WHARF REPAIRS

FISHERMEN'S WHARF OF BAIE TRINITÉ, QC

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Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 14 00 – Work Restrictions

.2 Section 01 32 18 - Construction Progress Schedules - Bar (Gantt) Charts

1.2 REFERENCES

.1 CCDG - Cahier des charges et devis généraux – Infrastructures routières - Construction et réparation, Gouvernement du Québec.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

.1 This list of work is not necessarily complete and does not relieve the Contractor of his responsibility to carry out any other work, alterations or changes required to complete the work stipulated in this project satisfactorily.

.2 Works on the Baie Trinité Wharf comprise, but are not limited to:

- .1 Welding Works
- .2 Underwater Works
- .3 Installation of temporary facilities required for this project
- .4 Surface preparation work of the steel surfaces of sheet pile.
- .5 Timber fenders removal.
- .6 Concreting of upper section of 50 m of sheet pile.
- .7 Supply and installation of forms for concrete repairs
- .8 Disposal of demolition materials
- .9 General cleaning after work.

1.4 WORK EXTENT

.1 Work included in this project comprises the supply of all materials, labour, tools, equipment, and also protection and transport necessary to execute and finish work accordingly to specifications, in such a manner that the whole property shows uniformity.

.2 Co-ordination and allocation of work among subcontractors is the sole responsibility of the General Contractor, and no reference to subcontractors in these documents shall be construed as binding Canada with respect to any such allocation.

.3 Contractor who has questions on Harbour operation or wants to visit work site shall contact the Harbour Authority of Baie Trinité:

1.5 OWNER OCCUPANCY

.1 Co-operate with Departmental Representative and Harbour Authority in scheduling operations to minimize conflict and to facilitate Owner usage.

.2 Contractor shall consider that activities in Baie-Trinité will be suspended between September 15th and October 9th and that regular activities will restart on October 10th. Access and wharves shall be available and safe at anytime. Out of this period, all access to wharf and water must remain in place and secured at all times.

.3 Repair or replace, as directed by the Departmental Representative, for connection to the existing structure or an adjacent structure or for alignment with them, the parts of the existing structure that have been modified during construction.

.4 Once the work is completed, existing structures must be in the same or better condition than before the work began.

1.6 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING

.1 Execute work with least possible interference or disturbance to occupants, public and normal use of premises. Arrange with Departmental Representative to facilitate execution of work.

1.7 EXISTING SERVICES

.1 Notify Departmental Representative and utility companies of intended interruption of services and obtain required permission.

.2 Where Work involves breaking into or connecting to existing services, Departmental Representative 48 hours notice for necessary interruption of mechanical or electrical service throughout course of work. Minimize duration of interruptions. Carry out work at times as directed by governing authorities with minimum disturbance to tenant operations.

.3 Provide alternative routes for personnel, pedestrian and vehicular traffic.

.4 Establish location and extent of service lines in area of work before starting Work. Notify Departmental Representative of findings.

.5 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.

.6 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.

.7 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

1.8 WORK SEQUENCE

.1 Construct Work in stages, and if possible, as directed by Departmental Representative.

.2 Coordinate Progress Schedule with Departmental Representative.

.3 Required stages:

.1 Work shall begin on notice of acceptance of offer.

.2 No later than one week after notice of acceptance of offer, Contractor shall provide Work Schedule to Departmental Representative for approbation.

.3 Priority shall be applied to completing all works as soon as possible and when the weather allows it. All works shall be completed no later than October 10th, 2016.

.4 During Work, structures shall be safe and functional for fishermen except between September 15th and October 9th.

.5 For more information on schedules, refer to Section 01 32 18 – Construction Progress Schedules – Bar (Gantt) Charts.

.4 Sequence activities to limit exposure of partially constructed work to waves, ice and snow storms. Damages to new structures, partially constructed or approved, prior to substantial completion, due to Contractor or subcontractor operations, shall be repaired by Contractor at no additional cost for Departmental Representative.

1.9 CONTRACTOR USE OF PREMISES

.1 Contractor has unrestricted use of site until substantial performance. On the other hand, Contractor shall share work site access with other users.

.2 Contractor shall respect all restrictions applied to Wharf, i.e. beyond 0+97 m, where vehicle passing is forbidden. Also beyond o+60 m, all vehicle circulating under 3m from wharf face is forbidden.

.3 Contractor shall limit use of premises for work, storage, and access as indicated on drawings. Parking areas may be used by the Contractor prior to a written agreement with the Harbour Authority. Provide a copy of the agreement to the Departmental Representative

.4 Co-ordinate use of premises under direction of Departmental Representative.

.5 If the Contractor wishes to use private land for work or storage space required for operations under this contract, other than those already identified in the plan as reserved for use by the Contractor, the latter shall obtain a written agreement reached between both parties and pay the applicable fees. A copy of this agreement shall be provided to the Departmental Representative.

1.10 MEASUREMENT METHOD

.1 Provision of materials, labour, tools, equipment, protection, transport, administration fees, profits, financing, etc., required to perform the work in this undertaking are included in each item described below, unless otherwise indicated.

.2 Measuring method for items will be:

.1 Item no. 1 Site organization

.1 Item will be measured as a global unit and includes all items listed in division 1, also items that cannot be assigned to another measurement item.

.2 This item shall include all the necessary work and the means to ensure continuity of services for fishers.

.3 Site organization during work will be paid proportionately with monthly progress payments if necessary.

.2 Item No. 2 – Removal of timber fenders.

.1 The item will be measured and paid as a unit item and includes, but is not limited to, demolition of timber fenders where necessary.

.2 The item includes workmanship, material and equipment for removal and disposal creosoted timber fenders, and all necessary works.

.3 Item No. 3 – Repair of Steel sheetpiles

.1 Item divides as follows :

.1 Plating of ladders

.2 Linear plating of sheetpile wall

.2 Item 1 is measured and by unit of ladders included in the project.

.3 Item 2 is measured and paid by m² of linear sheetpile wall repaired.

.4 Unit price includes, but is not limited to machinery, workmanship, equipment and material supply and all necessary works for completion as indicated on drawings. This price includes cleaning of sheetpile, concrete forms, shear connectors, concrete ties rods, and all necessary verification surveys.

.5 Item includes supply and installation of all steel pieces in concrete.

.6 The heating of water and aggregates as well as the measures taken to protect concrete in cold weather will not be measured but considered an integral part of the work.

.7 The cooling of concrete and hot weather protection will not be measured but considered an integral part of the work.

.3 The global lump sum that contractor had to furnish shall be detailed and furnished to Departmental Representative within two (2) weeks after notice of acceptance of offer.

1.11 DOCUMENTS REQUIRED

.1 Maintain at work site, one copy of each document mentioned above:

.1 Contract drawings

.2 Specifications

.3 Addenda

.4 Reviewed shop drawings

.5 List of outstanding shop drawings

.6 Change orders

.7 Other modifications to Contract

.8 Field test reports

.9 Copy of approved work schedule

.10 Health and safety plan and other safety related documents

.11 Other documents as specified

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 NOT USED

.1 Not used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 32 18 - Construction Progress Schedules - Bar (Gantt) Charts

.2 Section 01 35 43 – Environmental Procedures

.3 Section 01 56 00 – Temporary Barriers and Enclosures

1.2 ACCESS AND EGRESS

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

1.3 USE OF SITE AND FACILITIES

.1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated. For more information on Wharf's activities, contact the local Harbour Administration:

.2 Maintain the existing utilities services and provide personnel and vehicles with access to the work site.

.3 Where security is reduced by work provide temporary means to maintain security.

1.4 EXISTING SERVICES

.1 Notify Departmental Representative and utility companies of intended interruption of services and obtain required permission.

.2 If taps on existing networks or connections to these networks are necessary, give the Departmental Representative 48 hours' notice before the scheduled interruption of electrical services or mechanical systems.

.3 Keep the duration of interruptions to a minimum and ensure interruptions occur after the occupants' regular work hours, preferably on weekends.

.4 Provide traffic control and construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

.5 Maintain safe navigation in around wharf.

1.5 SPECIAL REQUIREMENTS

.1 Contractor may begin steel sheet pile consolidation before October 10th 2016. The ideal period for works is between September 15th and October 9th as all activities on wharf will be suspended.

.2 Work shall be completed as described in Section 01 32 18 – Construction Progress Schedules.

.3 Contractor shall comply with environmental limitation mentioned in Section 01 35 43 – Environmental Procedures.

.4 Develop and submit construction progress schedule in accordance with Section 01 32 18 – Construction Progress Schedules.

.5 Ensure that Contractor personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.

.6 Keep within limits of work, and avenues of ingress and egress free of obstacles.

.7 In his construction schedule, the Contractor shall ensure the continuity of operations by other users during the work period.

.8 The Contractor is responsible for obtaining, from harbour authority officials, all relevant information concerning activities in the fishing harbour. Plan and carry out the work so as not to hamper fishing activities or impede access to port facilities.

1.6 NAVIGATION INTERFERENCE

.1 It is of Contractor's responsibility to get from harbour authorities all information necessary to perform his activities in the harbour. Contractor shall plan and execute work in such manner that it will not interfere with usual operations, or limit access to wharf, by land or water.

.2 Contractor is responsible for loss of time, equipment, material or any other cost related to interference with moored vessels, displacements of ships in harbour or other impacts Caused by Contractor's operations.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 03 30 00 – Cast-in-Place concrete

.2 Section 05 50 00 – Metal Fabrications

1.2 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

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

1.3 APPOINTMENT AND PAYMENT

.1 Departmental Representative will appoint and pay for services of testing laboratory except follows:

- .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
- .2 Inspection and testing performed exclusively for Contractor's convenience.
- .3 Testing, adjustment and balancing of conveying systems, mechanical and electrical equipment and systems.
- .4 Mill tests and certificates of compliance.
- .5 Tests specified to be carried out by Contractor under the supervision of Departmental Representative.

.2 Where tests or inspections by designated testing laboratory reveal Work not in accordance with contract requirements, pay costs for additional tests or inspections as required by Departmental Representative to verify acceptability of corrected work.

1.4 CONTRACTOR'S RESPONSIBILITIES

.1 Provide labour, equipment and facilities to:

- .1 Provide access to Work for inspection and testing.
- .2 Facilitate inspections and tests.
- .3 Make good Work disturbed by inspection and test.
- .4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.

.2 Notify Departmental Representative sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.

.3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.

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

Part 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: Monday to Friday, inclusive, will provide 5 day-work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.

.5 Duration: number of work periods (not including holidays or other nonworking periods) required to complete activity or other project element. Usually expressed as workdays or workweeks.

.6 Master Plan: summary-level schedule that identifies major activities and key milestones.

.7 Milestone: significant event in project, usually completion of major deliverable.

.8 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision-making throughout project life cycle.

.9 Project Planning, Monitoring and Control System: overall system operated by Departmental Representative to enable monitoring of project work in relation to established milestones.

1.2 REQUIREMENTS

.1 All works shall be completed no later than October 10th , 2016.

.2 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.

.3 Plan to complete Work in accordance with prescribed milestones and time frame.

.4 Limit activity durations to maximum of approximately 5 working days, to allow for progress reporting.

.5 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Certificate of substantial performance and Final Certificate as defined times of completion are of essence of this contract.

.6 The implementation schedule and bar (Gantt) chart shall reflect the work schedule as per the steps described in item 1.5.

.7 The construction Progress Schedule and the Bar Gantt chart shall take into consideration restrictions to respect during the period of piles installation as described in Section 01 35 43 – Environmental Procedures.

1.3 SUBMITTALS

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

.2 Submit to Departmental Representative within 10 working days of Notice of acceptance of the offer, the Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.

.3 Submit Project Schedule to Departmental Representative within 5 working days of receipt of acceptance of Master Plan.

.4 The Contractor shall be responsible for the information required to set up the work schedule. The Contractor shall submit to the Departmental Representative information concerning the work operations and sequence, the breakdown of the work into activities and the duration of these activities.

.5 Work schedules are submitted subject to approval by the Departmental Representative. The Departmental Representative may require additional schedules or reports to demonstrate timely progress in the work or any other project deadline or indication of unrealistic performance.

.6 Approval of work schedules by the Departmental Representative does not release the Contractor from its obligation to complete the work in accordance with the contract documents. Approval of the submitted schedules by the Departmental Representative shall not make the latter liable for time or cost overruns resulting from delays in the schedule.

.7 The work implementation schedule and monthly schedule updates shall be provided to the Departmental Representative for review with each request for payment as a condition of processing the payment request.

.8 The Departmental Representative and the Contractor shall revise the updated work schedule at each progress meeting. The Contractor shall revise the schedule to incorporate changes made during the progress meetings.

.9 When the deadlines or the completion date are not met, the Contractor shall, at no additional cost to the Departmental Representative, undertake one or more of the following: increase labour, increase working hours or take other actions to eliminate work delays.

1.4 PROJECT MILESTONES

.1 Steps to be identified or considered when planning the work are:

1. Contract award date
2. Fabrication of anodes and electrical components
3. Fabrication and painting works of steel forms
4. Material delivery
5. Worksite mobilization
6. Painting works of pile and sheet pile under wharf
7. Repair of concrete columns of pile wharf
8. Cathodic protection installation
9. Sheet pile consolidation works of pile wharf and unloading wharf
10. Start up

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 5 working days.

.3 Revise impractical schedule and resubmit within 5 working days.

.4 Accepted revised schedule will become Master Plan and be used as baseline for updates.

.5 Contractor shall be responsible for information required to develop the construction schedule. Contractor shall provide Departmental Representative with information regarding work operations, sequence of work, breakdown of the work into activities, and time estimates for the activities.

1.6 PROJECT SCHEDULE

.1 Develop detailed Project Schedule derived from Master Plan.

.2 Ensure that detailed Project Schedule includes as minimum milestone and activity types as follows:

.1 Award
.2 Shop Drawings, Samples
.3 Permits
.4 Mobilization
.5 Material delivery
.6 Painting Work
.7 Concrete columns repair
.8 Cathodic protection installation
.9 Sheet pile consolidation
.10 Demobilization

1.7 PROJECT SCHEDULE REPORTING

.1 Update Project Schedule on weekly basis reflecting activity changes and completions, as well as activities in progress.

.2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

.3 The approval of Project Schedule by the Departmental Representative does not relieve the Contractor of his obligation to achieve works according to specifications. The acceptance of submitted Project Schedule by Departmental Representative will not make him responsible for goings of time or costs resulting from delays.

.4 Both Departmental Representative and Contractor will have to update the Project Schedule at each site meeting. The Contractor will have to modify the Project Schedule in order to include the modifications that are done.

.5 When the limit date or work achievement date will not be respected, the Contractor will, and this without additional fees for Departmental Representative, have to take one or more following actions: increase labour, working time, or take other action in order to eliminate delays.

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

Partie 1 General

1.1 RELATED SECTIONS

.1 Section 01 45 00 - Quality control

1.2 ADMINISTRATIVE

.1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.

.2 Do not proceed with Work affected by submittal until review is complete.

.3 Present shop drawings, product data, samples and mock-ups in SI Metric units.

.4 Where items or information is not produced in SI Metric units converted values are acceptable.

.5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.

.6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.7 Verify field measurements and affected adjacent Work are co-ordinated.

.8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.

.9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.

.10 Keep one reviewed copy of each submission on site.

1.3 SHOP DRAWINGS AND PRODUCT DATA

.1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.

.2 Submit shop drawings bearing stamp and signature of qualified professional engineer registered or licensed in the Province of Québec, Canada.

.3 Coordinate the submission of necessary documents or samples in accordance with work and contract document requirements. Documents or samples submitted individually will not be verified until all related information is available.

.4 Use the bid register and transmittal form. The exact format of bid documents shall be approved by the Departmental Representative and accepted by the Contractor.

.5 Identify potential stakeholders in the project, such as the Contractor, subcontractors and suppliers, as well as all sections of the specifications, shop drawings and details relating thereto.

.6 Leave a space on the documents for the "Document Verification" stamp by the Contractor and Departmental Representative.

.7 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.

.8 Allow 5 days for Departmental Representative's review of each submission.

.9 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.

.10 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.

.11 Accompany submissions with transmittal letter, in duplicate, containing:

- .1 Date
- .2 Project title and number
- .3 Contractor's name and address
- .4 Identification and quantity of each shop drawing, product data and sample
- .5 Other pertinent data

.12 Submissions include:

- .1 Date and revision dates
- .2 Project title and number
- .3 Name and address of:
  - .1 Subcontractor
  - .2 Supplier
  - .3 Manufacturer
- .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
- .5 Details of appropriate portions of Work as applicable:
  - .1 Fabrication.
  - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
  - .3 Setting or erection details.
  - .4 Capacities.
  - .5 Performance characteristics.

.6 Standards.

.7 Operating weight.

.8 Wiring diagrams.

.9 Single line and schematic diagrams.

.10 Relationship to adjacent work.

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

.14 Submit 3 copies of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.

.15 Submit 3 copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.

.16 Delete information not applicable to project.

.17 In addition to routine information, provide any additional details that apply to the work.

.18 Make necessary referrals of contract documents to the appropriate parties.

.19 Submit 3 copies of test reports for requirements requested in specification Sections and as requested by Departmental Representative.

.1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.

.2 Testing must have been within 3 years of date of contract award for project.

.20 Submit three (3) copies of certificates for requirements requested in specification Sections and as requested by Departmental Representative.

.1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.

.2 Certificates must be dated after award of project contract complete with project name.

.21 Supplement standard information to provide details applicable to project.

.22 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

.23 Review of shop drawings is for sole purpose of ascertaining conformance with general concept. This review shall not mean that Departmental Representative approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting all requirements of construction and Contract Documents. Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for

information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of all sub-trades.

1.4 PHOTOGRAPHS SHOWING WORK PROGRESS

.1 The Contractor shall take photographs during construction to show work progress.

.2 The Departmental Representative shall receive a set of all photographs taken. The Contractor shall receive written notice from the photographer stating that the Departmental Representative may use any photographs without restriction for future purposes. A copy of this notice shall be provided to the Departmental Representative and the contracting authority.

.3 Photographs of the work site showing major construction activities shall be taken at least once a week. The date the photographs were taken shall appear on the front of the photographs.

1.5 CERTIFICATES AND TRANSCRIPTS

.1 Immediately after award of Contract, submit Workers' Compensation Board status.

.2 The Contractor shall:

.1 When specified in individual Specification Sections, submit certification by manufacturer to Departmental Representative, in quantities required.

.2 Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

.3 Certificates may be recent or previous test results on material or Product, but must be acceptable to Departmental Representative.

1.6 PRODUCT DATA

.1 1 The Contractor shall:

.1 Submit the number of copies that the Contractor requires, plus two copies to be retained by Departmental Representative.

.2 Mark each copy to identify applicable products model, option, and other data. Supplement manufacturers' standard data to provide information unique to the Project.

Partie 2 Products

2.1 NOT USED

.1 Not Used.

Partie 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Contractor shall manage his operations so that safety and security of the public and of site workers always take precedence over cost and scheduling considerations.

.2 Various aspects of health and safety that DFO must take into account to exercise due diligence in terms of health and safety on Work sites.

1.2 REFERENCES

.1 Canada Labour Code - Part II, Canadian Occupational Safety and Health Regulations.

.2 Canadian Standards Association (CSA)

.3 Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.4 Act Respecting Occupational Health and Safety, R.S.Q. Chapter S-2.1.

.5 Construction Safety Code, S-2.1, r.6.

.6 *Canada Shipping Act* and *Navigable Waters Protection Act*

1.3 SUBMITTALS

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

.2 Submit to Departmental Representative, the CSST and the Association paritaire en santé et sécurité du secteur de la construction (ASP Construction) the site-specific safety program, as outlined in 1.8 at least 10 days prior to start of work. The Contractor must review his program during the course of the project if any change occurs in work methods or site conditions. The Departmental Representative may, after receiving the program or at any time during the project, ask the Contractor to update or modify the program in order to better reflect the reality of the construction site and activities. The Contractor must make the required changes before work begins.

.3 Submit to Departmental Representative the site inspection sheet, duly completed, at the intervals indicated in 1.12.1.

.4 Submit to Departmental Representative within 24 hours a copy of any inspection report, correction notice or recommendation issued by federal or provincial inspectors.

.5 Submit to Departmental Representative within 24 hours an investigation report for any accident involving injury and any incident exposing a potential hazard.

.6 Submit to Departmental Representative all safety data sheets for hazardous material to be used at the site at least three days before they are to be used.

.7 Submit to Departmental Representative copies of all training certificates required to apply the safety program, in particular:

.1 General construction site safety and health courses;

.2 Safety officer attestations;

.3 First aid in the workplace and cardiopulmonary resuscitation;

.4 Wearing and fitting of individual protective gear;

.5 Forklift truck;

.6 Positioning platform;

.7 Any other requirement of Regulations or the safety program.

.8 Medical examinations: Wherever legislation, regulations, directives, specification or a safety program require medical examinations, Contractor must:

.1 Prior to start-up, submit to Departmental Representative certificates of medical examination for all concerned supervisory staff and employees who will be on duty when the site opens.

.2 Thereafter, submit without delay certificates of medical examination for any newly hired concerned personnel as and when they start work at the site.

.9 Emergency plan: The emergency plan, as defined in 1.8.3, shall be submitted to Departmental Representative at the same time as the site-specific safety program.

.10 Notice of site opening: Notice of site opening shall be submitted to the Commission *de la santé et de la sécurité du travail* before work begins . A copy of such notice shall be submitted to Departmental Representative at the same time and another posted in full view at the site. During demobilization, a notice of site closing shall be submitted to the CSST, with copy to Departmental Representative.

.11 Engineer's plans and certificates of compliance : Submit to the CSST and to Departmental Representative a copy signed and sealed by engineer of all plans and certificates of compliance required pursuant to the Construction Safety Code (S-2.1, r. 6), or by any other legislation or regulation or by any other clause in the specifications or in this contract. Copies of these documents must be on hand at the site at all times.

.12 Certificate of compliance delivered by the CSST: The certificate of compliance is a document delivered by the CSST confirming that the contractor is in rule with the CSST, i.e. that he had pay out all the benefits concerning this contract. This document must be delivered to Departmental Representative at the end of the work.

1.4 HAZARDS ASSESSMENT

.1 The contractor must identify all hazards inherent in each task to be carried out at the site.

.2 The contractor must plan and organize work so as to eliminate hazards at source or promote mutual protection so that reliance on individual protective gear can be kept to a minimum. Where individual protection against falling is required, workers shall use safety harness that meets standard Can - CSA- Z-259.10 - 06. Safety belts shall not be used as protection against falling.

.3 Equipment, tools and protective gear which cannot be installed, fitted or used without compromising the health or safety of workers or the public shall be deemed inadequate for the work to be executed.

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

1.5 MEETINGS

.1 Contractor decisional representative must attend any meetings at which site safety and health issues are to be discussed

.2 Set up a site safety committee, and convene meetings in accordance with the Construction Safety Code.

1.6 LEGAL AND REGULATORY REQUIREMENTS

.1 Perform Works in accordance to Section 01 41 00 – General requirements

.2 Comply with all legislation, regulations and standards applicable to the site and its related activities.

.3 Comply with specified standards and regulations to ensure safe operations at site containing hazardous or toxic materials.

.4 Regardless of the publication date shown in the construction safety code, always use the most recent version.

1.7 SITE-SPECIFIC CONDITIONS

.1 In his work planning, Contractor shall not disturb Harbour activities

.2 Workers to be exposed to the following conditions:

- .1 Work near watercourse.
- .2 Work involving risk of drowning.
- .3 Marine work with difference of tide of around 2.5 metres and water depth near 4.5 metres under chart datum.

.3 The weather conditions may be difficult (wind, cold, etc…). Harbour may be exposed to heavy agitation caused by waves and also moving ice floes in winter.

.4 The continuity of various maritime services shall be maintained in a safe manner throughout the duration of the works if applicable.

.5 Until final acceptance, the protection of work for work stability and workers' security during work progress remains under Contractor's responsibility.

1.8 SAFETY AND HEALTH MANAGEMENT

.1 Acknowledge and assume all the tasks and obligations which customarily devolve upon a principal Contractor under the terms of the Act Respecting Occupational Health and Safety (R.S.Q., chapter S-2.1) and the Construction Safety Code (S-2.1, r.6).

.2 Develop a site-specific safety program based on the hazards identified and apply it from the start of project work until close-out is completed. The safety program must take account of all information appearing in 1.7 and must be submitted to all parties concerned, in accordance with the provisions set forth in 1.2. At a minimum, the site-specific safety program must include:

- .1 Company safety and health policy.
- .2 A description of the work, total costs, schedule and projected workforce curve.
- .3 Flow chart of safety and health responsibility.
- .4 The physical and material layout of the site.
- .5 First-aid and first-line treatment standards.
- .6 Identification of site-specific hazards.
- .7 Risk assessment for the tasks to be carried out, including preventive measures and the procedures to apply them.
- .8 Training requirements.
- .9 Procedures in case of accident/injury
- .10 Written commitment from all parties to comply with the prevention program.
- .11 A site inspection schedule based on the preventive measures.

.3 The contractor must draw up an effective emergency plan based on the characteristics and constraints of the site and its surroundings. Submit the emergency plan to all parties concerned, pursuant to the provisions of 1.2.The emergency plan must include:

- .1 Evacuation procedure;
- .2 Identification of resources (police, firefighters, ambulance services, etc.);
- .3 Identification of persons in charge at the site;
- .4 Identification of those with first-aid training;
- .5 Training required for those responsible for applying the plan;
- .6 Any other information needed, in the light of the site characteristics.

.4 For all work involving risk of drowning, conform to following requirements:

- .1 Comply with the Safety Code for the Construction Industry, paragraph 2.10.13.
- .2 Ensure that required life vests are conforming to:
  - .1 CAN/GGSB-65.7-2007, Life Jackets, Inherently Buoyant published by the Canadian General Standards Board (CGSB).
  - .2 Or exceptions to be approved by Transport Canada.
- .3 Obtain and submit to Departmental Representative a letter of compliance issued by Transport Canada for approval of any craft (transportation, rescue, inspection or other) prior to commencement of work

.4 Ensure that a rescue craft is moored, in the water and available for every shift. When craft is accessible by land, it can be used by several work locations provided that distance between each work location and craft is less than 100 metres.

.5 Ensure that craft is equipped with a motor powerful enough to travel upstream.

.6 Ensure that craft has required characteristics to carry individuals likely to participate in a rescue operation.

.7 Ensure that craft is available for personnel at all times in case of emergency.

.8 Ensure that a qualified individual is available to operate rescue equipment. Individual must be qualified to operate recreational craft, depending on length of craft used.

.9 Establish written rescue procedures containing the information below and ensure that all personnel concerned by these procedures have received the necessary training and information to apply them.

.1 Complete description of the procedures, including responsibilities of individuals permitted access to place of work.

.2 Location of rescue equipment.

.10 When place of work is a landing wharf, dock, jetty, pier or other similar structure, install a ladder with at least two rungs below surface of water on front of structure every 60 metres. This measure also applies to construction projects. In this case, a temporary (or portable) ladder can be used and removed at end of work if Owner does not have basic facilities. But we have to notify the owner that site is not in accordance with the Canada Labour Code, Part 2.

1.9 RESPONSIBILITIES

.1 No matter the size of the construction site or how many workers are present at the workplace, designate a competent person to supervise and take responsibility for health and safety. Take all necessary measures to ensure the health and safety of persons and property at or in the immediate vicinity of the site and likely to be affected by any of the work.

.2 Take all necessary measures to ensure application of and compliance with the safety and health requirements of the contract documents, applicable federal and provincial regulations and standards as well as the site-specific safety program, complying without delay with any order or correction notice issued by the Commission de la santé et de la sécurité du travail.

.3 Take all necessary measures to keep the site clean and in good order throughout the course of the work

1.10 COMMUNICATIONS AND POSTING

.1 Make all necessary arrangements to ensure effective communication of safety and health information at the site. As they arrive on site, all workers must be informed of their rights and obligations pertaining to the site specific safety program. The Contractor must insist on their right to refuse to perform work which they feel may threaten their own health, safety or physical integrity or that of other persons at the site. The Contractor must keep

and update a written record of all information transmitted with signatures of all affected workers.

.2 The following information and documents must be posted in a location readily accessible to all workers:

.1 Notice of site opening;
.2 Identification of Principal Contractor;
.3 Company OSH policy;
.4 Site-specific safety program;
.5 Emergency plan;
.6 Data sheets for all hazardous material used at the site;
.7 Minutes of site committee meetings;
.8 Names of site committee representatives;
.9 Names of those with first-aid training;
.10 Action reports and correction notices issued by the CSST.

1.11 UNFORESEEN CIRCUMSTANCES

.1 Whenever a source of danger not defined in the specifications or identified in the preliminary site inspection arises as a result of or in the course of the work, immediately suspend work, take appropriate temporary measures to protect the workers and the public and notify Departmental Representative, both verbally and in writing. Then the Contractor must modify or update the site specific safety program in order to resume work in safe conditions.

1.12 HEALTH/SAFETY/HYGIENE/ENVIRONMENTAL SPECIALISTS

.1 As of enter time, hire a qualified person whose duties will be to ensure compliance with and application of all legislation, regulations and standards and all contractual requirements pertaining to safety.

.2 Provide this person with the authority, resources and tools needed for performance of his/her duties.

.3 The person selected shall:

.1 Have in-depth knowledge of legislation and regulations applicable to the site pertaining to safety.
.2 Develop and disseminate a safety orientation program for all site workers.
.3 Ensure that no worker is admitted to the site without having taken the safety orientation program and met all the training requirements of the applicable legislation and the site-specific safety program.
.4 Inspect the work and ensure compliance with all regulatory requirements and those of the contract documents or the site-specific safety program.
.5 Keep a daily log of actions taken and submitting a copy to Departmental Representative each week.

1.13 INSPECTION OF SITE AND CORRECTION OF HAZARDOUS SITUATIONS

.1 Inspect the work site and complete the site inspection sheet at least once a week.

.2 Immediately take all necessary measures to correct any lapses from legislative or regulatory requirements and any hazards identified by a government inspector, by the Departmental Representative, by the site safety and health coordinator or during routine inspections.

.3 Submit to Departmental Representative written confirmation of all measures taken to correct lapses and hazardous situations.

.4 Give the safety officer or, where there is no safety officer, the person assigned to safety and health responsibilities, full authority to order interruption and resuming of work as and when deemed necessary or desirable in the interests of safety and health. This person should always act so that the safety and health of the public and site workers and environmental protection take precedence over cost and scheduling considerations.

.5 Without limiting the scope of sections 1.8 and 1.9, Departmental Representative may order cessation of work if, in his/her view, there is any hazard or threat to the safety or health of site personnel or the public or to the environment.

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 SUBMITTALS

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

1.2 FIRES

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

.2 Take all the necessary measures to insure an appropriate inspection and protection for fire prevention, according to the instructions supplied.

1.3 DISPOSAL OF WASTES

.1 Do not bury rubbish and waste materials on site unless approved by Departmental Representative.

.2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

.3 Grade and classify all non reusable demolition materials from wharf to manage their future utilisation or disposal in compliance with all applicable environmental regulations.

.4 All necessary installations for the use of grading and classification of reusable or disposal materials must be plan out of work site and in a safe and predetermined area.

.5 Reusable or recyclable materials from demolition are as follows:

- .1 Concrete
- .2 Chips paint and other residues of surface preparation
- .3 Untreated and treated wooden pieces
- .4 Steel fastening components such as bolt, lag screw, etc;

.6 Information on managing demolition material is found in Section 01 74 21 – Construction/Demolition Waste Management

.7 Contractor shall gradually dispose of non-reusable material from demolition off work site to an authorized site.

.8 Waste materials from demolition and non reusable in the new structure shall be recycle if possible, and if not, the site of disposal shall be approved by the Quebec Ministère du Développement durable et de la Lutte contre les changements climatiques (MDDELCC). Upon request, the department may provide information on the sites in operation. This includes any dry material, waste or rubbish from demolition or construction.

.9 Contractor shall submit a copy of official authorization and permits prior to seek Departmental Representative's authorization to remove waste materials from work site.

.10 Dispose of contaminated waste and soils according to Québec's regulation and with Québec's Soil Protection and Rehabilitation of Contaminated Sites Policy.

1.4 WORK ADJACENT TO WATERWAYS

.1 Do not use banks or waterway beds material for borrow.

.2 Do not dump construction material, waste or debris in waterways.

.3 Cleaning of equipment in the water is prohibited.

.4 Service and refuel vehicles at least 30 m from bank.

.5 Do not store petroleum products or any other hazardous materials less than 30 m from bank.

.6 If for some reasons certain equipment or hazardous products, implying hazardous material handling, should stay beneath 30 m from waterways, Contractor shall submit a contingency plan to the Departmental Representative and get it approved prior to beginning of work. The plan will provide, without being limited to, details as follows:

.1 Designated inner limits of work area for the use of operations;

.2 Handled or stored hazardous products (ex. diesel, waste oils, etc.);

.3 Containment methods used in order to limit contamination during maintenance and refuelling of equipments and vehicles (in case of oil leakage);

.4 The presence of emergency equipment in case of spill near supplying zone and maintenance area.

.5 The procedure for hazardous spill.

.6 A list of contacts in case of hazardous spill.

.7 If generators must be used, make sure that the fuel tank of each generator is with double walls and that it is installed on an impermeable floor with raised kerb to avoid any discharge.

1.5 POLLUTION CONTROL

.1 Materials used shall be inert and exempt from contaminants.

.2 Prevent fine materials and other extraneous materials from contaminating air and water beyond work site.

.3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.

.4 Control emissions from equipment and plant to local authorities emission requirements.

.5 Use machinery in good operating condition to avoid grease, oil or fuel leaks. Submerged equipment parts shall be clean and free of leaks.

.6 Perform service and verifications before arrival at site. Ensure there are no fuel, oil or grease leaks, and silencer must be in good condition. Repair non-compliant equipment as rapidly as possible (noise or leaks).

.7 Immediately recover any contaminant spill in the environment and dispose of it in accordance with applicable legislation.

.8 Maintain absorbent materials on site at all times for rapid intervention in case of hazardous spill. Know how to use emergency equipment in case of accidental spill. Report any oil spill or other environmental incident to Departmental Representative and authorities

having jurisdiction. Recover hydrocarbons and contaminated soil and dispose of in conformance with applicable legislation.

.9 Submit emergency plan related to hazardous spill, with a list of all contributors with their phone number.

.10 Keep on site suitable emergency equipments in case of an accidental spill and ensure the appropriate use of it.

.11 Keep on site, near the work area and near the supplying zone established, an emergency spill response kit. The emergency spill response kit shall contain absorbent material in adequate quantities to remove petroleum from site.

.12 In the event of a hydrocarbons spill or other hazardous material, the Contractor must advise Departmental Representative and authorities having jurisdiction mentioned in the emergency plan. Report immediately the situation to Environment Canada Emergency services (1-866-283-2333), Environment Emergency of Québec (1-866-694-5454) for an on land spills and to Canadian Coast Guard- Marine Accidental Spill Incidents (1-800-363-4735).

.13 Wasted oils and other contaminated wastes shall be managed in compliance with effective regulation. This included storage at site, transportation and elimination.

.14 Do not dispose of volatile materials such as mineral oils and oil or paint thinner in rivers, storm-water or sewers.

.15 Any hazardous waste generated on the work site will have to be conveyed to a well-authorized disposition site by MDDELC.

.16 Hazardous waste storage and transport will have to be done in accordance with the regulation in force in order not to contaminate the environment.

.17 Prior to conveying hazardous waste from work site, the Contractor shall obtain the Departmental Representative authorization by showing a copy of all licenses obtained from the owners or hazardous waste disposal site authorities

1.6 TRANSPORT OF MATERIALS

.1 Materials may be transported on public roads to construction site from Monday to Saturday unless notified otherwise by the authorities having jurisdiction. Transport is prohibited on Sundays and public holidays.

.2 Materials may be transported through the city between 7h00 a.m. and 8h00 p.m. (20h00) Transport outside these hours is prohibited.

.3 Ensure proper operation of trucks used. Any trucks or other means of transport creating sound levels that Departmental Representative deems to exceed standards shall cease transporting materials or be repaired or modified to be made acceptable.

.4 Contractor shall use adequate signalization and co-operate with municipality, Departmental Representative, Harbour Authority and other authorities having jurisdiction to minimize the impact of transportation on the daily lives of residents in area adjacent to truck route and construction site.

.5 Limit traffic for the transportation of material to roads and areas identified in the specifications.

.6 Maintain the roads used in good condition at all times and take the necessary measures to ensure they can be safely used and crossed by other users.

.7 Upon work completion, promptly restore the roads to a condition that is at least equal to their original state.

1.7 PROTECTION OF THE AQUATIC ENVIRONMENT IN THE WORK AREA

.1 The work area should be clearly defined.

.2 Ensure workers are informed of environmental and safety measures.

.3 The Contractor must ensure retrieve all demolition materials from the demolition of concrete columns or surface preparation for painting piles and sheet pile.

.4 The Contractor shall minimize the work in aquatic environment and on bank. At anytime the heavy equipment will be allowed the move outside the work area.

.5 For underwater works required, the Contractor must assure that all equipment pieces involved are free of contamination and of any oil leakage.

.6 Land-based equipment storage shall be made in anytime above high tides level and as conditions described in section 1.5 – Work adjacent to waterways.

1.8 CONTAMINATED MATERIALS

.1 Contaminated materials shall be temporarily stored in leak-proof containers or under waterproof tarps prior to shipping for sorting, removal of metals or other preparations so that contaminated materials can be contained from the soil and protected from the rain and so that runoff does not reach the soil or waterways.

.2 During Works, take all necessary measures to avoid spreading debris into the aquatic environment:

- .1 Store waste and debris at a site distant from the aquatic environment, in accordance with Departmental Representative indications.
- .2 Quickly retrieve debris or objects released into the aquatic environment.
- .3 The Contractor shall provide a log of activities related to the management and disposal of demolition materials.

.3 Contaminated materials shall be sent to a site authorized by the MDDELC and intended for this purpose.

.4 The Contractor shall provide the Departmental Representative with a copy of authorizations obtained from the owners or managers of disposal sites for creosote-treated wood and other contaminated materials and, if necessary, for soil contaminated by firefighting activities.

1.9 NOISY WORKS

.1 Noisy works are prohibited at night, with less of peremptory necessity.

1.10 NOTICE TO SHIPPING

.1 Issue a Notice to Shipping regarding date and duration of work, in accordance with the Navigation Protection Act.

.2 Set up and meet requirements of license emitted under the terms of the Navigation Protection Act

1.11 WORK MONITORING

.1 Mitigation measures from the assessment report, and those mentioned in the present section will be subject to constant monitoring on work site by a Departmental Representative.

.2 The Department Representative will complete an environmental control data record of work site. This control data record will be given to Contractor on a weekly basis.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 REFERENCES AND CODES

.1 All work shall meet or exceed the requirements of the latest edition of the standards of the Canadian Government Specifications Board (CGSB), the Canadian Standards Association (CSA), the National Building Code of Canada (NBC), the American Society for Testing and Materials (ASTM), the Canadian Standard Association (CSA), the American Concrete Institute (ACI), Cahier des charges et Devis généraux (CCDG) from Ministère des Transports du Québec and the other standards and codes referred to herein, including amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.

.2 Where conflict arises in the course of work, the strictest standards shall apply.

.3 At any time when the specifications refer to standards, standard to be applied shall be the latest edition available, regardless of the edition designated in specification.

.4 Meet or exceed requirements of:

.1 Contract documents.

.2 Specified standards, codes and referenced documents.

1.2 LAWS, REGULATIONS AND DECREES

.1 Contractor shall conform to all rights and privileges of others, and to all federal, provincial and municipal laws, regulations and decrees; he must also make sure that his employees, in law or in fact, and his subcontractors conform to same.

.2 The applicable permits and approvals will have to be obtained by the Contractor before the beginning of work.

1.3 PERMITS, FEES AND TAXES

.1 Contractor shall give all notices, obtain and pay all fees and construction permits for the demolition and for construction, and for all other services, as required by the authorities having jurisdiction.

.2 Contractor shall be responsible for all damage and costs resulting from default to obtain these fees and permits.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 SECTION CONTENT

.1 Inspection and testing, administrative and enforcement requirements

.2 Tests and mix designs

.3 Mock-ups

1.2 RELATED SECTIONS

.1 Section 01 33 00 – Submittal procedures

.2 Section 01 77 00 – Closeout procedures

1.3 INSPECTION

.1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.

.2 Give timely notice requesting inspection if Work is designated for inspections, approvals or special tests required by Departmental Representative or by law of Place of Work.

.3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

.4 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction.

1.4 INDEPENDENT INSPECTION AGENCIES

.1 Independent Inspection/Testing Agencies will be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Departmental Representative.

.2 Provide equipment required for executing inspection and testing by appointed agencies.

.3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.

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

1.5 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.

1.6 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.

1.7 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 it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Departmental Representative 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 Departmental Representative.

1.8 REPORTS

.1 Submit 2 copies of inspection and test reports to Departmental Representative

.2 Provide copies to manufacturer or fabricator of material being inspected or tested.

1.9 TESTS AND MIX DESIGNS

.1 Furnish test results and mix designs as requested.

1.10 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 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 Mock-ups may remain as part of Work.

.7 Specification section identifies whether mock-up may remain as part of Work or if it is to be removed and when.

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 SCOPE

.1 This section outlines the Contractor's responsibilities regarding quality control for all work, including requirements relating to plans, procedures and organization necessary to produce a final product compliant with the expectations listed in the plans and specifications. Quality control must cover all construction operations, both on the work site and elsewhere (e.g. quarries).

.2 Independent quality assurance activities will be conducted by the Departmental Representative. These activities aim to provide independent observations of compliance with the requirements set out in plans and specifications and in no way relieve the Contractor of its quality control responsibilities. See Section 01 45 00 – Quality Control.

1.2 RELATED SECTIONS

.1 Section 01 45 00 - Quality Control.

.2 Section 02 41 16 – Structure Demolition

1.3 QUALITY CONTROL

.1 Contractor obligations:

.1 The Contractor is responsible for quality control and shall establish and maintain an effective quality control program. This includes the personnel, procedures and organization required to produce a final product that meets contract requirements. Quality control must cover all construction operations, both on the work site and elsewhere, and must be adapted to the proposed construction sequence.

.2 The Contractor shall monitor quality control for suppliers, manufacturers, products, services, work site conditions and work activities to produce the specified quality of work.

.3 The Contractor shall comply with manufacturers' instructions for each step of the construction sequence.

.4 If manufacturers' instructions conflict with contract documents, the Contractor shall request clarification from the Departmental Representative before proceeding.

.5 The Contractor shall comply with the specified standards for the minimum quality of work unless there are tolerances for codes or prescribed requirements that require stricter standards or more detailed work.

.6 The Contractor shall perform the work with qualified personnel to produce work of the prescribed quality.

1.4 TOLERANCES

.1 The Contractor shall monitor the control of tolerances to produce acceptable work. The Contractor shall not allow tolerances to accumulate.

.2 The Contractor shall comply with manufacturer and specification tolerances. If manufacturer tolerances conflict with contract documents, the Contractor shall request clarification from the Departmental Representative before proceeding.

1.5 REFERENCES

.1 For products or work prescribed by an association, a construction trade or other recognized standards, the Contractor shall comply with the standards unless more stringent requirements are prescribed or required by applicable codes.

.2 The Contractor shall comply with the reference standards in effect at the time of receipt of bids, except where a specific date is set by the code.

.3 The Contractor shall obtain copies of the standards if required by the specification sections.

.4 Neither contractual relationships nor the duties and responsibilities of the contract parties or those of the Departmental Representative can change with respect to the contract documents by mention or suggestion of any reference document.

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 QUALITY CONTROL PHASES

.1 Quality control is a means by which the Contractor can ensure that the construction, including for subcontractors and suppliers, fulfills contract requirements. Quality control must cover all construction operations, both on the work site and elsewhere, and correspond to the proposed construction sequence. It must include at least three control phases to be carried out by the Contractor's quality control system manager for all definable portions of the work, as follows:

.1 **Preparatory phase:** This phase must be completed before work begins for each definable portion of work and must include:

.1 A review of each paragraph of the applicable specifications.

.2 A review of the contract plans.

.3 A review to ensure all materials and/or equipment have been tested, submitted and approved.

.4 A review to ensure the required control inspection and testing have been planned.

.5 A review of the work area to ensure that all required preliminary work has been performed and is consistent with the contract.

.6 A physical examination of materials, equipment and work samples required to ensure they are available, in accordance with the approved shop drawings or on the required bid submission date, and are properly stored.

.7 A discussion on construction work procedures, including necessary changes to resolve recurring problems.

.8 Construction tolerances in documents and work standards for this work phase.

.9 A review to ensure the Departmental Representative has approved the portion of the quality control plan for the work to be done.

.2 **Initial phase:** This phase must be carried out at the beginning of a definable portion of work. The following must be done:

.1 A review of the completed work to ensure it complies with contract requirements.

.2 Review of overall compliance with the contract: Verify inspection and testing required by quality control.

.3 Establish the level of qualification for the work to be carried out and make sure it meets the minimum acceptable standards for the work. Compare with test sections and approved sample panels, where applicable.

.4 Correct any differences.

.5 The initial phase should be repeated for each new team to work on the site or whenever the prescribed minimum acceptable standards are not met.

.3 **Monitoring phase:** Daily checks must be performed to ensure continued compliance with contract requirements, including control testing, until the specific portion of the work is completed. Reviews must be recorded in the Contractor's quality control documents and submitted to the Departmental Representative. Final monitoring reviews must be performed and all problems must be corrected before the start of a new portion of work that could be affected by the defective work. The Contractor shall not build on or conceal non-compliant work.

3.2 COMPLETION INSPECTION

.1 Once all the work is completed, the Contractor's quality control manager and the Departmental Representative shall inspect the work and list the elements that are inconsistent with the plans and specifications. The Contractor shall provide an estimated date on which the Contractor's quality control manager and personnel will conduct a second inspection to ensure all defects have been corrected and shall notify the Departmental Representative of the date.

3.3 DOCUMENTATION

.1 The Contractor shall maintain records of operations, activities and quality control tests conducted, including work carried out by subcontractors and suppliers. These records must be in an acceptable format and must include factual evidence that the required activities and/or quality control testing have been carried out, including, but not limited to, the following:

.1 The Contractor/subcontractor and their area of responsibility

.2 Testing and/or control activities conducted with results and references to plan and/or specification requirements

.3 Identification of elements submitted and reviewed with contract reference

.4 Conflicts with plans and/or specifications

.5 Contract plans as created, including full set of contract plans marked in red to indicate all conditions differing from original plans

.6 Shop drawings having received final approval

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 52 00 – Construction facilities

.2 Section 01 56 00 – Temporary barriers and enclosures

1.2 INSTALLATION AND REMOVAL

.1 Provide temporary utilities controls in order to execute work expeditiously.

.2 Remove from site all such work after use.

1.3 TEMPORARY POWER AND LIGHT

.1 Provide and pay for temporary power during construction for temporary lighting and operating of power tools.

.2 Arrange for connection with appropriate utility company. Pay costs for installation, maintenance and removal.

.3 Temporary power for electric equipment requiring of above is provided by Departmental Representative. The current electric system on the wharf is temporary because it was damaged during the winter 2016. The contractor must check if the current supply is in good condition and if not, inform the Department representative as soon as possible.

.4 Provide and maintain temporary lighting throughout project. Ensure level of illumination on work site is not less than required by Departmental Representative.

1.4 TEMPORARY COMMUNICATION FACILITIES

.1 Provide and pay for temporary telephone, fax, data hook up, lines and equipment necessary for own use and use of Departmental Representative.

.2 Ensure the connection of these installations with major networks and the costs of these services.

1.5 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 SECTION CONTENT

.1 Construction aids

.2 Office and sheds

.3 Parking area

.4 Project identification

1.2 RELATED SECTIONS

.1 Section 01 51 00 - Temporary Utilities

.2 Section 01 56 00 - Temporary Barriers and Enclosures

.3 Section 01 74 11 - Cleaning

1.3 INSTALLATION AND REMOVAL

.1 Provide construction facilities in order to execute work expeditiously.

.2 Remove from site all such work after use.

1.4 HOISTING

.1 Provide, operate and maintain hoists required for moving of workers, materials and equipment and provide maintenance and use of hoists.

.2 Hoist to be operated by qualified operator.

1.5 SITE STORAGE/LOADING

.1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products and materials.

.2 Do not load or permit to load any part of Work with weight or force that will endanger Work.

.3 Contractor shall consider that existing wharf is closed at all vehicles beyond 0+97 m. Also, beyond 0 + 60 m vehicle passing is forbidden under 3 m from wharf's face.

.4 Before storing equipment or materials on-site, the Contractor shall obtain written authorization from Harbour Authority.

1.6 ON-SITE PARKING

.1 Parking will be permitted on site if it does not disrupt performance of Work. The storage area planned for the Contractor can be used for this purpose.

.2 Provide and maintain adequate access to project site.

.3 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and repair damages resulting from Contractors' use of roads

.4 Clean runways where used by Contractor's equipment.

1.7 OFFICES

.1 Provide temporary office 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.

.4 Allow access to Contractor's office for Departmental Representative's when visiting site.

.1 If Contractor wants to use other lots adjacent to the work site for his site office, he shall come to an agreement with the owners concerned and submit to Departmental Representative and to contracting authority a copy of this agreement. The Contractor shall also obtain Departmental Representative's approval regarding location of the Departmental Representative's office with respect to the work site and access.

.2 Site offices shall be established on site prior to works.

.3 Maintain worksite clean.

1.8 EQUIPMENT, TOOL AND MATERIALS STORAGE

.1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

.2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

1.9 SANITARY FACILITIES

.1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.

.2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.10 CONSTRUCTION SIGNAGE

.1 Provide and erect project sign, at least one (1) week before commencement of Works, in a location designated by Departmental Representative.

.2 Construction sign 1.2 m x 2.4 m, of wood frame and plywood construction painted with exhibit lettering produced by a professional sign painter.

.3 Indicate on sign, name of Owner, Contractor and Subcontractor (if applicable), of design style established by Departmental Representative.

.4 No other signs or advertisements, other than warning signs, are permitted on site.

.5 Locate project identification sign as directed by Departmental Representative and construct as follows:

.1 Build concrete foundation, erect framework, and attach signboard to framing.

.6 Signs and notices for safety and instruction in both official languages. Graphic symbols to CAN/CSA-Z321.

.7 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Departmental Representative.

1.11 ELECTRICAL SERVICES

.1 Supply necessary electrical services on work site.

.2 Assume the cost of these electrical services, whether for lighting, heating or other uses.

.3 Assume the cots of installation and removal of these electrical services

.4 The installation of electrical services shall be abide by applicable laws and regulations

1.12 TEMPORARY AIDS TO NAVIGATION AND MARKER BUOYS

.1 Provide temporary aids to navigation and marker buoys to delineate work areas acceptable to Canadian Coast Guard and Harbour Authority.

.2 Coordinate with the Local Authorities to provide Notices to Mariners regarding navigation requirements throughout the duration of Work

1.13 CLEANING

.1 Once Works is completed, remove machinery/tools and evacuate waste to leave the place in order.

.2 Clean work area progressively.

Part 2 Products

.1 Not Used.

Part 3 Execution

.1 Not Used.

END OF SECTION

Part 1 General

1.1 SECTION CONTENT

.1 Temporary Site Enclosures and Barriers

.2 Fire Routes

1.2 RELATED SECTIONS

.1 Section 01 14 00 – Work Restrictions

.2 Section 01 51 00 – Temporary Utilities

.3 Section 01 52 00 – Construction Facilities

1.3 INSTALLATION AND REMOVAL

.1 Provide temporary controls in order to execute Work expeditiously.

.2 Remove from site all such work after use.

1.4 GUARD RAILS AND BARRICADES

.1 Provide secure, rigid guard rails and barricades around deep excavations.

.2 Provide items as required by governing authorities.

1.5 FIRE ROUTES

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

1.6 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

.1 Protect surrounding private and public property from damage during performance of Work.

.2 Be responsible for damage incurred.

1.7 PROTECTION OF WORK FINISHES

.1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.

.2 Provide necessary screens, covers, and hoardings.

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

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 SECTION CONTENT

.1 Product quality, availability, storage, handling, protection, and transportation

.2 Manufacturer's instructions

.3 Work execution, coordination and fastenings

.4 Existing structures

1.2 RELATED SECTIONS

.1 Section 01 33 00 - Submittal procedures

1.3 REFERENCES

.1 Conform to these reference standards, in whole or in part as specifically requested in specifications.

.2 If there is question as to whether products or systems are in conformance with applicable standards, Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance.

.3 Cost for such testing will be born by Departmental Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance.

.4 If no specific date or edition is mentioned, conform to the most recent standards in force at the time of the deposit of tender.

1.4 QUALITY

.1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.

.2 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve Contractor responsibility, but is precaution against oversight or error. Contractor shall remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.

.3 Should disputes arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.

.4 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.

.5 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.5 AVAILABILITY

.1 Immediately upon notice of acceptance of offer, review product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of products are foreseeable, notify Departmental Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.

.2 In event of failure to notify Departmental Representative at commencement of Work and should it subsequently appear that Work might be delayed for such reason, Departmental Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.6 STORAGE, HANDLING AND PROTECTION

.1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.

.2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.

.3 Store cementitious products clear of earth or concrete floors, and away from walls.

.4 Store products subject to damage from weather in weatherproof enclosures.

.5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.

.6 Store sheet or panel materials and lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.

.7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.

.8 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.

.9 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over nameplates.

1.7 TRANSPORTATION

.1 Pay costs of transportation of products required in performance of Work.

.2 Transportation cost of products supplied by Departmental Representative will be paid for by Departmental Representative. Unload, handle and store such products.

1.8 MANUFACTURER'S INSTRUCTIONS

.1 Unless otherwise indicated in specifications install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.

.2 Notify Departmental Representative in writing, of conflicts between specifications and manufacturer's instructions, so that Departmental Representative will establish course of action.

.3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Departmental Representative to require removal and re-installation at no increase in Contract Price or Contract Time.

1.9 QUALITY OF WORK

.1 Ensure Quality of Work is of best quality, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Departmental Representative if required Work is such as to make it impractical to produce required results.

.2 Do not employ anyone unskilled in their required duties. Departmental Representative reserves right to require dismissal from site of workers deemed incompetent or careless.

.3 Decisions as to standard, fitness or quality of Work in cases of dispute rest solely with Departmental Representative, whose decision is final.

1.10 CO-ORDINATION

.1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.

.2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.11 CONCEALMENT

.1 Before installation inform Departmental Representative if there is interference.

.2 Install as directed by Departmental Representative.

1.12 REMEDIAL WORK

.1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.

.2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.13 FASTENINGS

.1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.

.2 Prevent electrolytic action between dissimilar metals and materials.

.3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.

.4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage.

1.14 FASTENINGS - EQUIPMENT

.1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.

.2 Use heavy hexagon heads, semi-finished unless otherwise specified.

.3 Bolts may not project more than one diameter beyond nuts.

1.15 LOCATION OF FIXTURES

.1 Consider location of mechanical and electrical items indicated as approximate.

.2 Inform Departmental Representative of conflicting installation. Install as directed.

1.16 PROTECTION OF WORK IN PROGRESS

.1 Prevent overloading parts of structures. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of Departmental Representative.

.2 Do not use existing wharf with heavy equipment, as indicated on drawings, and respect all restrictions on wharf.

1.17 EXISTING UTILITIES

.1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work and local users.

.2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

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 SECTION INCLUDES

.1 Cleaning as work progresses

.2 Final cleaning

1.2 RELATED SECTIONS

.1 Section 01 74 21 - Construction/demolition Waste Management

.2 Section 01 77 00 - Closeout Procedures

1.3 WORK SITE CLEANLINESS

.1 Maintain work site in tidy condition, free from accumulation of waste products and debris, including that caused by Owner or other Contractors.

.2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.

.3 Conduct work site cleaning and disposal operations to comply with local ordinances and Clean Air Act.

.4 Prevent accumulation of hazardous waste.

.5 Keep work site and public properties clean and free of debris and waste.

.6 Keep work site access road free of ice and snow. Place snow only at indicated areas or evacuate out of work site as indicated.

.7 Clean up dirt from passage of trucks and equipment to the satisfaction of municipal authorities and the Departmental Representative, as work progresses.

.8 Make arrangements to obtain all necessary licences from authorities for waste disposal.

.9 Provide on-site containers for collection of waste materials and debris.

.10 Provide and use marked separate bins for recycling. Refer to Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.11 Dispose of waste materials and debris at designated dumping areas by the Department Representative.

.12 Store volatile waste in covered metal containers, and remove from premises at end of each working day.

1.4 FINAL CLEANING

.1 When work is substantially performed, remove surplus products, tools, construction machinery and equipment not required for performance of remaining work.

.2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.

.3 Prior to final review remove surplus products, tools, construction machinery and equipment.

.4 Remove waste products and debris including that caused by Owner or other Contractors.

.5 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.

.6 Make arrangements to obtain all necessary licences from authorities for waste disposal.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 33 00 – Submittal Procedures

.2 Section 01 35 43 – Environmental Procedures

.3 Section 01 74 11 – Cleaning

.4 Section 02 41 16 – Structure Demolition

.5 Section 02 81 01 – Hazardous materials

1.2 DEFINITIONS

.1 Recycling: process of sorting, cleaning, 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.

.2 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.

.3 Salvage: removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.

.4 Source Separation: acts of keeping different types of waste materials separate beginning from first time they became waste.

1.3 SUBMITTALS

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

.2 The Contractor will have to provide a weekly report on its construction/demolition waste disposal. This report will include, if required, the results of the physicochemical analyses carried out on materials coming from the work site or any other relevant document.

.3 Submit before final payment summary of waste materials salvaged for reuse, recycling or disposal.

.1 Failures to submit could result in hold back of final payment.

.2 Provide receipts, scale tickets, waybills, and show quantities and types of materials reused, recycled or disposed of.

.3 For each material reused, sold or recycled from project, include amount in tonnes and the destination.

.4 For each material land filled or incinerated from project, include amount in tonnes of material and identity of landfill, incinerator or transfer station.

1.4 STORAGE, HANDLING AND PROTECTION

.1 Store, materials to be reused, recycled and salvaged in locations as directed by Departmental Representative.

.2 Unless specified otherwise, materials for removal become Contractor's property. Contractor is responsible for disposing of these materials and choosing authorized landfill site.

.3 Protect, stockpile, store and catalogue salvaged items.

.4 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.

.5 Protect structural components not removed for demolition from movement or damage.

.6 Support affected structures. If safety of structures is endangered, cease operations and immediately notify Departmental Representative.

.7 Protect mechanical and electrical from damage and blockage.

.8 Separate and store materials produced during dismantling of structures in designated areas.

.9 Prevent contamination of materials to be salvaged and recycled in accordance with requirements for acceptance by designated facilities.

.1 On-site source separation is recommended.

.2 Remove co-mingled materials to off-site processing facility for separation.

.3 Provide waybills for separated materials.

.10 Transport materials whose level of contamination would be equal or higher than the generic C criterion of the MDDELCC Soil Protection and Rehabilitation of Contaminated Sites Policy, either in a closed means of containment or in a dump vehicle equipped with a waterproof tarpaulin completely covering the top of the body and the load. (Art. 18, *Transportation of dangerous substances Regulation*).

1.5 DISPOSAL OF WASTES

.1 Recover, sort and separate waste generated by demolition into categories in preparation for transfer to various licensed sites.

.2 Manage construction or demolition debris and waste that cannot be reclaimed on land in conformance with requirements of the Quebec Department of Développement durable, Environnement et Lutte contre les changements climatiques (according to the "Soil Protection and Rehabilitation of Contaminated Sites Policy" or "Dry Materials Management"). Do not incorporate any demolition materials into work other than those

accepted. Contractor is responsible for disposing of these materials and choosing authorized landfill site.

.3 Do not bury rubbish or waste materials.

.4 Do not dispose of waste, volatile materials, mineral spirits, oil or paint thinner into waterways, storm, or sanitary sewers.

.5 Remove materials from deconstruction as deconstruction/disassembly Work progresses.

.6 Evacuate waste materials out of site along with work progress.

.7 Prepare project summary to verify destination and quantities on a material-by-material basis as identified.

1.6 SCHEDULING

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

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 APPLICATION

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

.2 Soils characterization of work site will be done prior and after works. Contamination caused by Contractor operations shall be rectified, without expense to Departmental Representative.

3.2 CLEANING

.1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.

.2 Clean-up work area as work progress.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 33 00 – Submittal Procedures

.2 Section 01 78 00 – Closeout Submittals

1.2 INSPECTION AND DECLARATION

.1 Contractor's Inspection: Contractor and all Subcontractors shall conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.

- .1 Notify Departmental Representative in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
- .2 Request Departmental Representative's Inspection.

.2 Departmental Representative's Inspection: Departmental Representative and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor shall correct Work accordingly.

.3 Completion: submit written certificate that following have been performed:

- .1 Work has been completed and inspected for compliance with Contract Documents.
- .2 Defects have been corrected and deficiencies have been completed.
- .3 Equipment and systems have been tested, adjusted, balanced and are fully operational.
- .4 Certificates required by Utility companies have been submitted.
- .5 Operation of systems has been demonstrated to Owner's personnel.
- .6 Work is complete and ready for final inspection.

.4 Final Inspection:

- .1 When items noted above are completed, request final inspection of Work by Departmental Representative and Contractor.
- .2 If Work is deemed incomplete by Departmental Representative, complete outstanding items and request reinspection.

.5 Declaration of Substantial Performance: Departmental Representative considers deficiencies and defects have been corrected and it appears requirements of Contract have been substantially performed, make application for certificate of Substantial Performance.

.6 Commencement of Lien and Warranty Periods: date of Departmental Representative's acceptance of submitted declaration of Substantial Performance shall be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.

.7 Certificate of Final Performance:

.1 When Departmental Representative considers final deficiencies and defects have been corrected and it appears requirements of Contract have been totally performed, make application for final payment.

.2 If Work is deemed incomplete by Departmental Representative, complete outstanding items and request reinspection.

1.3 FINAL CLEANING

.1 Clean in accordance with Section 01 74 11 - Cleaning.

.1 Remove surplus materials, excess materials, rubbish, tools and equipment.

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

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 45 00 – Quality Control

.2 Section 01 77 00 – Closeout Procedures

1.2 SUBMITTALS

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

.2 Prepare instructions and data using personnel experienced in maintenance and operation of described products.

.3 Copy will be returned with Departmental Representative comments after final inspection.

.4 Revise content of documents as required prior to final submittal.

.5 Two weeks prior to Substantial Performance of the Work, submit to Departmental Representative, two final copies of operating and maintenance manuals in French.

.6 Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.

.7 Furnish evidence, if requested, for type, source and quality of products provided.

.8 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.

.9 Pay costs of transportation.

1.3 FORMAT

.1 Organize data as instructional manual.

.2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pocket.

.3 When multiple binders are used, correlates data into related consistent groupings. Identify contents of each binder on spine.

.4 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.

.5 Arrange content by systems, under Section numbers and sequence of Table of Contents.

.6 Provide tabbed flyleaf for each separate product and system, with typed description of product and major component parts of equipment.

.7 Text: manufacturer's printed data, or typewritten data.

.8 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

.9 Provide 1:1 scaled CAD files in dwg format on CD.

1.4 CONTENTS - EACH VOLUME

.1 Table of Contents: provide title of project;

.1 Date of submission;

.2 Names, addresses, and telephone numbers of Contractor with name of responsible parties;

.3 Schedule of products and systems, indexed to content of volume.

.2 For each product or system:

.1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.

.3 Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.

.4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.

.5 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control.

1.5 AS-BUILTS AND SAMPLES

.1 Maintain, in addition to requirements in General Conditions, at site for Departmental Representative, one record copy of:

.1 Contract Drawings.

.2 Specifications.

.3 Addenda.

.4 Change Orders and other modifications to Contract.

.5 Reviewed shop drawings, product data, and samples.

.6 Field test records.

.7 Inspection certificates.

.8 Manufacturer's certificates.

.2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.

.3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document <PROJECT RECORD> in neat, large, printed letters.

.4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.

.5 Keep record documents and samples available for inspection Departmental Representative.

1.6 RECORDING ACTUAL SITE CONDITIONS

.1 Record information on set of drawings and in copy of Project Manual provided by Departmental Representative.

.2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.

.3 Record information concurrently while construction progress. Do not conceal Work until required information is recorded.

.4 Contract Drawings and shop drawings: mark each item to record actual construction, including:

- .1 Measured horizontal and vertical locations of waling, tie-rods, anchor wall, underground utilities and appurtenances, referenced to permanent surface improvements.
- .2 Field changes of dimension and detail.
- .3 Changes made by change orders.
- .4 Details not on original Contract Drawings.
- .5 References to related shop drawings and modifications.

.5 Specifications: mark each item to record actual construction, including:

- .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
- .2 Changes made by Addenda and change orders.

.6 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.

1.7 STORAGE, HANDLING AND PROTECTION

.1 Store components subject to damage from weather in weatherproof enclosures.

.2 Store paints and freezable materials in a heated and ventilated room.

.3 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.

1.8 WARRANTIES AND BONDS

.1 Assemble approved information in binder and submit upon acceptance of work. Organize binder as follows:

.1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.

.2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

.3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.

.4 Except for items put into use with Departmental Representative's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.

.5 Verify that documents are in proper form, contain full information, and are notarized.

.6 Co-execute submittals when required.

.7 Retain warranties and bonds until time specified for submittal.

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 SECTION INCLUDES

.1 Methods and procedures for total or partial demolition of structures.

1.2 RELATED SECTIONS

.1 Section 01 11 11 – Description of work

.2 Section 01 33 00 - Submittal Procedures

.3 Section 01 35 29 – Health and safety requirements

.4 Section 01 35 43 – Environmental procedures

.5 Section 01 56 00 - Temporary Barriers and Enclosures

.6 Section 01 74 21 - Construction/Demolition Waste Management and Disposal

1.3 REFERENCES

.1 Canadian Environmental Protection Act (CEPA)

- .1 CCME PN 1327, Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products

.2 Canadian Standards Association (CSA International).

- .1 CSA S350-M, Code of Practice for Safety in Demolition of Structures.

.3 Department of Justice Canada (Jus).

- .1 Canadian Environmental Assessment Act (CEAA).
- .2 Canadian Environmental Protection Act (CEPA).
  - .1 SOR/2003-2, On-Road Vehicle and Engine Emission Regulations.
  - .2 SOR/2006-268, Regulations Amending the On-Road Vehicle and Engine Emission Regulations.
  - .3 Transportation of Dangerous Goods Act (TDGA), 1992, c. 34.

.4 Underwriters' Laboratories of Canada (ULC)

- .1 CAN/ULC-S660, Standard for Nonmetallic Underground Piping for Flammable and Combustible Liquids.
- .2 ULC/ORD-C58.15, Overfill Protection Devices for Flammable Liquid Storage Tanks.
- .3 ULC/ORD-C58.19, Spill Containment Devices for Underground Flammable Liquid Storage Tanks.

.5 U.S. Environmental Protection Agency (EPA)/

.1 EPA CFR 86.098-10, Emission standards for 1998 and later model year Otto-cycle heavy-duty engines and vehicles.

.2 EPA CFR 86.098-11, Emission standards for 1998 and later model year diesel heavy-duty engines and vehicles.

.3 EPA 832/R-92-005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

1.4 DEFINITIONS

.1 Hazardous Materials: dangerous substances, dangerous goods, hazardous commodities and hazardous products, may include but not limited to: poisons, corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or other material that can endanger human health or well being or environment if handled improperly.

1.5 SUBMITTALS

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

.2 The Contractor is responsible for fulfilment of reporting requirements.

.3 Submit if requested by Departmental Representative, copies of certified weigh bills, bills of lading or receipts from authorized disposal sites and reuse and recycling facilities for material removed from site.

.1 Written authorization from Departmental Representative is required to deviate from receiving organizations.

.4 Where required by authorities having jurisdiction, submit for approval drawings, diagrams or details showing sequence of demolition work and supporting structures and underpinning.

.5 Submit drawings stamped and signed by qualified professional engineer registered or licensed in Province of Quebec, Canada.

1.6 QUALITY ASSURANCE

.1 Regulatory Requirements: Ensure Work is performed in compliance with CEPA, CEAA, TDGA, and applicable Provincial/Territorial and Municipal regulations.

.2 Meetings:

.1 Prior to start of Work, arrange site visit with Departmental Representative to examine existing site conditions adjacent to demolition work.

.2 Hold project meetings as requested by Departmental Representative.

.3 Ensure all key personnel attend.

.4 Departmental Representative will provide written notification of change to meeting schedule established upon contract award.

1.7 WASTE MANAGEMENT AND DISPOSAL

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

.2 Divert excess materials from landfill to site approved by Departmental Representative.

1.8 ENVIRONMENTAL PROTECTION

.1 Ensure Work is done in accordance with Section 01 35 43 - Environmental Procedures.

.2 Ensure that demolition work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.

.3 Fires and burning of waste or materials is not permitted on site.

.4 Do not dispose of waste or volatile materials including but not limited to: mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers.

.1 Ensure proper disposal procedures are maintained throughout project.

.5 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers, or onto adjacent properties.

.6 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with authorities having jurisdiction and as directed by Departmental Representative.

.7 Cover or wet down dry materials and waste to prevent blowing dust and debris. If required by Departmental Representative, control dust on all temporary roads.

1.9 EXISTING CONDITIONS

.1 The Contractor shall take the necessary steps to become thoroughly familiar with all aspects of the work site environment.

.2 The Contractor shall take into account in its bid that sheetpiles is in bad condition.

.3 A site survey from 2015 is presented in appendix. The information is provided for tender only. Information may differ form site conditions during Work.

.4 Should material resembling hazardous substance be encountered in course of demolition, stop work, take preventative measures, and notify Departmental Representative immediately. Do not proceed until written instructions have been received.

.5 If the demolition works require the installation of temporary supporting structures to protect the existing hauling ramp, the workshop drawings must carry the seal and signature of a recognized qualified engineer or holding a license enabling him to exert in Canada, in the Province de Québec.

.6 Structures to demolish to be based on their condition on date that tender are accepted.

.1 Remove, protect and store salvaged items as directed by Departmental Representative.

.7 The Contractor shall conduct research on historical temperature, wave and ice conditions and assess possible difficulties. There shall be no additional payment for lost time as a result of weather conditions.

.8 Weather conditions can be difficult (wind, cold, etc.). The work site may be subject to significant agitation due to waves.

1.10 SCHEDULING

.1 Employ necessary means to meet project time lines without compromising specified minimum rates of material diversion.

.1 In event of unforeseen delay notify Departmental Representative in writing.

Part 2 Products

2.1 EQUIPMENT

.1 Equipment and heavy machinery to:

.1 On-road vehicles to meet applicable emission requirements as prescribed in CEPA-SOR/2003-2, On-Road Vehicle and Engine Emission Regulations.

.2 Leave machinery running only while in use, except where extreme temperatures prohibit shutting machinery down.

Part 3 Execution

3.1 PROTECTION

.1 Prevent movement, settlement or damage of adjacent structures to prevent damage. Protect existing steel sheet pilling to preserve near dolosse protection

.1 Repair damage caused by demolition work as directed by Departmental Representative.

.2 Support affected structures and, if safety of structure being demolished or adjacent structures appears to be endangered, take preventative measures, stop Work and immediately notify Departmental Representative.

3.2 PREPARATION

.1 Do Work in accordance with Section 01 35 29 - Health and Safety Requirements.

.2 Information concerning the existing structures given on drawings is partial and had to be supplemented on the site.

.3 Protection of in-place conditions:

.1 Work in accordance with Section 01 35 43 - Environmental Procedures.

.2 Prevent movement, settlement or damage of adjacent structures, services, adjacent grades and parts of existing structures to remain.

.1 Provide bracing and shoring and underpinning as required.

.2 Repair damage caused by demolition as directed by Departmental Representative.

.3 Support affected structure. If safety of structure being demolished appears to be endangered, take preventative measures, stop Work and immediately notify Departmental Representative.

3.3 SAFETY CODE

.1 Do demolition work in accordance with Section 01 56 00 - Temporary Barriers and Enclosures, 01 35 29 Safety and Health and also codes regarding demolition work.

3.4 REMOVAL OF HAZARDOUS WASTES

.1 Remove contaminated or dangerous materials as defined by authorities having jurisdiction, relating to environmental protection, from site and dispose of in safe manner to minimize danger at site or during disposal in accordance with section 01 74 21 - Construction/Demolition Waste Management and Disposal.

3.5 DEMOLITION AND EXCAVATION

.1 No compensation will be approved for demolition work outside boundaries of demolition indicated on plans or determined by Departmental Representative.

.2 Information concerning the existing structures is drawn from « As-built » plans as well as from statements carried out on the le site. The tender must reflect these conditions. In the 48 hours following the discovery of a divergence at the time of the realization of work, Contractor shall inform the Departmental Representative of the situation.

.3 Remove demolition material at elevations on plan.

.4 Execute demolition work to permit construction.

.5 When demolition and excavation works are done, ask Departmental Representative for verification of elevation and dimensions.

.6 Do not release demolition material in the water. The Contractor shall immediately recover any debris released into water, at his own expense, and will be held responsible for any damage caused by released material.

.7 Remove existing equipment, services, and obstacles where required for refinishing or making good of existing surfaces, and replace as work progresses.

.8 At the end of each day work, leave Work in safe and stable condition.

.9 Carry out demolition work as so to minimize dusting. Keep materials wet as directed by Departmental Representative.

.10 Only dispose of waste material within the specified alternative disposal option as directed by Departmental Representative.

.1 Additional disposal options for waste diversion to be provided on-site by Departmental Representative's representative prior to disposal.

.11 Do not dispose materials in landfill or waste stream destined for landfill.

.12 Use natural lighting to do work where possible. Shut off lighting at the end of each day, except for those required for security purposes.

.13 Take account of tides during Works.

3.6 MATERIALS

.1 All materials from demolition that cannot be reused or those who will not be returned to Departmental Representative will become the property of the Contractor and shall be removed promptly according to Work progress.

.2 Do all sorting of materials directly on site. Unless specified, no other method will be accepted.

.3 The Contractor shall refer to Section 01 74 21 – Construction/Demolition Waste Management for the procedures for handling and storing demolition materials on-site.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 74 21 – Construction/Demolition Waste Management and Disposal

1.2 REFERENCES

.1 Canadian Environmental Protection Act, (CEPA)

.1 Export and Import of Hazardous Waste Regulations

.2 Department of Justice Canada (Jus)

.1 Transportation of Dangerous Goods Act, (TDG Act), (c. 34).

.2 Transportation of Dangerous Goods Regulations (T-19.01-SOR/2001-286).

.3 Health Canada / Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.4 National Research Council Canada Institute for Research in Construction (NRC-IRC)

.1 National Fire Code of Canada

1.3 DEFINITIONS

.1 Dangerous Goods: product, substance, or organism that is specifically listed or meets hazard criteria established in Transportation of Dangerous Goods Regulations.

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

.3 Hazardous Waste: any hazardous material that is no longer used for its original purpose and that is intended for recycling, treatment or disposal.

.4 Workplace Hazardous Materials Information System (WHMIS): a Canada-wide system designed to give employers and workers information about hazardous materials used in workplace. Under WHMIS, information on hazardous materials is provided on container labels, material safety data sheets (MSDS), and worker education programs. WHMIS is put into effect by combination of federal and provincial laws.

1.4 SUBMITTALS

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

.2 Submit to Departmental Representative current Material Safety Data Sheet (MSDS) for each hazardous material required prior to bringing hazardous material on site.

.3 Submit manufacturer's instructions, printed product literature and data sheets for hazardous materials and include product characteristics, performance criteria, physical size, finish and limitations.

.4 Submit two copies of WHMIS MSDS in accordance with Section 01 35 29 - Health and Safety Requirements and Section 01 35 43 - Environmental Procedures to Departmental Representative for each hazardous material required prior to bringing hazardous material on site.

.5 Submit hazardous materials management plan to Departmental Representative that identifies hazardous materials, their use, their location, personal protective equipment requirements, and disposal arrangements.

1.5 TRANSPORT, 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 Transport hazardous materials and wastes in accordance with Transportation of Dangerous Goods Act, Transportation of Dangerous Goods Regulations, and applicable provincial regulations.

.1 When exporting hazardous waste to another country, ensure compliance with Export and Import of Hazardous Waste and Hazardous Recyclable Materials Regulations.

.3 Storage and Handling Requirements:

.1 Co-ordinate storage of hazardous materials with Departmental Representative and abide by internal requirements for labelling and storage of materials and wastes.

.2 Store and handle hazardous materials and wastes in accordance with applicable federal and provincial laws, regulations, codes, and guidelines.

.3 Store and handle flammable and combustible materials in accordance with National Fire Code of Canada requirements.

.4 Keep no more than 45 litres of flammable and combustible liquids such as gasoline, kerosene and naphtha for ready use.

.1 Store flammable and combustible liquids in approved safety cans bearing the Underwriters' Laboratory of Canada or Factory Mutual seal of approval.

.2 Storage of quantities of flammable and combustible liquids exceeding 45 litres for work purposes requires the written approval of the Departmental Representative.

.5 Transfer of flammable and combustible liquids is prohibited within buildings.

.6 Transfer flammable and combustible liquids away from open flames or heat-producing devices.

.7 Solvents or cleaning agents must be non-flammable or have flash point above 38 degrees C.

.8 Store flammable and combustible waste liquids for disposal in approved containers located in safe, ventilated area. Keep quantities to minimum.

.9 Observe smoking regulations, smoking is prohibited in areas where hazardous materials are stored, used, or handled.

.10 Storage requirements for quantities of hazardous materials and wastes in excess of 5 kg for solids, and 5 litres for liquids:

.1 Store hazardous materials and wastes in closed and sealed containers.

.2 Label containers of hazardous materials and wastes in accordance with WHMIS.

.3 Store hazardous materials and wastes in containers compatible with that material or waste.

.4 Segregate incompatible materials and wastes.

.5 Ensure that different hazardous materials or hazardous wastes are stored in separate containers.

.6 Store hazardous materials and wastes in secure storage area with controlled access.

.7 Maintain clear egress from storage area.

.8 Store hazardous materials and wastes in location that will prevent them from spilling into environment.

.9 Have appropriate emergency spill response equipment available near storage area, including personal protective equipment.

.10 Maintain inventory of hazardous materials and wastes, including product name, quantity, and date when storage began.

.4 Ensure personnel have been trained in accordance with Workplace Hazardous Materials Information System (WHMIS) requirements.

.5 Report spills or accidents immediately to Departmental Representative. Submit a written spill report to Departmental Representative within 24 hours of incident.

.6 When hazardous waste is generated on site:

.1 Co-ordinate transportation and disposal with Departmental Representative.

.2 Comply with applicable federal, provincial and municipal laws and regulations for generators of hazardous waste.

.3 Use licensed carrier authorized by provincial authorities to accept subject material.

.4 Before shipping material obtain written notice from intended hazardous waste treatment or disposal facility it will accept material and it is licensed to accept this material.

.5 Label containers with legible, visible safety marks as prescribed by federal and provincial regulations.

.6 Only trained personnel handle, offer for transport or transport dangerous goods.

.7 Provide photocopy of shipping documents and waste manifests to Departmental Representative.

.8 Track receipt of completed manifest from consignee after shipping dangerous goods. Provide photocopy of completed manifest to Departmental Representative.

.9 Report discharge, emission, or escape of hazardous materials immediately to Departmental Representative and appropriate provincial authority. Take reasonable measures to control release.

Part 2 Products

2.1 MATERIALS

.1 Only bring on site quantity of hazardous materials required to perform work.

.2 Maintain MSDSs in proximity to where materials are being used. Communicate this location to personnel who may have contact with hazardous materials.

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 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 and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.1 Dispose of hazardous waste materials in accordance with applicable federal and provincial acts, regulations, and guidelines.

.2 Recycle hazardous wastes for which there is approved, cost effective recycling process available.

.3 Send hazardous wastes to authorized hazardous waste disposal or treatment facilities.

.4 Burning, diluting, or mixing hazardous wastes for purpose of disposal is prohibited.

.5 Disposal of hazardous materials in waterways, storm or sanitary sewers, or in municipal solid waste landfills is prohibited.

.6 Dispose of hazardous wastes in timely fashion in accordance with applicable provincial regulations.

.7 Minimize generation of hazardous waste to maximum extent practicable. Take necessary precautions to avoid mixing clean and contaminated wastes.

.8 Identify and evaluate recycling and reclamation options as alternatives to land disposal, such as:

.1 Hazardous wastes recycled in manner constituting disposal.

.2 Hazardous waste burned for energy recovery.

.3 Lead-acid battery recycling.

.4 Hazardous wastes with economically recoverable precious metals.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 03 20 00 – Concrete Reinforcing

.2 Section 03 30 00 - Cast-in-place concrete

1.2 REFERENCES

.1 Canadian Standards Association (CSA International)

- .1 CSA-A23.1/A23.2, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
- .2 CSA-O86S1, Supplement No. 1 to CAN/CSA-O86-01, Engineering Design in Wood
- .3 CSA O121, Douglas fir Plywood
- .4 CSA O151, Canadian Softwood Plywood
- .5 CSA O153, Poplar Plywood
- .6 CSA O437, Standards for OSB and Waferboard
- .7 CSA S269.1, Falsework for Construction Purposes
- .8 CAN/CSA-S269.3, Concrete Formwork, National Standard of Canada

.2 Council of Forest Industries of British Columbia (COFI)

- .1 COFI Exterior Plywood for Concrete Formwork

1.3 SUBMITTALS

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

.2 Submit to Departmental Representative current Material Safety Data Sheet (MSDS) required in accordance with section 02 81 01 – Hazardous Materials

.3 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.

.4 Comply with CSA S269.1, for falsework drawings

.5 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 WASTE MANAGEMENT DISPOSAL

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

.2 Place materials defined as hazardous or toxic waste in designated containers.

.3 Ensure emptied containers are sealed and stored safely for disposal away from children.

.4 Use sealers, form release and stripping agents that are non-toxic, biodegradable and have zero or low VOC's.

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-O86.1, CSA O437 Series or CSA-O153.

.2 The formwork must be in conformity with standard CAN3-A23.1-M77. Respect the maximum tolerances for the finished concrete works as mentioned in standard 347 of ACI « Recommended Practice for Concrete Formwork ».

.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 of diameter in concrete surface.

.2 For Architectural concrete, use snap ties complete with plastic cones and light grey concrete plugs.

.3 Form liner:

.1 Plywood: Douglas fir to CSA O121, Canadian Softwood Plywood to CSA O151 or Poplar to CSA O153.

.2 Waferboard: to CAN3-O188.0.

.4 Form release agent: non-toxic, biodegradable and low VOC.

.5 Form stripping agent: colourless mineral oil, non-toxic, biodegradable, low VOC, free of kerosene, with viscosity between 70 and 110 Saybolt Universal (15 to 24 mm^2/s) at 40®C, flashpoint minimum 150°C, open cup.

.6 Sealant: use appropriate material.

Part 3 Execution

3.1 FABRICATION AND ERECTION

.1 Verify lines, levels and centres before proceeding with formwork 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 Do not place concrete slabs or footings on frozen ground.

.5 Provide site drainage to prevent washout of soil supporting mud sills and shores.

.6 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.

.7 Use 25 mm chamfer strips on external corners and/or 25mm fillets at interior corners, joints, unless specified otherwise.

.8 Form chases, slots, openings, drips, recesses, expansion and control joints as indicated.

.9 Build in anchors, sleeves, and other inserts required to accommodate Work specified in other sections. Assure that all anchors and inserts will not protrude beyond surfaces designated to receive applied finishes, including painting.

.10 Clean formwork in accordance with CAN/CSA-A23.1/A23.2, before placing concrete.

3.2 REMOVAL AND RESHORING

.1 Leave formwork in place for following minimum periods of time after placing concrete.

.1 3 days for walls and sides of beams.

.2 3 days for columns.

.3 28 days for beam soffits, slabs, decks and other structural members, or 7 days when replaced immediately with adequate shoring to standard specified for falsework.

.4 3 days for footings and abutments.

.2 Periods of time indicated above represent a number of cumulative hours, days or fractions of days, not necessarily consecutive, during which the ambient temperature is maintained at at least 10 °

.3 Remove formwork when concrete has reached 80% of its design strength or minimum period noted above, whichever comes later, and replace immediately with adequate reshoring. Obtaining the compressive strength of 80% must be verified by tests on samples

cured under the same conditions as the concrete of the structure in order to authorize the stripping of the formwork.

.4 Provide necessary reshoring of members where early removal of forms may be required or where members may be subjected to additional loads during construction as required.

.5 Space reshoring in each principal direction at not more than 3000 mm apart.

.6 Reuse formwork and falsework subject to requirements of CSA-A23.1/A23.2.

3.3 **TEMPERATURE OF FORMS**

.1 At the time of the pouring of concrete, maintain formwork at a temperature greater than 5 ° C.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 74 21 - Construction/Demolition Waste Management and Disposal

.2 Section 03 10 00 - Concrete Forming and Accessories

1.2 REFERENCES

.1 American Society for Testing and Materials (ASTM)

- .1 ASTM C109/C109M, Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2 in. or 50-mm Cube Specimens)
- .2 ASTM C260, Specification for Air-Entraining Admixtures for Concrete
- .3 ASTM C309, Specification for Liquid Membrane-Forming Compounds for Curing Concrete
- .4 ASTM C494M, Specification for Chemical Admixtures for Concrete
- .5 ASTM C827, Test Method for Change in Height at Early Ages of Cylindrical Specimens from Cementitious Mixtures
- .6 ASTM D1752, Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction

.2 Canadian Standards Association (CSA)

- .1 CAN/CSA-A3000, Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
  - .1 CSA-A3001, Cementitious Materials for Use in Concrete.
- .2 CAN/CSA-A23.1/A23.2, Concrete Materials and Methods of Concrete Construction / Methods of Test for Concrete
- .3 CAN/CSA G40.20/G40.21, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
- .4 CAN/CSA-G164, Hot Dip Galvanizing of Irregularly Shaped Articles.

.3 Government of Quebec, Department of Transports

- .1 Cahier des charges et devis généraux (CCDG)

1.3 ABBREVIATIONS AND ACRONYMS:

.1 Cement: hydraulic cement or blended hydraulic cement (*b - where b denotes blended).

- .1 Type GU or GUb - General use cement.
- .2 Type MS or MSb - Moderate sulphate-resistant cement.
- .3 Type MH or MHb - Moderate heat of hydration cement.
- .4 Type HE or Heb - High early-strength cement.

.5 Type LH or LHb - Low heat of hydration cement.

.6 Type HS or HSb - High sulphate-resistant cement.

.2 Fly ash:

.1 Type F - with CaO content less than 8%.

.2 Type CI - with CaO content ranging from 8 to 20%.

.3 Type CH - with CaO greater than 20%.

.4 Type S - granulated blast-furnace slag.

1.4 SUBMITTALS PROCEDURES

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

.2 Minimum 4 week prior to starting concrete work, submit to Departmental Representative manufacturer's test data and certification by qualified independent inspection and testing laboratory that following materials will meet specified requirements:

.1 Portland cement

.1 Blended hydraulic cement

.2 Supplementary cementing materials

.3 Grout

.4 Admixtures

.5 Aggregates

.6 Water

.7 Waterstops

.8 Waterstop joints

.9 Joint filler

.3 Provide certification that mix proportions selected will produce concrete of quality, yield and strength as specified in concrete mixes, and will comply with CAN/CSA-A23.1/A23.2.

.4 Provide certification that plant, equipment, and materials to be used in concrete comply with requirements of CAN/CSA-A23.1/A23.2.

.5 Provide results and reports for review by Departmental Representative and do not proceed without written approval when deviations from mix design or parameters are found.

.6 Concrete pours: provide accurate records of poured concrete items indicating date and location of pour, quality, air temperature and test samples taken as described in PART 3 - FIELD QUALITY CONTROL.

.7 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 CERTIFICATES

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

.2 Minimum 1 week prior to starting concrete work submit to Departmental Representative manufacturer's test data and certification by qualified independent inspection and testing laboratory that following materials will meet specified requirements:

- .1 Portland cement
- .2 Blended hydraulic cement
- .3 Synthetic fibers
- .4 Supplementary cementing materials
- .5 Grout
- .6 Admixtures
- .7 Aggregates
- .8 Water
- .9 Waterstops
- .10 Waterstop joints
- .11 Joint filler

.3 Provide certification that mix proportions selected will produce concrete of quality, yield and strength as specified in concrete mixes, and will comply with CAN/CSA-A23.1/A23.2.

.4 Provide certification that plant, equipment, and materials to be used in concrete comply with requirements of CAN/CSA-A23.1/A23.2.

1.6 QUALITY ASSURANCE

.1 Minimum 1 week prior to starting concrete work, submit proposed quality control procedures in accordance with Section 01 45 00 - Quality Control for Departmental Representative's approval for following items:

- .1 Cold weather concrete
- .2 Curing
- .3 Finishes
- .4 Formwork removal
- .5 Joints

1.7 WASTE MANAGEMENT AND DISPOSAL

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

.2 Designate a cleaning area for tools to limit water use and runoff.

.3 Carefully coordinate the specified concrete work with weather conditions.

.4 Ensure emptied containers are sealed and stored safely for disposal away from children.

.5 Prevent plasticizers, water-reducing agents and air-entraining agents from entering drinking water supplies or streams. Using appropriate safety precautions, collect liquid or solidify liquid with an inert, non-combustible material and remove for disposal. Dispose of all waste in accordance with applicable local, provincial and national regulations.

.6 Choose least harmful, appropriate cleaning method which will perform adequately.

Part 2 Products

2.1 MATERIALS

.1 Portland cement, for general purposes, GU-b SF, to CAN/CSA-A3001.

.2 Cementitious hydraulic slag: to CAN/CSA-A23.1/A23.2.

.3 Water: to CAN/CSA-A23.1/A23.2.

.4 Aggregates: to CAN/CSA-A23.1/A23.2. Coarse aggregates to be normal density.

.5 Synthetic fibers : to ASTM C 1116, 4.1.3, Type III.

.6 Air entraining admixture: to ASTM C260.

.7 Chemical admixtures: to ASTM C494. Departmental Representative to approve accelerating or set retarding admixtures during cold and hot weather placing.

.8 Concrete retarders: to ASTM C494 water based, low VOC. Do not allow moisture of any kind to come in contact with the retarder film.

.9 Premoulded joint fillers:

.1 Bituminous impregnated fibre board: to ASTM D1751.

.10 Elastomere cement for joints: cement made of polyurethane, from Sikaflex 1c or equivalent.

.11 Steel, Anchors: to CAN/CSA-G40.20/G40.21 Grade 350W or as indicated.

2.2 MIXES

.1 Proportion concrete in accordance with CAN/CSA-A23.1/A23.2. Mix proportions as specified below.

.1 Concrete:

.1 GU-b SF Portland cement.

.2 Minimal compressive strength at 28 days: 35 Mpa.

.3 Class of exposure: C-1.

.4 14 mm nominal size coarse aggregate.

.5 Slump at time and point of discharge: 80 mm to 125 mm.

.6 Air content 5% to 8 %.

.7 Synthetic fibers: to manufacturer's instructions

.8 Chemical admixtures: water reducing strength increasing, set retarding, accelerating, strength increasing, air entraining, super plasticizers, following admixtures in accordance with ASTM C 494.

.9 Weight per cubic meter: 2 400 kg/m^3 minimum.

.10 Water/Cement content: lower than 0.40.

.11 Minimum cement content: 375 kg/m^3 of concrete.

.2 Ensure materials to be used in concrete mix have been submitted for testing.

.3 Co-ordinate construction methods with Departmental Representative to suit concrete mix proportions and parameters.

.4 Identify and report immediately to Departmental Representative when concrete mix design and parameters pose anticipated problems or deficiencies related to construction.

.2 Not with standing specification CAN/CSA-A23.1 et CAN/CSA-A23.4, the Contractor will provide the Departmental Representative with a mixing formula for the concrete. This formula is only a guide prepared according the aggregates supplied by the Contractor and submitted to the designated laboratory for all processes such as grading, washing, etc. It is the Contractor's responsibility to use similar aggregates and to handle them so as to obtain good results. It is also Contractor's responsibility to set the mixing guide formula depending on possible variations of aggregates or other concrete components.

2.3 CURING

.1 Storage and curing procedures shall meet the requirements of CAN/CSA-A23.1.

Part 3 Execution

3.1 PREPARATION

.1 Obtain Departmental Representative's approval before placing concrete. Provide 24 hours notice prior to placing of concrete.

.2 Pumping of concrete is permitted only after approval of equipment and mix.

.3 Ensure reinforcement and inserts are not disturbed during concrete placement.

.4 Prior to placing of concrete obtain Departmental Representative's approval of proposed method for protection of concrete during placing and curing.

.5 Maintain accurate records of poured concrete items to indicate precisely date, location of pour, quality, air temperature and test samples taken.

.6 The Contractor shall coordinate his pouring schedule in such a manner that uninterrupted pours are made for better uniformity of work.

.7 Do not place load upon new concrete until authorized by Departmental Representative.

.8 During concreting operations:

.1 Development of cold joints not allowed.

.2 Ensure concrete delivery and handling facilitates placing with minimum of re-handling, and without damage to existing structure or Work.

3.2 CONSTRUCTION

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

.2 Sleeves and inserts

.1 No sleeves, ducts, pipes or other openings shall pass through joists, beams, column capitals or columns, except where indicated or approved by Departmental Representative.

.2 Where approved by Departmental Representative, set sleeves, ties, pipe hangers and other inserts and openings as indicated or specified elsewhere. Sleeves and openings greater than 100 x 100 mm not indicated must be approved by Departmental Representative.

.3 Do not eliminate or displace reinforcement to accommodate hardware. If inserts cannot be located as specified, obtain approval of modifications from Departmental Representative before placing of concrete.

.4 Check locations and sizes of sleeves and openings shown on drawings.

.3 Anchor bolts

.1 Set anchor bolts to templates under supervision of appropriate trade prior to placing concrete.

.4 Finishing

.1 Finish concrete in accordance with CAN/CSA-A23.1/A23.2.

.2 Use procedures noted in CAN/CSA-A23.1/A23.2 to remove excess bleed water. Ensure surface is not damaged.

.3 Use curing compounds compatible with applied finish on concrete surfaces.

.4 For concrete slab, execute a broom or brush groovy finish.

3.3 TOLERANCE

.1 Concrete finishing tolerance in accordance with CAN/CSA-A23.1/A23.2

3.4 FIELD QUALITY CONTROL

.1 Inspection and testing of concrete and concrete materials will be carried out by a Testing Agencies designated by Departmental Representative in accordance with CAN/CSA-A23.1/A23.2 and Section 01 45 00 - Quality Control.

.2 Departmental Representative will pay for costs of tests as specified in Section 01 29 83 - Payment Procedures: Testing Laboratory Services.

.3 Departmental Representative will take additional test cylinders during cold weather concreting. Cure cylinders on job site under same conditions as concrete which they represent.

.4 Non-destructive Methods for Testing Concrete shall be in accordance with CAN/CSA-A23.1/A23.2.

.5 Inspection or testing by Departmental Representative will not augment or replace Contractor quality control nor relieve him of his contractual responsibility.

.6 Ensure test results are distributed for discussion at pre-pouring concrete meeting between testing agency and Departmental Representative.

.7 Test of suitability: The Contractor will have to carry out a test of suitability on the site according to RCC placement procedures and concreting conditions planned during work. A pouring will have to be carried out at least 10 days before the beginning of the concrete work. Minimal volume will have to be 1 cubic meters. This test is done to check if the requirements are respected.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures

.2 Section 01 61 00 – Common product requirements

.3 Section 01 74 21 - Construction/Demolition Waste Management and Disposal

1.2 REFERENCES

.1 American Society for Testing and Materials International, (ASTM)

- .1 ASTM A6/A6M, Standard Specification for general Requirements for Rolled Structural Steel Bars, Plater, Shapes and Sheet Piling.
- .2 ASTM A53, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Steamless.
- .3 ASTM A 36/A36M, Specification for Structural Steel.
- .4 ASTM A123/123M, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Production
- .5 ASTM A307, Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.
- .6 ASTM A563, Standard Specification for Carbon and Alloy Steel Nuts
- .7 ASTM A780, reparations of damaged galvanized coating.

.2 American National Standards Institute, (ANSI)

- .1 AWS D3.6M, Specification for underwater welding.

.3 Canadian Standards Association (CSA International)

- .1 CAN/CSA G40.20/G40.21, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
- .2 CAN/CSA-G164-M, Hot Dip Galvanizing of Irregularly Shaped Articles.
- .3 CAN/CSA-S16-S1, Limit States Design of Steel Structures.
- .4 CSA-S136.S1, Limit States Design of Steel Structures (Specification for the Design of Cold-Formed Steel Structural Members).
- .5 CSA-S136.1, Commentary on CSA Standard S136.
- .6 CSA W47.1, Certification of Companies for Fusion Welding of Steel Structures.
- .7 CSA W48, Filler Metals and Allied Materials for Metal Arc Welding.
- .8 CSA W59, Welded Steel Construction (Metal Arc Welding) [Metric].

.4 Canadian Institute of Steel Construction

- .1 Handbook of steel construction

.5 American Welding Society (AWS)

- .1 ANSI/AWS D3.6, Specification for underwater welding

.6 The Master Painters Institute (MPI)

.1 Architectural Painting Specification Manual.

1.3 DESIGN REQUIREMENTS

.1 Design details and connections in accordance with requirements of CAN/CSA-S16 and CAN/CSA-S136 with CSA-S136.1 to resist forces, moments, shears and allow for movements indicated.

.2 Shear connections:

.1 Select framed beam shear connections from an industry accepted publication such as "Handbook of the Canadian Institute of Steel Construction" when connection for shear only (standard connection) is required.

.2 Select or design connections to support reaction from maximum uniformly distributed load that can be safely supported by beam in bending, provided no point loads act on beam, when shears are not indicated.

.3 Submit sketches and design calculations stamped and signed by qualified professional engineer licensed in Province of Quebec, Canada for non standard connections.

1.4 SUBMITTALS PROCEDURES

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

.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for sections, plates, pipe, tubing, bolts and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Submit one copy of WHMIS MSDS in accordance with Section 01 35 29 - Health and Safety Requirements and 01 35 43 - Environmental Procedures.

.1 For finishes, coatings, primers, and paints applied on site: indicate VOC concentration in g/L.

.3 Shop Drawings:

.1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Québec, Canada.

.2 Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.

.3 Submit shop drawings including fabrication and erection documents and materials list in accordance with Section 01 33 00 - Submittal Procedures.

.4 Erection drawings: indicate details and information necessary for assembly and erection purposes including:

.1 Description of Work methods.

.2 Sequence of erection.

.3 Type of equipment used in erection.

.4 Temporary walers.

.4 Ensure Fabricator drawings showing designed assemblies, components and connections are stamped and signed by qualified professional engineer licensed in the province of Quebec, Canada.

1.5 QUALITY ASSURANCE

.1 Submit 2 copies of mill test reports 4 weeks prior to fabrication of structural steel.

.1 Mill test reports to show chemical and physical properties and other details of steel to be incorporated in project.

.2 Provide mill test reports certified by metallurgists qualified to practice in province of Quebec, Canada.

.2 Provide structural steel Fabricator's affidavit stating that materials and products used in fabrication conform to applicable material and products standards specified and indicated.

1.6 QUALITY CONTROL

.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 The fabrication work will be inspected by a 10% sampling method

.1 All welds must be made as shown on manufacturing drawings and in accordance with CSA W59-03 Welded Steel Construction (arc welding). Compliance with welding procedures when carrying out the work will be checked. Welding will be inspected under section 12 of the CSA W59-03. The weld bead to be inspected visually and by magnetic particles.

.3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.

.4 Provide work areas and safe access roads for testing on site, as required by the testing agency and as authorized by the Departmental Representative.

.5 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.

1.7 TRANSPORTING, STORING AND HANDLING

.1 Packing, Shipping, Handling and Unloading:

.1 Deliver, store, handle and protect materials in accordance with Section 01 61 00 – Basic Product Requirements.

.2 Handle steel pieces so as to avoid permanent deformations.

.3 Handle with care steel pieces that have received a special coating.

.2 Storage and Protection:

.1 Cover exposed stainless steel surfaces with pressure sensitive heavy protection paper or apply strippable plastic coating, before shipping to job site.

.2 Leave protective covering in place until final cleaning of building. Provide instructions for removal of protective covering.

.3 Store materials in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.4 Replace defective or damaged materials with new.

1.8 WASTE MANAGEMENT AND DISPOSAL

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

Part 2 Products

2.1 MATERIALS

.1 Structural steel: to CAN/CSA-G40.20/G40.21 Grade 350W or as indicated.

.2 Welding materials: to CSA W59 and certified by Canadian Welding Bureau.

.3 Welding electrodes: to CSA W48 et AWS D3.6 Series.

.4 Anchor bolts: to ASTM A307 or ASTMA325, type 1, as indicated

.5 Nuts and washers: following asked bolts, to develop full strength. Lubricated in accordance with ASTM A563.

.6 Grout: Non-shrink, non-metallic aggregate, fluid and with a compressive strength of 15 MPa after 24 hours.

2.2 WELDS

.1 All welds except the submarine welds, should comply with standard CAN/CSA W59.

.2 Submarine welds should comply with standard ANSI/AWS D3.65. Welds must be of type B.

.3 Before welding work, obtain the authorization of the wharf's keeper.

2.3 FABRICATION

.1 Fabricate structural steel in accordance with CAN/CSA-S16, CAN/CSA-S136 and in accordance with reviewed shop drawings.

.2 Bolts Tightening: use tightening torque in accordance with CISC.

.3 Continuously seal members by continuous welds where indicated. Grind smooth.

.4 Exposed welds should be continuous throughout the length of the joint; they must be filed down or ground to present a smooth, even surface.

.5 Where possible, works to be adjusted and built in shop, and delivered ready to fix.

2.4 SHOP PAINTING

.1 All steel components to be hot-dip galvanized to CAN/CSA G164, not painted.

.2 Only steel plates of forms to repair concrete columns to be shop painted.

2.5 STEEL COMPONENTS

.1 Plates, steel bars and handle to CAN/CSA- G40.20/G40.21, Grade 300W.

.2 Welding: in accordance with CSA W59.

.3 Welding electrodes: to CSA W48 Series.

.4 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.

.5 Components to be hot-dip galvanized.

Part 3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for metal fabrications installation in accordance with manufacturer's written instructions.

.1 Visually inspect substrate in presence of Departmental Representative.

.2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.

.3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 GENERAL

.1 Structural steel work: in accordance with CAN/CSA-S16 and CAN/CSA-S136.

.2 Supply validation letter of steel manufacturer and welders on outdoor sites as proof of certification by the Canadian Welding Bureau, Division 2.1.

.3 Welding: in accordance with CSA W59.

.4 Companies to be certified under Division 2 of CSA W47.1 for fusion welding of steel structures and/or CSA W55.3 for resistance welding of structural components.

3.3 INSTALLATION

.1 Surface welding: welding work must be done in conformity with the requirements of the standards indicated to article 1.3 of this section, and with the dimensional tolerances specified in the standards of this article. The welders must be qualified according to Canadian Welding Bureau for the type of welding corresponding to work carried out.

.2 Finish : Carefully finish the various parts of work. Cutting, carving, boring and machining shall be done with care and precision. Finished components must meet prescribed alignment requirements and be free from torsion, curves, open joints, sharp corners and ridges.

.3 On-site additional splices: obtain Departmental Representative's approval before making on-site additional splices (to facilitate transport and assembly of elements). No additional cost for expenses incurred by the additional splices done on-site.

.4 All the adjacent welding with galvanized parts will receive a coat of protective paint with high zinc content.

3.4 CONNECTION TO EXISTING WORK

.1 Verify dimensions and condition of existing work, report discrepancies and potential problem areas to Departmental Representative for direction before commencing fabrication.

3.5 MARKING

.1 Mark materials in accordance with CAN/CSA G40.20/G40.21. Do not use die stamping. If steel is to be left in unpainted condition, place marking at locations not visible from exterior after erection.

.2 Match marking: shop mark bearing assemblies and splices for fit and match.

3.6 ERECTION

.1 Erect structural steel, as indicated and in accordance with CAN/CSA-S16, CAN/CSA-S136 and in accordance with reviewed erection drawings.

.2 Do welding work in accordance with CSA W59 & AWS D3.6. unless specified otherwise.

.3 Field cutting or altering structural members, to approval of Departmental Representative.

.4 Erect steel accurately, level, plumb straight, line up and adjusted with precision, joints and crossing well fixed.

.5 Provide and install suitable anchorings approved by Departmental Representative such as studs, tie-rods, anchor bolts, expansion bolts, etc.

.6 Visible fastening to be compatible with crossed or fixed to material.

.7 Hand items over for casting into concrete or building into masonry to appropriate trades together with setting templates.

.8 Clean with mechanical brush and touch up coat protection to bolts, rivets, welds or burned or scratched surfaces at completion of erection.

.9 Touch-up galvanized surfaces with zinc rich primer where burned by field welding.

.10 Continuously seal members by continuous welds where indicated. Grind smooth.

.11 Allowable tolerances for bolt holes:

.1 Matching holes for bolts to register so that a gauge 2 mm less than diameter than hole will pass freely through assembled members at right angles to such members.

.2 Finish holes not more than 2 mm in diameter larger than diameter of bolt unless otherwise specified by Departmental Representative.

.3 Centre-to-centre distance between 2 holes of a group of holes to vary but not more than 1 mm from dimensioned distance between such holes.

.4 Centre-to-centre distance between any group of holes to vary not more than following:

Centre-to-centre (m)	Difference (±) (mm)
Less than 10	1
10 to 20	2
20 to 30	3

3.7 FIELD QUALITY CONTROL

.1 Inspection and testing of materials and workmanship will be carried out by a testing laboratory designated by Departmental Representative.

.2 Provide safe access and working areas for testing on site, as required by testing agency and as authorized by Departmental Representative.

.3 Submit test reports to Departmental Representative within 2 weeks of completion of inspection.

.4 Departmental Representative will pay costs of tests as specified in Section 01 29 83 - Payment Procedures: Testing Laboratory Services.

3.8 CONTROL AND INSPECTION

.1 Provide written description of welding procedure for approval by the Departmental Representative two (2) weeks before the beginning of the work.

.2 The Departmental Representative can proceed any time with non-destructive testing of the welds made on the working-site. The costs of these tests will be paid for by the Department.

.3 Contractor will give access and facilitate the welds examination by the Departmental Representative at no extra cost for the Department.

.4 If the welds examination reveals any defect, it should be repaired and re-inspected by the Departmental Representative. The Contractor will have to change his welding procedure so as to eliminate all failures noted. The repairs and the second inspection will be paid for by the Contractor.

.5 Allow the Departmental Representative to proceed with inspection either at the fabrication, erection and/or assembly plant.

.6 Report to Departmental Representative any failure in the material or any assembly problem on the working-site. In the occurrence of any repairs, they should be made at the Departmental Representative utmost satisfaction.

.7 The submarine welders will be qualified by the Departmental Representative. The cost of the coupons and testing will be paid for by the Contractor. The welders that will not be qualified will not be authorized to proceed.

3.9 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 and 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.

3.10 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by metal fabrications installation.

END OF SECTION