersed for minimum 20 seconds.
 - .3 If galvanized steels are at ambient temperature, add sulphuric acid as bonding agent at concentration of 0.5% to 1%.
 - .1 In this case, no restriction applies to temperature of solution.
 - .4 Chromate solution sold for this purpose may replace solution described above, provided it is of equivalent effectiveness.
 - .1 Provide product description as described in PART 1 - ACTION AND INFORMATIONAL SUBMITTALS.
- .7 Chairs, bolsters, bar supports, spacers: to CSA-A23.1/A23.2.
- .8 Plain round bars: to CSA-G40.20/G40.21.

2.2 FABRICATION

- .1 Fabricate reinforcing steel in accordance with CSA-A23.1/A23.2, Reinforcing Steel Manual of Standard Practice by the Reinforcing Steel Institute of Canada.
- .2 Obtain Departmental Representative's written approval for locations of reinforcement splices other than those shown on placing drawings.
- .3 Upon approval of Departmental Representative, weld reinforcement in accordance with CSA W186.
- .4 Ship bundles of bar reinforcement, clearly identified in accordance with bar bending details and lists.

2.3 SOURCE QUALITY CONTROL

- .1 Upon request, provide Departmental Representative with certified copy of mill test report of reinforcing steel, showing physical and chemical analysis, minimum four (4) weeks prior to beginning reinforcing work.
- .2 Upon request inform Departmental Representative of proposed source of material to be supplied.

Part 3 Execution

3.1 PREPARATION

- .1 Galvanizing to include chromate treatment.

- .1 Duration of treatment to be 1 hour per 25 mm of bar diameter.
- .2 Conduct bending tests to verify galvanized bar fragility in accordance with ASTM A143/A143M.

3.2 FIELD BENDING

- .1 Do not field bend or field weld reinforcement except where indicated or authorized by Departmental Representative.
- .2 When field bending is authorized, bend without heat, applying slow and steady pressure.
- .3 Replace bars, which develop cracks or splits.

3.3 PLACING REINFORCEMENT

- .1 Place reinforcing steel as indicated on placing drawings in accordance with CSA-A23.1/A23.2.
- .2 Use plain round bars as slip dowels in concrete.
 - .1 Paint portion of dowel intended to move within hardened concrete with one coat of asphalt paint.
 - .2 When paint is dry, apply thick even film of mineral lubricating grease.
- .3 Prior to placing concrete, obtain Departmental Representative's approval of reinforcing material and placement.
- .4 Ensure cover to reinforcement is maintained during concrete pour.
- .5 Welds points on reinforcing bars are prohibited

3.4 FIELD TOUCH-UP

- .1 Touch up damaged and cut ends of epoxy coated or galvanized reinforcing steel with compatible finish to provide continuous coating.

3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse, recycling or elimination in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 03 10 00 – Concrete forming and accessories
- .2 Section 03 20 00 – Concrete reinforcing
- .3 Section 03 41 00 – Precast structural concrete

1.2 REFERENCES

- .1 ASTM International
 - .1 ASTM A185/A185M-07, Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
 - .2 ASTM D260-86(2001), Standard Specification for Boiled Linseed Oil.
 - .3 ASTM D1751-04, Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non extruding and Resilient Bituminous Types).
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-19.24-M90, Multicomponent, Chemical-Curing Sealing Compound.
- .3 CSA International
 - .1 CSA-A23.1/A23.2-2014, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
 - .2 CSA A3000-13, Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
 - .3 CAN/CSA-G30.18-R2009, Billet-Steel Bars for Concrete Reinforcement.

1.3 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-installation Meetings: in accordance with Section 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart, convene pre-installation meeting one (1) week prior to beginning concrete works.
 - .1 Ensure Departmental Representative testing laboratories attend.
 - .2 Verify project requirements.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Shop Drawings:
 - .1 Submit placing drawings prepared in accordance with plans to clearly show size, shape, location and necessary details of reinforcing.
 - .2 Submit drawings showing formwork and falsework design to: CSA A23.1/A23.2.
 - .3 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Quebec, Canada.

- .3 At least four (4) weeks prior to beginning Work, inform Departmental Representative of source of fly ash.
 - .1 Do not change source of fly ash without written approval of Departmental Representative.
- .4 At least four (4) weeks prior to beginning Work, submit to Departmental Representative samples of following materials proposed for use: curing compound, joint filler, waterstops.
- .5 At least four (4) weeks prior to beginning Work, submit to Departmental Representative data sheets of following materials to be used in concrete mix:
 - .1 Supplementary cementing materials
 - .2 Blended hydraulic cement
 - .3 Admixture
 - .4 Fine and coarse aggregate
 - .5 Fly ash
- .6 Provide concrete mix formula results and reports for review by Departmental Representative and do not proceed without written approval when deviations from mix design or parameters are found.
- .7 A notice of delivery for concrete must be sent to Departmental Representative not less than .72 hrs before concrete pouring
- .8 Concrete hauling time: provide for review by Departmental Representative deviations exceeding maximum allowable time of 120 minutes for concrete to be delivered to site of Work and discharged after batching.

1.5 QUALITY ASSURANCE

- .1 Provide to Departmental Representative, four 4 weeks minimum prior to starting concrete work, valid and recognized certificate from plant delivering concrete.
 - .1 Quality Control Plan: provide written report to Departmental Representative verifying compliance that concrete in place meets performance requirements.
 - .2 Sustainability Standards Certification:
 - .1 Construction Waste Management: provide copy of plan.
 - .2 Recycled Content:
 - .1 Provide listing of recycled content products used.
 - .2 When Supplementary Cementing Materials (SCMs) are used, provide evidence to certify reduction in cement from Base Mix to Actual SCMs Mix, as percentage.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Delivery and Acceptance Requirements:
 - .1 Concrete hauling time: deliver to site of Work and discharged within 120 minutes maximum after batching.

- .1 Do not modify maximum time limit without receipt of prior written agreement from Departmental Representative and concrete producer as described in CSA A23.1/A23.2.
- .2 Deviations to be submitted for review by the Departmental Representative.
- .2 Concrete delivery: ensure continuous concrete delivery from plant meets CSA A23.1/A23.2. Ensure that casting is not interrupted to avoid joints.
- .3 Packaging Waste Management: remove for reuse, recycling or elimination in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

Part 2 Products

2.1 DESIGN CRITERIA

- .1 Performance : to CSA A23.1/A23.2, and as described in MIXES of PART 2 - PRODUCTS.

2.2 PERFORMANCE CRITERIA

- .1 Quality Control Plan: ensure concrete supplier meets performance criteria of concrete as established by Departmental Representative and provide verification of compliance as described in PART 1 - QUALITY ASSURANCE.

2.3 MATERIALS

- .1 Cement: to CSA A3001,
- .2 Water: to CSA A23.1/A23.2
- .3 Reinforcing bars: to CAN/CSA-G30.18, Grade 400W.
- .4 Pieces of hardware and sundry equipment: to CSA-A23.1/A23.2.
- .5 Concrete forming: CAN/CSA-S269.3-FM92 and CAN/CSA-A23.4.
- .6 Anchors and supports: to CAN/CSA-G40.21, type 300W, galvanized.
- .7 Galvanizing: Hot-Dip Galvanized, 610 g/m², to ASTM A-123
- .8 Air-entraining admixture : to ASTM C260.
- .9 Admixture
 - .1 Set accelerator are not authorized
 - .2 It's forbidden to use some chloride of calcium or materials which contain it.
 - .3 Super plasticizing, water reducer and retarder: to ASTM C494
- .10 Shim spacer: plastic
- .11 Sealer: boiled linseed oil to ASTM D260
- .12 Welded steel wire fabric: to ASTM A185.
- .13 Premoulded joint filler:
 - .1 Bituminous impregnated fibreboard: to ASTM D1751.

- .14 Joint sealer/filler: grey to CAN/CGSB-19.24, Type 1, Class B.

2.4 MIXES

.1 Concrete

- .1 Performance Method for specifying concrete: to meet Departmental Representative performance criteria to CSA A23.1/A23.2.
 - .1 Ensure concrete supplier meets performance criteria as established below and provide verification of compliance as described in standard 3101, Tome VII from MTQ standards , Concrete normal density, Concrete type V.
 - .2 Provide concrete mix to meet following plastic state requirements:
 - .1 Water / cement ratio: less than 0.45
 - .2 Water: 340-365 kg/m³ of concrete (see tome VII)
 - .3 Aggregate size: 2.5-10 mm maximum.
 - .4 Air content: 5-8%
 - .5 L bar: 230 micrometers.
 - .6 Slump at time and point of discharge: 80mm ± 30mm
 - .3 Provide concrete mix to meet following hard state requirements:
 - .1 Durability and class of exposure: C-1
 - .2 Compressive strength at 28 days age: 35 MPa minimum.
 - .3 Finish: lightly brushed non-slip finish.
 - .4 Permeability to chlorinates ions: 1500 Coulombs
 - .4 Submit a management plan of the quality to assure the quality control of the concrete according to the specified performance requirements.
 - .5 Concrete supplier's certification

Part 3 Execution

3.1 PREPARATION

- .1 Coordinate every sequence of concreting with the test laboratory indicated by the Departmental Representative for testing and sampling during concreting
- .2 Place concrete reinforcing in accordance with Section 03 20 00 - Concrete Reinforcing.
- .3 During concreting operations:
 - .1 Development of cold joints not allowed.
 - .2 Ensure concrete delivery and handling facilitates placing with minimum of rehandling, and without damage to existing structure or Work.
- .4 Protect previous Work from staining.
- .5 Clean and remove stains prior to application of concrete finishes.

3.2 INSTALLATION/APPLICATION

- .1 Do cast-in-place concrete work in accordance with CSA A23.1/A23.2.

- .2 Sleeves and inserts:
 - .1 Cast in sleeves, ties, slots, anchors, reinforcement, frames, conduit, bolts, waterstops, joint fillers and other inserts required to be built-in.
 - .2 Sleeves and openings greater than 100 mm x 100 mm not indicated, must be reviewed by Departmental Representative.
- .3 The Contractor have to plan all the material and the equipment required for concreting during cold weather.

3.3 FINISHES

- .1 Formed surfaces exposed to view: [sack rubbed finish] in accordance with CSA A23.1/A23.2.
- .2 Wharf concrete slab
 - .1 Finishing operations followed by final finishing comprising mechanical floating and wood trowelling to provide lightly brushed non-slip finish.
 - .2 Provide round edges and joint spacings using standard tools.

3.4 CONTROL JOINTS

- .1 Cut or form control joints in slabs on grade at locations indicated, to CSA A23.1/A23.2 and install specified joint sealer/filler. Saw cuts must be done as soon as possible at a maximum distance of 4.5m apart, as per CSA A23.1/A23.2.

3.5 EXPANSION AND ISOLATION JOINTS

- .1 Install premolded joint filler in expansion and isolation joints full depth of slab flush with finished surface to CSA A23.1/A23.2. Dilatation joints are mandatory at a maximum distance of 9 m apart and must be constructed with 800mm slick steel rebar that crosses the joint with one end in a greased tubing as required by A23.1 / 2

3.6 CURING

- .1 Use curing compounds compatible with applied finish on concrete surfaces free of bonding agents and to CSA A23.1/A23.2.
- .2 For concrete slab and walkway repair, water curing is mandatory.

3.7 SEALING APPLICATION

- .1 Apply sealant on non slippery surfaces complying with 3601 standard, VII Volume, ch. 3 – Concrete sealant. Ministère des transports du Québec. .

3.8 SITE TOLERANCES

- .1 Concrete floor slab finishing tolerance to CSA A23.1/A23.2.

3.9 FIELD QUALITY CONTROL

- .1 Concrete testing: to CSA A23.1/A23.2 by testing laboratory designated and paid for by Departmental Representative.

3.10 CLEANING

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
- .2 Use trigger operated spray nozzles for water hoses.
- .3 Designate cleaning area for tools to limit water use and runoff.
- .4 Cleaning of concrete equipment to be done in accordance with Section 01 35 43 Environmental Procedures in designated area.
- .5 Waste Management: separate waste materials for reuse, recycling or elimination in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .1 Divert unused concrete materials from landfill to local quarry or facility after receipt of written approval from Departmental Representative.
 - .2 Provide appropriate area on job site where concrete trucks and be safely washed.
 - .3 Do not dispose of unused admixtures and additive materials into sewer systems, into lakes, streams, onto ground or in other location where it will pose health or environmental hazard.

END OF SECTION