



**Fisheries and Oceans
Canada**



Small Craft Harbours



New Richmond Sud – Gaspesia Region

Development of multi-species artificial reefs

Project n° F3731-230039

Specifications for bid

June 2023

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DRAWINGS

SHEET	FILENAME	TITLE
00 / 01	PPB23-9209-M01-00	PRESENTATION PAGE, DRAWING LIST
01 / 01	PPB23-9202-M01-01	GENERAL LAYOUT AND DETAILS OF REEFS

Part 1 General

1.1 WORK COVERED BY CONTRACT DOCUMENTS

- .1 This list of works is not necessarily complete and does not relieve the Contractor of its responsibility to perform any other work, change or modification required, to complete the work under this project to the satisfaction of the Departmental Representative.
- .2 The multi-species artificial reef work in the New Richmond area (named site: New Richmond Sud) includes, but is not limited to, the following work:
 - .1 Transporting DFO-provided concrete artificial reefs from Gascons fishing harbor to the work site.
 - .2 Placement of 160 artificial concrete reefs:
 - .1 Rake and grade seabed prior to placement of artificial concrete reefs.
 - .2 Perform placement using floating equipment suitable for the water depths to be reached.
 - .3 Perform the work with the participation of professional divers.
 - .3 Conduct GPS survey to accurately locate concrete artificial reefs.
 - .1 Ensure that the 160 artificial concrete reefs are installed according to the coordinates provided on the plan.
 - .4 Following the Contractor's survey which confirms the position of the artificial reefs and the acceptance of the work by the Departmental Representative, the Departmental Representative will perform a complete bathymetry survey of the work site.
 - .5 No later than 30 days after completion of the work, prepare a post work report including:
 - .1 Description of work method, photographs and video during transportation and installation of the artificial concrete reefs;
 - .2 Survey report

1.2 SITE INSPECTION

- .1 Prior to submitting his bid, the Contractor shall inspect the Work site and obtain all necessary information concerning the nature and scope of the Work and all conditions which may affect the performance of the Work.
- .2 The Contractor acknowledges that he has ascertained the nature and location of the Work, the general and local conditions, particularly the weather or climatic conditions, the movement of the water, the tidal levels, the physical conditions of the site of the Work, the nature of the soil and seabed, and any other circumstances which may affect the conditions of performance of the Contract and the value of the Work.

1.3 OWNER OCCUPANCY

- .1 The Contractor shall take the necessary steps to obtain the necessary permits to use the marine structure for loading and installation of the artificial reefs. The work shall be

carried out in coordination with local authorities to coordinate the Contractor's planned activities and work with other users of the site.

- .2 Co-ordinate use of premises under direction of local authorities and supply Departmental Representative with permit, authorisation and other document.
- .3 Work with local authorities in scheduling operations to minimize conflict and to facilitate the use of the premises by all users.
- .4 Find additional storage areas necessary to work performance under the terms of this contract and pay the cost.
- .5 Once the work is completed, existing structures must be in the same or better condition than before the work began.

1.4 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING

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

1.5 WORK SEQUENCE

- .1 Construct Work in stages, and if possible, as directed by Departmental Representative.
- .2 Coordinate Progress Schedule with Departmental Representative.
 - .1 **All Work shall be completed no later than November 15th, 2023.**

1.6 CONTINUITY OF SERVICES

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

1.7 DOCUMENTS

- .1 Maintain at work site, one copy of each document mentioned above:
 - .1 Contract drawings
 - .2 Specifications
 - .3 Addenda
 - .4 Change orders
 - .5 Other modifications to Contract
 - .6 Copy of approved work schedule
 - .7 Health and safety plan and other safety related documents
 - .8 CNWA approbation
 - .9 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 16 - Construction Progress Schedules - Bar (Gantt) Charts
- .2 Section 01 35 43 - Environmental Procedures

1.2 USE OF SITE AND FACILITIES

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

1.3 MODIFICATIONS, REPAIRS OR ADDITIONS TO EXISTING STRUCTURES

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

1.4 SPECIAL REQUIREMENTS

- .1 **All Work shall be completed no later than November 15th, 2023.**
- .2 Noisy work shall be performed Monday through Friday between 7 am and 18 pm.
- .3 Develop and submit construction progress schedule in accordance with Section 01 32 16 – Construction Progress Schedules – Bar (Gantt) Charts.
- .4 Contractor shall comply with environmental limitation mentioned in Section 01 35 43 – Environmental Procedures.
- .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 local authorities, 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.
- .9 Restriction dates for the artificial reefs installation are the following:
 - .1 **Environmental restriction : From May 26th to September 15th.**
- .10 The transportation of materials on public roads up to the site will be from Monday to Friday inclusive, unless otherwise specified by the appropriate authorities. Transportation will be prohibited Saturdays, Sundays and holidays.
- .11 The transportation of materials, through the municipality, will begin at 6:00 a.m. and end at 6:00 PM. The transportation outside of these hours will not be permitted. The

Contractor will be required to obtain a written authorization from the municipality to make transportation outside of these hours.

- .12 Work generating a high noise level will be from Monday to Friday inclusive 6:00 a.m. to 6:00 PM. The work will be prohibited outside of these hours without obtaining a written authorization from the municipality

1.5 SAFETY

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

1.6 NAVIGATION INTERFERENCE

- .1 It is of Contractor's responsibility to get all information necessary regarding ship movements and fishing activities taking place in the area affected by its shipping and construction activities. 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 The Contractor shall, on an ongoing basis and precise, report all travel by its floating equipment to Marine Communications and Traffic Services of the Canadian Coast Guard (MCTS Québec 418-648-7459). It will also report to MCTS hours beginnings and for all periods of construction.
- .3 The Contractor will also notify the Departmental representative of all travel by its floating equipment so that notices to shipping are issued.
- .4 If it happened that the Contractor's equipment causes an obstruction to navigation, the Contractor shall:
 - .1 Advise the departmental representative and the Marine Communications and Traffic Services (MCTS) in Quebec City (Tel: 418-648-7459).
 - .2 Proceed immediately to the removal of the equipment at its own expense
 - .3 If the contractor was missing in this obligation, the departmental representative will be responsible for the removal of the barrier and all expenses incurred will be charged to the Contractor.
- .5 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.

1.7 SPECIAL REQUIREMENTS RELATING TO FLOATING EQUIPMENT

- .1 Invasive species:
 - .1 For equipment that have been cleaned and were stored on land just before the inception of work, the Contractor needs only obliged to provide, in writing to the Departmental Representative only needs to provide, in writing, a list of this equipment, their storage location and the proposed launch date. Departmental Representative must be able to verify whether the equipment was clean and actually stored on land before work is undertaken.
 - .2 Where equipment is already in the water, the Contractor shall demonstrate at own cost that the floating equipment is free of invasive allogenic species at time of mobilization to the work site. Just before mobilization, the Contractor shall submit a written inspection report certifying that the equipment is free of invasive species. The report shall be prepared by a qualified biologist, specialised in the

identification of benthic fauna; the sampling shall be carried out by divers. The report shall include, without limitation, a list of the equipment inspected (tugboats, scows, etc.), date and place of inspection, a short description of the sampling method and identification process, a list of the samples taken, the results in table form, and a statement concerning the presence or lack of such species. Report to include photographs and bear the signature of a qualified biologist before it is submitted to the Departmental Representative with the other contract documents required, before the equipment is mobilised on the work site.

- .3 Should the inspection report confirm the presence of invasive species, the Contractor shall replace the equipment or proceed at own cost to a thorough cleaning of the equipment. A description of the cleaning measures shall be included in a new post-cleaning inspection report, along with all the abovementioned information.
- .4 The Departmental Representative reserves the right at any time to obtain a second opinion. Where invasive species are observed, the Contractor shall interrupt the activities and proceed at own cost to the cleaning of the equipment concerned and follow the above-mentioned procedure.

- .1 To learn more about aquatic invasive species and their identification:
<https://www.dfo-mpo.gc.ca/species-especes/ais-eae/index-fra.html>

.2 Interference to navigation:

- .1 Whether work is carried out by means of marine equipment (floating) or from land and work is performed below the high water mark, the Contractor shall seek and obtain all required information concerning boat traffic and fishing activities in the construction area. Design and execute the work in such way as to prevent interfering with commercial and fishing activities or limiting the access to harbour facilities by either land or sea.
- .2 The Contractor shall accurately and on regular basis report all travels (movement, relocation) of his floating equipment to the Canadian Coast Guard Marine Communications and Traffic Services Centre (Québec City MCTS 418 648-7459). As well, the Contractor shall inform MCTS of all the construction periods start and finish times.
- .3 In addition, the Contractor shall report all travels of his floating equipment to the Departmental Representative.

.3 Floating equipment::

- .1 The Contractor shall provide equipment of sufficient size and capacity to perform the Work.
- .2 For each floating equipment to be used in the work, a compliance certificate shall be supplied to Departmental Representative before work is undertaken (cf. Section 01 35 29.06 – Health and Safety Requirements).
- .3 All equipment must be maintained in good repair and seaworthy condition throughout the duration of the Contract. Any required maintenance and repair work shall be completed promptly. By their dimensions, characteristics and draft, the equipment shall be appropriate to complete the work.
- .4 Mark floating equipment with lights/daymarks in accordance with the Canada Shipping Act.
- .5 Maintain radio watch on board.

- .6 Keep all signals and lights required to be installed on all floating equipment required for the work in accordance with the Collision Regulations and the Navigation Safety Regulations. All equipment required for the work shall be properly identified and/or visible at all times.

1.8 REQUIREMENTS RELATING TO THE NAVIGABLE WATERS PROTECTION ACT

- .1 The Contractor shall ensure the issuance of Notices to Shipping (NOTSHIP), minimum forty-eight hours (48 h) before the start of maritime works and provide update on the operations or when aids to navigation fail, to the attention of:
 - .1 Garde côtière canadienne, Bureau des Avis à la navigation - Centre SCTM Prescott, courriel : NAVWARN.MCTSPrescott@innav.gc.ca , phone : 613-925-0666, fax : 613- 925-4519.
- .2 For the purpose of issuing notices to shipping, provide the following information:
 - .1 Description and identification of the ships, the vessels used, equipment, work procedures, as well as work schedules and milestones;
 - .2 The characteristics of navigational aids as well as installation and removal dates of permanent or temporary aids to navigation;
 - .3 Any unforeseen situation, changes to the approved plans or requirements, which may affect the safety of mariners;
 - .4 Inform of any relocation or defective temporary navigation aids.
- .3 The Contractor shall comply with the Navigable Waters Works Regulations: “No person shall permit any tools, equipment, vehicles, temporary structures or parts thereof used or maintained for the purpose of building or placing a work in a navigable water to remain in such water after the completion of the project.”
- .4 Upon completion of the work, the Contractor shall :
 - .1 Remove all temporary equipment and structures to restore the streambed to its original condition with the original slopes, bathymetry and grading.
 - .2 Notify the Departmental Representative of the date of completion of the work.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 MEASUREMENT METHOD

- .1 The Contractor shall provide, within five (5) days after receiving an acceptance notice for the contract, a list of equipment and the hourly rates for each of the equipment available for the works.
- .2 The Contractor shall, within five (5) days after receiving an acceptance notice for the contract, provide a list of hourly rates for his staff.
- .3 The lump sum price and unit prices will include, but not limited to, leasing, equipment installation, equipment, tools, labour, administrative costs, profit, funding, expenditure for work not specifically defined either in the plan, or specifications or any other tender documents, but considered necessary so as to conform to best practices.
- .4 All work described in this specifications, or presented in the plans, or necessary for the completion of all the work specified herein, but not defined as a separate item requiring a fixed rate or unit payment, will be considered as directly or indirectly linked to the overall purpose of the contract and no separate payment will be made for any of these works; the cost of any work that is directly or indirectly linked to the aim of this contract must however be included in the unit prices quoted in the tender.
- .5 The method used to measure labour, tools or materials for the contract will be as follows:
- .6 Measuring method for items will be:
 - .1 Item n°.1 Site organization
 - .1 Item will be measured as a lump sum price and includes all items listed in division 1, also items that cannot be assigned to another measurement item.
 - .2 This item shall include all the necessary work and the means to ensure continuity of services for fishers.
 - .3 This item also includes all works indicated on Drawing and Specs and that that there are not included in other item. It includes:
 - .1 Loading of reefs at Gascons Fishing Harbour, transportation and unloading at the work site.
 - .4 Site organization during work will be paid proportionately with monthly progress payments.
 - .2 Item n°.2 – Reef installation
 - .1 This item will be measured at a lump sum price and includes, but is not limited to, all work necessary for the development of multi-species artificial reefs in the area of New Richmond Sud.
 - .2 This item includes, but is not limited to, the development of storage areas at the loading site, surveying to locate the reef development area, installation work, post survey and site clean-up.
 - .3 This item also includes the use of divers to ensure that the reefs are installed as specified in the plans and specifications.

- .7 The global lump sum that contractor had to furnish at item SA-03 of bid forms shall be detailed and furnished to Departmental Representative within 2 weeks after notice of acceptance of offer.

END OF SECTION

Part 1 General

1.1 ADMINISTRATIVE

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

1.2 PRECONSTRUCTION MEETING

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

1.3 PROGRESS MEETINGS

- .1 Schedule meetings that will be held during the course of the work.
- .2 Contractor, major subcontractors involved in work and Departmental Representative are to be in attendance.
- .3 Notify the parties at least 5 days prior to the meetings.
- .4 The Departmental Representative will take minutes of these meetings and provide them to the participants and to affected parties absent from the meeting within 5 days of each meeting.
- .5 Agenda to include the following:
 - .1 Review, approval of minutes of previous meeting.

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

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

1.1 DEFINITIONS

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

1.2 REQUIREMENTS

- .1 **All Work shall be completed no later than November 15th, 2023.**
- .2 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .3 The overall plan must provide for the realization of the work according to the prescribed milestones, within the agreed time.
- .4 Limit activity durations to maximum of approximately 10 working days, to allow for progress reporting.
- .5 Ensure that it is understood that Award of Contract or time of beginning, Certificate of substantial performance and Final Certificate as defined times of completion are of essence of this contract.

1.3 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 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 Milestones of the project are the interim targets set out in the schedule.
- .2 Works consist, without limitations, to:
 - .1 Equipment mobilisation
 - .2 Transport concrete artificial reefs currently at Gascons Harbour
 - .3 Survey for reef placement
 - .4 Placement of the reefs
 - .5 Verification and correction work
 - .6 Completion of the survey at work completion.

1.5 MASTER PLAN

- .1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar (GANTT) Chart.

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

1.6 PROJECT SCHEDULE

- .1 Develop a timetable for execution detailed from the master plan.
- .2 The time frame detailed must at least understand the steps for the following activities.
 - .1 Award
 - .2 Shop drawings, samples
 - .3 Permits
 - .4 Mobilization
 - .5 Reefs transportation
 - .6 Survey
 - .7 Reefs installation
 - .8 Verification Survey
 - .9 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

1.8 PROJECT MEETINGS

- .1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule

are those with projected start or completion dates later than current approved dates shown on baseline schedule.

- .2 Weather related delays with their remedial measures will be discussed and negotiated.

Part 2 Products

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

Part 3 Execution

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

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 45 00 - Quality control

1.2 ADMINISTRATIVE

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

1.3 SHOP DRAWINGS AND PRODUCT DATA

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

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

- .9 Single line and schematic diagrams.
- .10 Relationship to adjacent work.
- .12 After Departmental Representative's review, distribute copies.
- .13 Submit 3 copies of shop drawings for each requirement requested in specification Sections.
- .14 Submit 3 copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
- .15 Submit 3 copies of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
 - .2 Testing must have been within 3 years of date of contract award for project.
- .16 Submit three (3) copies of certificates for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
 - .2 Certificates must be dated after award of project contract complete with project name.
- .17 Submit three (3) copies of manufacturer's instructions for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Pre-printed documents describing the method of installation of products, materials and systems, including special notices and MSDS indicating the impedances, the risks as well as the safety measures to be put in place.
- .18 Submit three (3) copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by the Departmental Representative.
- .19 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .20 Submit three (3) copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by the Departmental Representative.
- .21 Delete information not applicable to project.
- .22 Supplement standard information to provide details applicable to project.
- .23 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .24 Review of shop drawings is for sole purpose of ascertaining conformance with general concept.

- .1 This review shall not mean that Departmental Representative approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting all requirements of construction and Contract Documents.
- .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of all sub-trades.

1.4 PHOTOGRAPHS SHOWING WORK PROGRESS

- .1 The Contractor shall take photographs and video of the progress of the Work throughout the construction. The number of photographs and the number of viewpoints will be specified at the start-up meeting. However, the Contractor shall consider in his bid that photographic survey and video taking requires significant effort, particularly with respect to underwater photography using divers. See Section 35 21 20 - Artificial Reefs for more details.
- .2 Photographs shall be taken at each stage of the project, including but not limited to:
 - .1 Out of water:
 - .1 Photographs and video of handling and transport to site.
 - .2 Photographs during the launch.
 - .2 Underwater:
 - .1 Photographs and video, before, during, and after reef launch.
 - .2 Photographs and video during survey and verification.
 - .3 Photographs and video after work.
- .3 Submit a copy of colour digital photography in .jpg format, standard resolution as directed by the Departmental Representative.
- .4 Project identification: name and number of project and date of exposure indicated.
- .5 Frequency of photographic documentation: as directed by the Departmental Representative.

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 SURVEY DURING CONSTRUCTION

- .1 See Section 35 21 20

1.7 POST-CONSTRUCTION BATHYMETRIC SURVEY

- .1 See Section 35 21 20.

1.8 POST-CONSTRUCTION REPORT

- .1 30 days after completion of the work, the Contractor shall prepare a post-construction report. The completion of the post-construction report shall be supervised by the Departmental Representative.
- .2 The final content of the report will be specified at the start-up meeting. However, at a minimum, the report shall include the following elements
 - .1 Description, including photographs, videos and methodology of the transportation and installation of the reefs on the seabed;
 - .2 Description, including photographs and videos of the seabed before, during and after the work;
 - .3 Surveys including reef coordinates.
 - .4 Final project schedule.

1.9 GANTT CHART

- .1 No later than 5:00 p.m. every Friday, the Contractor shall submit to the Departmental Representative, a GANTT chart for the following week's work schedule.
- .2 The GANTT chart shall include, at a minimum, the list of tasks to be performed, start and finish dates, projected duration, predecessors and any other information relevant to the progress of the project.

1.10 MISCELLANEOUS DOCUMENTS AND SITE REPORTS

- .1 As indicated in Section 01 14 00 - Work Restrictions, provide a list of floating equipment and a copy of the written inspection report certifying that it is free of invasive species prior to commencement of work.
- .2 As indicated in Section 01 14 00 - Work Restrictions, transmit 48 hours prior to commencement of work the issuance of a Notice to Shipping, and provide a copy of this notice to the Departmental Representative.
- .3 As indicated in Section 01 35 29 - Health and Safety, transmit at the frequency indicated the documents related to health and safety at the work site.
- .4 As indicated in Section 01 35 29 - Health and Safety, forward letters of compliance issued by Transport Canada for the approval of all craft (transport, barges, lifeboats, etc.) used by the Contractor to the Departmental Representative prior to mobilization 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 REFERENCES

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

1.2 SUBMITTALS

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

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

1.3 FILING OF NOTICE

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.
- .2 Contractor shall be responsible and assume the Principal Contractor role for each work zone location and not the entire complex. Contractor shall provide a written acknowledgement of this responsibility with 3 weeks of contract award.
 - .1 Contractor to submit written acknowledgement to CNESST and Departmental Representative along with Fermeture de Chantier Notice.
- .3 The Contractor shall assume the role of the Principal Contractor at all times within the confines of the job site and at all other locations where the Contractor is required to perform work on this project. The Contractor shall acknowledge the responsibility of the Principal Contractor and identify himself as such in the notice of commencement of work sent to the CNESST.
- .4 Contractor shall agree to install proper site separation and identification in order to maintain time and space at all times throughout life of project.

1.4 HAZARDS ASSESSMENT

- .1 The contractor must identify all hazards inherent in each task to be carried out at the site.
- .2 The contractor must plan and organize work so as to eliminate hazards at source or promote mutual protection so that reliance on individual protective gear can be kept to a minimum. Where individual protection against falling is required, workers shall use

safety harness that meets standard Can - CSA- Z-259.10-06. Safety belts shall not be used as protection against falling.

- .3 Equipment, tools and protective gear which cannot be installed, fitted or used without compromising the health or safety of workers or the public shall be deemed inadequate for the work to be executed.
- .4 All mechanical equipment shall be inspected before delivery to the site. Before using any mechanical equipment, submit to Departmental Representative a certificate of compliance signed by a qualified mechanic. Whenever he suspects a defect or accident risk, Departmental Representative may at any time order the immediate shut-down of equipment and require a new inspection by a specialist of his own choosing.

1.5 MEETINGS

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

1.6 LEGAL AND REGULATORY REQUIREMENTS

- .1 Comply with all legislation, regulations and standards applicable to the site and its related activities.
- .2 Comply with specified standards and regulations to ensure safe operations at site containing hazardous or toxic materials.
- .3 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 2,0 metres and water depth near 8.0 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.

1.8 GENERAL REQUIREMENTS

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.

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

- .4 Ensure that a rescue craft is moored, in the water and available for every shift. When craft is accessible by land, it can be used by several work locations provided that distance between each work location and craft is less than 100 metres.
- .5 Ensure that craft is equipped with a motor powerful enough to travel upstream.
- .6 Ensure that craft has required characteristics to carry individuals likely to participate in a rescue operation.
- .7 Ensure that craft is available for personnel at all times in case of emergency.
- .8 Ensure that a qualified individual is available to operate rescue equipment. Individual must be qualified to operate recreational craft, depending on length of craft used.
- .9 Establish written rescue procedures containing the information below and ensure that all personnel concerned by these procedures have received the necessary training and information to apply them.
 - .1 Complete descriptions of the procedures, including responsibilities of individuals permitted access to place of work.
 - .2 Location of rescue equipment.
- .10 When place of work is a landing wharf, dock, jetty, pier or other similar structure, install a ladder with at least two rungs below surface of water on front of structure every 60 metres. This measure also applies to construction projects. In this case, a temporary (or portable) ladder can be used and removed at end of work if Owner does not have basic facilities. But we have to notify the owner that site is not in accordance with the Canada Labour Code, Part 2.
- .7 For diving work, conform to the following requirements:
 - .1 Compliance with all the requirements of the Regulation respecting occupational health and safety (S-2.1, r.19.1), more specifically section XXVI.I, entitled underwater Work. Compliance, furthermore, with the latest editions of standards CAN/CSA Z275.2 – Occupational Safety Code for Diving Operations, CAN/CSA Z275.1 – Hyperbaric Chambers and CAN/CSA Z275.4 – Competency Standard for Diving Operations. In the event of conflict between these requirements, the most stringent requirement shall apply.
 - .2 In addition to the above, in cases where construction work is involved, compliance with the Safety Code for the Construction Industry (S-2.1, r.4).
 - .3 Before starting the work, submit to the Departmental Representative the following documents, as per the Regulation respecting occupational health and safety:
 - .1 The professional diving training certificate of each member of the dive team OR a document recognizing the skills of those persons in accordance with the Competency Standard for Diving Operations, CAN/CSA Z275.4-02, as per section 312.8 of the Regulation;
 - .2 The workplace first-aid training certificate of each member of the dive team;
 - .3 The medical certificate of each member of the dive team;

- .4 For each dive included in this contract, a dive plan containing the following information, in addition to that required under the Regulation respecting occupational health and safety:
 - .1 The thermal protection to be used;
 - .2 The repetitive dive factor;
 - .3 The no-decompression limit;
 - .4 The circumstances in which the dive must be terminated;
 - .5 The procedures to be followed to ensure that machinery, equipment or devices that could create a hazard have been locked out;
 - .6 The decompression table to be used, as required;
- .5 A notification confirming that a system for communicating with the medical assistance service is available at the diving location at all times.
- .4 The Contractor shall take into account the following specific characteristics of the work site, and adapt its dive plan accordingly.
 - .1 Dive into navigable waters
 - .2 See following site for definitions:
http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=3&file=/S_2_1/S2_1R13.HTM art.312.1
- .5 If the dive is located into the followings area, submit to the Departmental Representative a confirmation that authority have been contacted:
 - .1 Into navigable waters;
 - .2 Inside harbour.
- .6 If the dive station is more than 2 metres above the water, provide to the Departmental Representative:
 - .1 A drawing of the equipment used to transport the worker through the air-water interface, if a device other than a stage is used for that purpose; and
 - .2 A drawing of the device used to hoist the stage or other device, unless that device is a crane or boom truck.
- .7 If the dive is carried out from a vessel, provide to the Departmental Representative the following documents:
 - .1 Proof of qualification of the vessel operator; and
 - .2 The vessel's certificate of compliance from Transport Canada.
- .8 Before starting the work, carry out an underwater rescue simulation at the site, as required under section 312.31 of the Regulation respecting occupational health and safety.
- .9 On a daily basis, complete and provide to the Departmental Representative a checklist confirming the presence and condition of the equipment required at the dive site as per the dive plan.
- .10 Ensure that all other documents required under section XXVI of the Regulation respecting occupational health and safety are available at the site at all times (diving logbook, diver's logbook, etc.).

- .8 In addition to the prevention program, during the course of the Work, the Contractor shall develop and submit to the Departmental Representative a specific written procedure for any work involving high risk of accidents (e.g. demolition procedures, special installation procedures, lifting plans, confined space entry procedures, electrical shutdown procedures, etc.) or as requested by the Departmental Representative.
- .9 The Contractor shall plan and organize the Work in such a way as to encourage the elimination of hazards at the source or collective protection and thereby minimize the use of personal protective equipment.
- .10 Equipment, tools or protective devices that cannot be installed or used without compromising the health and safety of workers or the public shall be deemed inadequate for the work to be performed.
- .11 All mechanical equipment (examples: personnel or material hoists, excavators, concrete pumps, concrete saws, but not limited to) shall be inspected prior to delivery to the job site. The Contractor shall obtain and keep on site a certificate of inspection signed by a mechanic and dated within one week prior to arrival of each piece of equipment at the job site and shall provide it to the Departmental Representative upon request.
- .12 Ensure that all inspections (daily, periodic, annual, etc.) of personnel or material lifting equipment required by the applicable standards are completed and be prepared to provide a copy of the inspection certificates upon request by the Departmental Representative.
- .13 The Departmental Representative may at any time, if he/she suspects a defect or a risk of accident, order the immediate shutdown of any equipment and require an inspection by a specialist of his/her choice.
- .14 The Departmental Representative shall be consulted on the location of gas cylinders and tanks on the job site.

1.9 RESPONSIBILITIES

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

delay with any order or correction notice issued by the Commission des normes, de l'équité, de la santé et de la sécurité du travail.

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

1.10 COMMUNICATIONS AND POSTING

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

1.11 CONFORMITY REQUIREMENTS

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

1.12 UNFORESEEN CIRCUMSTANCES

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

1.13 DOCUMENTS DISPLAYING

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

- .2 As a minimum, the following information and documents shall be posted in a location readily accessible to workers:
 - .1 Notice of the opening of the work site;
 - .2 Identification of the Principal Contractor;
 - .3 Company HSW policy;
 - .4 Worksite specific prevention program;
 - .5 Emergency plan;
 - .6 Minutes of worksite committee meetings;
 - .7 Names of representatives on the worksite committee;
 - .8 Names of first aid attendants;
 - .9 Intervention and correction reports issued by the CNESST.

1.14 NON-COMPLIANCES FIXING

- .1 When a specified in the quote and no identifiable source of danger during the preliminary inspection of the site appears by the fact or during the execution of the work, the contractor must immediately stop work, implement temporary protection measures for workers and the public, and prevent the departmental representative orally and in writing. Subsequently, the contractor shall make the necessary changes to the prevention program so that the work can resume safely.
- .2 Immediately take the necessary steps to correct situations deemed non-compliant, in terms of health and safety, by the competent authority or by the departmental representative.
- .3 Provide to the departmental representative a written report measures taken to correct the situation in the event of non-compliance in health and security.
- .4 The representative of the Department may order the stop work if the contractor does not have the necessary corrections with regard to the non-compliant health and safety conditions considered.

1.15 INSPECTION OF SITE AND CORRECTION OF HAZARDOUS SITUATIONS

- .1 Inspect the work site and complete the site inspection sheet at least once a week.
- .2 Immediately take all necessary measures to correct any lapses from legislative or regulatory requirements and any hazards identified by a government inspector, by the Departmental Representative, by the site safety and health coordinator or during routine inspections.
- .3 Submit to Departmental Representative written confirmation of all measures taken to correct lapses and hazardous situations.
- .4 Give the safety officer or, where there is no safety officer, the person assigned to safety and health responsibilities, full authority to order interruption and resuming of work as and when deemed necessary or desirable in the interests of safety and health. This person should always act so that the safety and health of the public and site workers and environmental protection take precedence over cost and scheduling considerations.

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

1.16 WORK ADJACENT TO WATERWAYS

- .1 For all work performed near a body of water (including overwater work, work on a dock, work along a watercourse, etc.), the Contractor shall comply with the requirements of the following paragraphs in addition to the requirements of the Safety Code for Construction Work.
- .2 The Contractor shall plan his work to ensure that safety measures are in place to prevent any worker from falling into the water. The use of these safety measures shall be given preference over the use of life jackets.
- .3 Provide the following documentation to the departmental representative prior to the commencement of work:
 - .1 Description of the waterways;
 - .2 Description of the work being performed in the vicinity of the waterways;
 - .3 On-water transportation plan appropriate to the work and the characteristics of the waterways;
 - .4 Salvage plan appropriate to the work and the characteristics of the waterways;
- .4 Each of the documents listed above shall contain, as a minimum, the information required in Section 11 of the Safety Code for Construction.
- .5 If it is possible that all or part of the Work will be performed during the winter months, the safety measures included in the above required documents shall be adapted accordingly.
- .6 The Contractor shall forward to the Departmental Representative the training certification required in Section 11.2 of the Construction Safety Code for the following persons:
 - .1 The person designated to prepare the documents required in the preceding paragraph; and
 - .2 Each person in charge of the transportation or salvage operations
- .7 If the rescue plan calls for the use of a boat, the Contractor shall provide the Departmental Representative with the Transport Canada card or certificate of competency of the rescue responders for the Work.
- .8 The Contractor shall include in his weekly inspection schedule the devices required in sections 11.4 and 11.5 of the Safety Code for Construction.
- .9 Ensure that a lifeboat, moored and in the water, is available at each location where a worker may fall into the water. However, a boat may serve multiple locations on the same site provided the distance between each location and the boat is less than 30 m.
- .10 Where the work site is a pier, basin, jetty, wharf or other similar structure, a ladder with at least two (2) rungs below the surface of the water shall be provided at the front of the structure every 60m.
- .11 Compressed gas cylinders shall be lifted using a specially designed basket.

1.17 BLASTING

.1 s/o

1.18 CARTOUCHES DEVICES

.1 s/o

1.19 WORK STOPS

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

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 DEFINITIONS

- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets.
 2. Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29 - Health and Safety Requirements.
- .3 Prior to the start of construction activities, submit to the Departmental Representative for review and approval, an environmental protection plan with actions to be presented at a level of detail that is consistent with the environmental issues and with the construction works to be carried out;
- .4 **The environmental protection plan must include the following:**
 - .1 Name of persons responsible for ensuring compliance with the plan;
 - .2 Name and qualifications of persons responsible for training site personnel;
 - .3 A description of the training program for staff assigned to environmental protection;
 - .4 Traffic control plans, including measures to reduce erosion of temporary roadbeds by construction vehicle traffic, particularly in wet weather.
 - .5 The emergency plan in the event of a spill must include the procedures to be implemented, the instructions to be observed, the list of stakeholders including their phone numbers and reports to be produced in the event of an unforeseeable spill of a regulated substance.

1.3 EMERGENCY AND INCIDENT PREVENTION MEASURES

- .1 Contractor shall ensure that a recovery kit is permanently present on site, throughout the period of the work, to facilitate the intervention in the event of accidental spillage (sorbents, waterproof containers, etc.). The kit will include enough sorbent rolls to allow intervention across the width of the watercourse or to allow petroleum products to be confined within the perimeter of equipment when installing a floating boom;

- .2 Maintain on site and know how to use emergency equipment in the event of an accidental spill.
- .3 In the event of a spill of hydrocarbons or other hazardous materials, the Contractor will notify Departmental Representative and competent authorities.
 - .1 Recover hydrocarbons and contaminated soils and dispose of them in accordance with the legislation in force.
- .4 Contractor must ensure that equipment is in good working order and well maintained, to avoid oil, grease and fuel leaks;
- .5 Contractor must identify the risks of spillage of toxic substances that will be used or stored for the duration of the work. It must provide prevention and safety measures, as well as an emergency plan in the event of a spill;
- .6 Petroleum hydrocarbons will be handled with care, stored with care (at least 30 meters from the shore) and disposed in accordance with the regulations in force in order to prevent accidental spills into water or onto the ground;
- .7 Vehicle maintenance, refueling and storage of fuel or other hazardous materials must be done, as much as possible, at a minimum distance of 30 meters from the shore. If this distance cannot be respected, containment measures must be applied;
- .8 When refueling equipment, all measures are taken to minimize the risk of accidental spillage (stabilization of equipment and machinery prior refueling, presence of a complete response kit in the event of a petroleum product spill , etc.);
- .9 In the event of equipment breakage / accidental spillage, the appropriate emergency measures will be applied to control the situation and, if necessary, failure will be repaired immediately. The area affected and contaminated by toxic substances will be contained, cleaned and the contaminated material will be removed and transported to an authorized site via a specialized firm, in accordance with the regulations in force;
- .10 In the event of a spill of hydrocarbons or other hazardous materials, Contractor will notify Departmental Representative and the competent authorities according to the emergency plan. Immediately report the situation to the emergency service of Environment and Climate Change Canada (1-866-283-2333), Urgence Environnement du Québec (1-866-694-5454) for a land spill and the Canadian Coast Guard - maritime pollution (1 -800-363-4735), and the site supervisor. The numbers must be displayed on the site. Accidental spills must be reported to the Departmental Representative as soon as possible.
- .11 Soils or fill materials contaminated by an accidental spill must:
 - .1 be stockpiles on waterproof membrane and covered with waterproof membrane;
 - .2 be sampled according to the methods recommended in the Sampling Guide for Environmental Analysis, Booklet 5: CEHQ Soil Sampling;
 - .3 be subjected to laboratory chemical analyzes for C10 to C50 petroleum hydrocarbons, metals, polycyclic aromatic hydrocarbons (PAHs) and volatile organic compounds (VOCs);
 - .4 be managed according to the regulations in force and thus transported to an authorized site.

- .12 Water contaminated by an accidental spill must be confined in order to be characterized or taken care of directly by a specialized company which will transport it to a treatment center approved by the MELCCFP.

1.4 FIRE

- .1 Fire and waste material burning are prohibited.

1.5 DISPOSAL OF WASTES

- .1 Do not bury rubbish and waste materials on site unless approved by Departmental Representative.
- .2 Do not discharge any wastes into the aquatic environment. All accidentally introduced wastes must be removed as soon as possible.
- .3 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- .4 Grade and classify all reusable demolition materials to manage their future utilisation or disposal in compliance with all applicable environmental regulations.
- .5 All necessary installations for the use of grading and classification of reusable or disposal materials must be plan out of work site and in a safe and predetermined area.

1.6 WORK ADJACENT TO WATERWAYS

- .1 Waterways shall be kept free of excavated fill, waste material and debris.
- .2 Do not use banks or waterway beds material for borrow.
- .3 Do not dump construction material, waste or debris in waterways.
- .4 Any debris accidentally introduced into the aquatic environment must be recovered as quickly as possible.
- .5 Cleaning of equipment in the water is prohibited.
- .6 Service and refuel vehicles at least 30 m from bank.
- .7 Do not store petroleum products or any other hazardous materials less than 30 m from bank. If temporary petroleum installations are used, storage areas must be developed in accordance with the applicable regulations. Storage systems should be on sealed surfaces. A response kit in the event of accidental hydrocarbon spills must be present on site;
- .8 If for some reasons certain equipment or hazardous products, implying hazardous material handling, should stay beneath 30 m from waterways, Contractor shall submit a contingency plan to the Departmental Representative and get it approved prior to beginning of work. The plan will provide, without being limited to, details as follows:
 - .1 Designated inner limits of work area for the use of operations;
 - .2 Handled or stored hazardous products (ex. diesel, waste oils, etc.);
 - .3 Containment methods used in order to limit contamination during maintenance and refuelling of equipment and vehicles (in case of oil leakage);
 - .4 The presence of emergency equipment in case of spill near supplying zone and maintenance area.

- .5 The procedure for hazardous spill.
- .6 A list of contacts in case of hazardous spill.
- .7 If generators must be used, make sure that the fuel tank of each generator is with double walls and that it is installed on an impermeable floor with raised kerb to avoid any discharge.

1.7 POLLUTION CONTROL

- .1 Maintain temporary facilities to prevent erosion and pollution, and implemented under this contract.
- .2 Control emissions from equipment and tools to local authorities emission requirements.
- .3 When possible, stop engines of vehicles and equipment when not in use;
- .4 Prevent fine materials and other extraneous materials from contaminating air and water beyond work site.
- .5 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Indications of Departmental Representative, water the dry materials.
- .6 Minimize dust and emission of oxide fumes from motor vehicle exhaust. If necessary, the control of dust emissions from the work can be done by spraying water, containment equipment and, if necessary, another type of dust suppressant that complies with the BNQ 2410-300 standard;
- .7 Control dust on temporary roads.
- .8 Materials used shall be inert and exempt from contaminants.
- .9 Use machinery in good operating condition to avoid grease, oil or fuel leaks. Submerged equipment parts shall be clean and free of leaks.
- .10 Perform service and verifications on all machineries (excavator, crane, etc.) by a qualified mechanic 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).
- .11 Equipment will be kept in good working order, cleaned of any contaminants, and tune-ups will be made before it is brought on site. Ensure that there are no fuel, oil or grease leaks. Contractor must send to Departmental Representative a certificate of mechanical inspection carried out just before equipment delivery to work site.
- .12 Wasted oils and other contaminated wastes shall be managed in compliance with effective regulation. This included storage at site, transportation and elimination.
- .13 Any hazardous waste generated on the work site will have to be conveyed to a well-authorized disposition site by MELCCFP.
- .14 Hazardous waste storage and transport will have to be done in accordance with the regulation in force in order not to contaminate the environment.
- .15 Prior to conveying hazardous waste from work site, the Contractor shall obtain Departmental Representative authorization by showing a copy of all licenses obtained from the owners or hazardous waste disposal site authorities.

1.8 TRANSPORT OF MATERIALS

- .1 Materials may be transported on public roads to construction site from Monday to Saturday unless notified otherwise by the authorities having jurisdiction. Transport is prohibited on Sundays and public holidays.
- .2 Materials may be transported through municipalities between 7:00 a.m. and 6:00 p.m. (18h00) Transportation outside these hours will not be permitted unless specific authorization has been issued by the municipalities concerned.
- .3 Ensure proper operation of trucks used. Any trucks or other means of transport creating sound levels that Departmental Representative deems to exceed standards shall cease transporting materials or be repaired or modified to be made acceptable.
- .4 Contractor shall use adequate signalization and co-operate with municipality, Departmental Representative and other authorities having jurisdiction to minimize the impact of transportation on the daily lives of residents in area adjacent to truck route and construction site and usual activities at the commercial port.
- .5 Maintain the roads in good condition at all times and take the necessary measures to ensure they can be safely used and crossed by other users.
- .6 Truck drivers must respect the Highway Safety Code, the regulations in force concerning loading limits as well as speed limits.

1.9 PROTECTION OF THE AQUATIC ENVIRONMENT IN THE WORK AREA

- .1 The work area should be clearly defined.
- .2 Ensure workers are informed of environmental and safety measures.
- .3 Work carried out in water will not be authorized during the following dates :
 - .1 No work below the high water level of high tide (HWLHT): From May 26 to September 15.
- .4 To minimize the risk of resuspension of marine sediments, the Contractor will not be authorized to carry out work in the water when the weather is unfavorable (high agitation, strong winds, storms, etc.)
- .5 Artificial reefs should be gently deposited in the water to minimize the re-suspension of sediments. These should be clean and free of contamination.
- .6 Interventions in water with machinery must be kept to a strict minimum. No circulation on the seabed is permitted.
- .7 It is forbidden to release materials (concrete, aggregates, steel, etc.) into the aquatic environment. It will be necessary to recover all the released debris, regardless of their size and nature, and this as soon as possible.
- .8 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.
- .9 Land-based equipment storage shall be made in anytime above high tides level and as conditions described in section 1.6 – Work adjacent to waterways.
- .10 Work shall be performed when the wave height is equal to or less than 1.5 m in order to minimize the resuspension of SS, as stable manoeuvring would become more difficult with bigger waves.

- .11 The contractor shall use equipment using HF biodegradable vegetable oil type specifically designed for this type of equipment for work in or near water;
- .12 Avoid sudden movement of equipment when working in aquatic environment;
- .13 Ensure machinery is clean and free of leaks, invasive species and noxious weeds upon arrival on site and maintain it in that condition thereafter;
- .14 The risks of introducing alien or invasive species are minimized by the use of clean marine equipment stored on land before carried out work.
- .15 For equipment that has been cleaned and stored on land just prior to work, the Contractor will be required to provide, in writing, to the Departmental Representative:
 - .1 A list of this equipment;
 - .2 The storage location;
 - .3 The date of their launching;
 - .4 Departmental Representative must be able to verify that the equipment was clean and stored on land before carrying out work.
 - .5 When use of equipment already in the water, demonstrate that the floating equipment used has remained in the Estuary or the Gulf of St. Lawrence for at least the last 12 months, instead an inspection demonstrating the absence of invasive species will have to be carried out.
- .16 Cleaning, maintenance and refueling of equipment, as well as the storage of hydrocarbons and other products must be done more than 30 m from a sensitive sector or water to prevent the introduction of harmful substances;
- .17 The Contractor must clearly define the work area within which the equipment and machinery must remain at all times.

1.10 PROTECTION OF MARINE WILDLIFE IN THE WORKS SECTOR

- .1 Ensure workers are made aware and be able to spot the presence of marine mammals or leatherback turtles in the area within 200 m of the work area.
- .2 If a marine mammal or a leatherback turtle approaches within 200 m of the work area in an aquatic environment, stop the work and wait for the animal to move away more than 200 m.

1.11 NOISY WORKS

- .1 Noisy works are prohibited at night, unless absolutely necessary.
- .2 Schedule particularly noisy work during normal working hours and in accordance with municipal requirements, ie from 7:00 am to 6:00 pm;
- .3 Avoid as much as possible idling of engines;
- .4 Limit the use of the engine brake to a minimum when transporting equipment and materials;
- .5 Maintain motorized equipment in good working order (muffler and other noise reduction system).

1.12 NOTICE TO SHIPPING

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

1.13 WORK MONITORING

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

1.14 NON-COMPLIANCE NOTICE

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

Part 2 Product

2.1 NOT USED

- .1 Not used.

Part 3 Execution

3.1 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Bury rubbish and waste materials on site where directed after receipt of written approval from Departmental Representative.
- .3 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.
- .4 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

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 RELATED SECTIONS

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

1.2 INSPECTION

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

1.3 INDEPENDENT INSPECTION AGENCIES

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

1.4 ACCESS TO WORK

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

1.5 PROCEDURES

- .1 Notify appropriate agency and Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.6 REPORTS

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

1.7 TESTS AND MIX DESIGNS

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

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 45 00 - Quality Control.

1.2 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.

1.3 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.

1.4 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 STONE MATERIAL CONTROL PLAN

- .1 Not applicable.

3.3 SURVEY CONTROL, PROJECT LAYOUT AND STRUCTURE PLACEMENT SURVEYS

- .1 The Contractor is responsible for establishing and maintaining all land survey controls required to perform the work as described in Section 01 71 00 – Examination and Preparation.
- .2 The Contractor is responsible for the project location, including establishing and maintaining the survey control line, and for construction surveys necessary to perform the work required by the contract documents.
- .3 The Contractor is responsible for conducting spot-check surveys for all work performed on-site to ensure compliance with requirements. Spot-check surveys will be used to determine payment amounts and must be performed in the presence of the Departmental Representative, unless the latter determines otherwise.

3.4 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.

3.5 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 ACTION AND INFORMATIONAL SUBMITTALS

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

1.2 INSTALLATION AND REMOVAL

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

1.3 SCAFFOLDING

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

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 Before storing equipment or materials on-site, the Contractor shall obtain written authorization from local authority.

1.6 PROTECTION OF PUBLIC TRAFFIC

- .1 Comply with applicable laws, regulations and ordinances governing the movement on and use of roads on which it is necessary to perform work or to transport materials and equipment.
- .2 The Contractor shall communicate with the municipality 10 days prior to the beginning of work to make sure he comply with any regulations regarding material transports.
 - .1 The Contractor shall provide the Departmental Representative a written copy of the municipality reply.
- .3 No public thoroughfare may be closed without the written permission of *Ministère des Transports du Québec*, municipality and the Departmental Representative.
- .4 Clean the traffic lanes used by the Contractor's vehicles on a regular basis throughout the duration of the work.

1.7 PROTECTION OF PRIVATE AND PUBLIC PROPETY

- .1 Protect private and public property against any damages related to the work.
- .2 The Contractor shall be accountable for damages located inside private and publics property during works. He shall repair those damages, at his own expense, to the satisfaction of the authorities concerned, and this, before the end of the work.

1.8 WORK AREA RESERVED TO THE CONTRACTOR

- .1 Install a security perimeter, in the work area. The security perimeter will need to be put in place prior to the start of work and consists of the following:
 - .1 Security perimeter of the Contractor: consists of site closure solid and secure, resistant to wind, or any other hoarding sufficiently secure by the Departmental Representative.

1.9 ON-SITE PARKING

- .1 Parking will be permitted on site if it does not disrupt performance of Work and and the usual activities on the site. The storage area planned for the Contractor can be used for this purpose.
- .2 Respect and keep clear the access road to the site and ensure its maintenance.
- .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 Provide and maintain adequate access to project site.
- .5 Clean runways where used by Contractor's equipment.

1.10 OFFICES

- .1 If the contractor uses of floating equipment in its work (barge, boats, or other), it must provide a space for the site supervisor onboard, safely, and protected from the weather.
- .2 The site supervisor will have the opportunity to embark and disembark at the beginning and at the end of each work day.
 - .1 Boarding/deplaning must be done safely, from a dock, marina, or other marine facilities located in close proximity.
 - .2 The site supervisor will be able to have access to the boat while remaining dry and avoiding wetting their equipment.
- .3 If the Contractor does not use of floating equipment, the Contractor must provide a construction trailer on land in the vicinity of the site of the work with direct perspective on the work area.
- .4 Set up an office broken down, heated to a temperature of 22 degrees Celsius, equipped with lighting fixtures to ensure a level of lighting of 750 lux and of sufficient size to allow for site meetings, and provide a table for the income averaging drawings and laptops.

- .5 Provide a first aid kit is complete and identified, and stored in a location that is easy to access.
- .6 Subcontractors to provide their own offices as necessary. Direct location of these offices.
- .7 Departmental Representative's Site office.
 - .1 Provide temporary office for Departmental Representative.
 - .2 Inside dimensions minimum 3.6 m long x 3 m wide x 2.4 m high, with floor 0.3 m above grade, complete with 4 - 50% opening windows and one lockable door.
 - .3 Insulate building and provide heating system to maintain 22 degrees C inside temperature at -20 degrees C outside temperature.
 - .4 Finish inside walls and ceiling with plywood, hardboard or wallboard and paint in selected colours. Finish floor with 19 mm thick plywood.
 - .5 Install electrical lighting system to provide min 750 lx using surface mounted, shielded commercial fixtures with 10 % upward light component.
 - .6 Equip office with 1 x 2 m table, 4 chairs, one 3-drawer filing cabinet, drawing rack, coat rack and shelf.
 - .7 The Contractor shall arrange and pay for the installation of 2 telephone lines, with separate numbers, and High speed Internet service. One telephone line shall have a speaker telephone and answering machine, and the other shall have an auto-answering telephone/facsimile machine.
 - .8 Electricity, telephone calls and faxes and Internet connection shall be paid for by Contractor. Long distance calls are paid by Departmental Representative.
 - .9 Contractor shall keep water cooler, toilet, electrical supply, telephone, fax, Internet connection, HVAC and lighting systems in good running order, and shall maintain office in clean condition, throughout the duration of the Work.
 - .10 The Contractor shall maintain the road leading to the office throughout duration of Works.
 - .11 The site offices shall be located within reserved area as shown on the plans. The Contractor shall provide a suitable safety barrier around the site offices to protect the buildings and personal from his operations, and shall maintain safe access to the offices throughout duration of Works.
 - .12 If Contractor wants to use other lots adjacent to the work site, 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.
 - .13 Site offices shall be established on site prior to works.
 - .14 Maintain worksite clean.

1.11 EQUIPMENT, TOOL AND MATERIALS STORAGE

- .1 The departmental representative will not provide the warehousing of materials, equipment and tools.

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

1.12 SANITARY FACILITIES

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

1.13 CONSTRUCTION SIGNAGE

- .1 Provide and erect project sign, within three (3) weeks of notice of acceptance of order, in a location designated by Departmental Representative.
- .2 Construction sign 1.2 m x 2.4 m, of wood frame and plywood construction painted with exhibit lettering produced by a professional sign painter.
- .3 Indicate on sign, name of Owner, Contractor and Subcontractor (if applicable), of design style established by Departmental Representative.
- .4 No other signs or advertisements, other than warning signs, are permitted on site.
- .5 Provide project identification site sign comprising foundation, framing, and one 1200 x 2400 mm signboard as detailed and as described below.
 - .1 Foundations: 15 MPa concrete to CSA-A23.1 minimum 200 mm x 900 mm deep.
 - .2 Framework and battens: SPF, pressure treated minimum 89 mm x 89 mm.
 - .3 Signboard: Medium Density Overlaid Douglas fir Plywood to CSA O121.
 - .4 Paint: alkyd enamel to CAN/CGSB-1.59 over exterior alkyd primer to CAN/CGSB 1.189.
 - .5 Fasteners: hot-dip galvanized steel nails and carriage bolts.
- .6 Locate project identification sign as directed by Departmental Representative and construct as follows:
 - .1 Build concrete foundation, erect framework, and attach signboard to framing.
 - .2 Paint surfaces of signboard and framing with one coat primer and two coats enamel. Colour white on signboard face, black on other surfaces.
 - .3 Apply vinyl sign face overlay to painted signboard face in accordance with installation instruction supplied.
- .7 Direct requests for approval to erect Contractor signboard to Departmental Representative. For consideration general appearance of signboard must conform to project identification site sign. Wording in both official languages.
- .8 Signs and notices for safety and instruction in both official languages. Graphic symbols to CAN/CSA-Z321.

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

1.14 PROTECTION AND MAINTENANCE OF TRAFFIC

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

1.15 ELECTRICAL SERVICES

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

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

1.17 CLEANING

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

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL

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

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 14 00 – Work Restrictions
- .2 Section 01 52 00 – Construction Facilities

1.2 REFERENCE STANDARDS

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

1.3 INSTALLATION AND REMOVAL

- .1 Provide, set up or arrange the temporary access and protection structures necessary to allow the execution of the work as soon as possible.
- .2 Remove from site all such work after use.

1.4 GUARD RAILS AND BARRICADES

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

1.5 ACCESS TO SITE

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

1.6 FIRE ROUTES

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

1.7 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

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

1.8 PROTECTION OF WORK FINISHES

- .1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.
- .2 Provide necessary screens, covers, and hoardings.
- .3 Be responsible for damage incurred due to lack of or improper protection.

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

1.2 REFERENCES

- .1 Within text of each specifications section, reference may be made to reference standards.
- .2 Conform to reference standards, in whole or in part as specifically requested in specifications.
- .3 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.
- .4 Cost for such testing will be born Departmental Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance.

1.3 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 Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work.
- .3 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.
- .4 Should disputes arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.
- .5 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.
- .6 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.

1.4 AVAILABILITY

- .1 Concrete multi-species artificial reefs are provided by the Departmental Representative and are in inventory at the Gascons harbour.
- .2 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.

- .3 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.

1.5 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 products subject to damage from weather in weatherproof enclosures.
- .4 Store cementitious products clear of earth or concrete floors, and away from walls.
- .5 Store sheet or panel materials and lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .6 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.
- .7 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over nameplates.

1.6 TRANSPORTATION

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

1.7 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.

1.8 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.

1.9 CO-ORDINATION

- .1 Ensure co-operation of subcontractors in laying out Work. Maintain efficient and continuous supervision.
- .2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.10 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.

1.11 PROTECTION OF WORK IN PROGRESS

- .1 Do not overload any part of the wharf structure and respect the bearing capacity of each structure.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 01 32 16 – Construction Progress Schedules - Bar (Gantt) Charts

1.2 REFERENCES

- .1 Department's identification of existing survey control points and property limits.

1.3 SURVEY REFERENCE POINTS

- .1 Detailed descriptions of reference marks are available at following Internet site:
<http://www.meds-sdmm.dfo-mpo.gc.ca/isdm-gdsi/twl-mne/maps-cartes/benchmarks-reperes-fra.asp#divGoogleMaps>
- .2 All elevation indicated on plans refer to chart datum.
- .3 Tide range is generally 1.4 meter and higher high water of level tide reaches approximately + 2.2m, but the Contractors should consult tide tables published by the Department of Fisheries and Oceans in order to ascertain the effect of tides on the work. Also consider waves and wind that raise water level near structures.
- .4 Before starting the work, locate, confirm and protect control points prior to starting site work. Preserve permanent reference points during construction.
- .5 Make no changes or relocations without prior written notice to Departmental Representative.
- .6 Report to Departmental Representative when reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
- .7 Require surveyor to replace control points in accordance with original survey control.

1.4 SURVEY REQUIREMENTS

- .1 Establish permanent benchmarks on site, referenced to established benchmarks by survey control points. Record locations, with horizontal and vertical data, in Project Record Documents.
- .2 Establish lines and levels, locate and lay out, by instrumentation.
- .3 Mark site prior to Works.
- .4 The Contractor shall take on the entire responsibility for the marking out of the work and the complete execution in accordance with the location, the lines and the levels indicated.
- .5 Provide the necessary material for the marking out and the implantation.
- .6 Provide the required material such as rules and gauges to ease the work of the Departmental Representative concerning the inspection of the works.

1.5 EXISTING SERVICES

- .1 Before commencing work, establish location and extent of service lines in area of Work and notify Departmental Representative of findings.

- .2 Remove abandoned service lines within 2m of structures. Cap or otherwise seal lines at cut-off points as directed by Departmental Representative

1.6 LOCATION OF EQUIPMENT AND FIXTURES

- .1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.
- .2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.
- .3 Inform Departmental Representative of impending installation and obtain approval for actual location.
- .4 Submit field drawings to indicate relative position of various services and equipment when required Departmental Representative.

1.7 RECORDS

- .1 Maintain a complete, accurate log of control and survey work as it progresses.
- .2 On completion of foundations and major site improvements, prepare a certified survey showing dimensions, locations, angles and elevations of Work.
- .3 Record locations of maintained, re-routed and abandoned service lines.

1.8 SUBMITTALS

- .1 Submit signed certificate certifying and noting elevations and locations of completed Work that conform and do not conform with Contract Documents.

1.9 SUBSURFACE CONDITIONS

- .1 **Promptly notify Departmental Representative in writing if subsurface conditions (elevation, nature, granulometry, contamination, etc.) at Place of Work differ materially from those indicated in Contract Documents, or a reasonable assumption of probable conditions based thereon. The subsurface shall be considered to be all layers of soil from the natural deposit or backfill from previous work in place at the time of work.**
- .2 After prompt investigation, should Departmental Representative determine that conditions do differ materially; instructions will be issued for changes in Work as provided in Changes and Change Orders.

Part 2 Products

2.1 NOT USED

- .1 Not used.

Part 3 Execution

3.1 NOT USED

- .1 Not used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 01 32 16 – Construction Progress Schedules - Bar (Gantt) Charts.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit written request in advance of cutting or alteration which affects:
 - .1 Structural integrity of elements of project.

1.3 MATERIALS

- .1 Required for original installation.
- .2 Change in Materials: Submit request for substitution in accordance with Section 01 33 00 - Submittal Procedures.

1.4 PREPARATION

- .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- .2 After uncovering, inspect conditions affecting performance of Work.
- .3 Beginning of cutting or patching means acceptance of existing conditions.
- .4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.
- .5 Provide protection from elements for areas which are to be exposed by uncovering work; maintain excavations free of water.

1.5 EXÉCUTION DES TRAVAUX

- .1 Execute cutting, fitting, and patching including excavation and fill, to complete Work.
- .2 Fit several parts together, to integrate with other Work.
- .3 Uncover Work to install ill-timed Work.
- .4 Remove and replace defective and non-conforming Work.
- .5 Restore work with new products in accordance with requirements of Contract Documents.
- .6 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.

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 77 00 - Closeout Procedures

1.2 WORK SITE CLEANLINESS

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

1.3 FINAL CLEANING

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

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

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Acceptance of Work Procedures:
 - .1 Contractor's Inspection: Contractor: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .1 Notify Departmental Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
 - .2 Request for Departmental Representative inspection.
 - .2 Departmental Representative Inspection:
 - .1 Departmental Representative and Contractor to inspect Work and identify defects and deficiencies.
 - .2 Contractor to correct Work as directed.
 - .3 Completion Tasks: submit written certificates that tasks have been performed as follows:
 - .1 Work: completed and inspected for compliance with Contract Documents.
 - .2 Defects: corrected and deficiencies completed.
 - .3 Work: complete and ready for final inspection.
 - .4 Final Inspection:
 - .1 When completion tasks are done, request final inspection of Work by Departmental Representative, and contractor
 - .2 When Work incomplete according to Departmental Representative, complete outstanding items and request re-inspection.
 - .5 Declaration of Substantial Performance: when Departmental Representative considers deficiencies and defects corrected and requirements of Contract substantially performed, make application for Certificate of Substantial Performance.
 - .6 Commencement of Lien and Warranty Periods: date of Owner's acceptance of submitted declaration of Substantial Performance to be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.
 - .7 Final Payment:
 - .1 When Departmental Representative considers final deficiencies and defects corrected and requirements of Contract met, make application for final payment.

.2 When Work deemed incomplete by Departmental Representative,
complete outstanding items and request re-inspection.

.8 Payment of Holdback: after issuance of Certificate of Substantial Performance of
Work, submit application for payment of holdback amount in accordance with
contractual agreement.

1.3 FINAL CLEANING

.1 Clean works

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

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 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

- .1 The Contractor must submit the following documents as soon as possible after the notification of acceptance of the offer:
 - .1 Methodology and equipment for surveying the leveling and positioning of artificial reefs,
 - .2 Equipment and methodology for setting up artificial reefs,
 - .3 Any other relevant documents.
- .2 The Contractor must submit a schedule, in the form of a GANTT chart as soon as possible after the notice of acceptance of the offer, indicating at least the following activities:
 - .1 Transport of artificial reefs to the site
 - .2 Site survey/survey
 - .3 Installation of artificial reefs.
 - .4 Final inspection.
 - .5 Filing of final report.

Part 2 Products

2.1 MATERIALS

- .1 Artificial reefs are hollow trapezoidal concrete blocks providing a surface for colonization by algae, molluscs and other wildlife species as well as shelter for crustaceans. Each module has seven (7) round holes whose diameter varies from 100 to 200mm and two (2) trapezoidal entries made on the two opposite sides of the module. Plans for type II modules are shown on the drawings. The artificial reefs are provided to the Contractor by the Ministry. The reefs have anchors (stainless steel or galvanized), of sufficient diameter to allow the lifting of the reefs.
- .2 The Contractor shall provide for the manufacture of reef identification plates and their installation prior to launching. Artificial reefs will have two (2) identification plates, one (1) attached to each of the two (2) “U” anchors.
 - .1 The rigid nylon identification plate:
 - .1 Brightly colored (yellow, red, royal blue, etc.)
 - .2 Length: 89mm
 - .3 Width: 57mm
 - .4 Font Size: 32mm
 - .5 Lettered: 3mm
 - .6 Opening: 25mm diameter

Part 3 Execution

3.1 GENERAL SEQUENCE OF WORK

- .1 As part of this project, the work must be done in the following sequence:
 - .1 Transport of artificial reefs to the site:
 - .2 Installation of identification plates on each of the reefs.
 - .3 Delimitation of the installation area and the location of each artificial reef using a surveyor.
 - .4 Placement of reefs according to the coordinates and orientation provided on the drawings.
 - .5 Continuous inspection and monitoring during work with divers and surveyors.
 - .6 Bathymetry after work.
 - .7 Preparation of the report after works.

3.2 DELIMITATION OF THE ARTIFICIAL REEF AREA USING A SURVEYOR

- .1 During the work, the contractor must delimit the work area for the installation of artificial reefs using buoys.
- .2 The contractor must first have issued a notice to shipping and obtained all required authorizations.
- .3 The installation tolerance is 300mm maximum.

3.3 PLACEMENT OF ARTIFICIAL REEFS

- .1 The bottom of the reef must be stable and plumb.
- .2 Ensure reef openings are clear and free of sand, or other debris.
- .3 Installation tolerances:
 - .1 The permissible deviations from the theoretical coordinates indicated for the artificial concrete reefs to be set up are 300mm maximum along each of the two axes.
 - .2 Artificial concrete reefs whose placement does not meet the tolerances must be repositioned appropriately at the expense of the contractor.

3.4 CONTINUOUS INSPECTION AND MONITORING DURING THE WORKS

- .1 General
 - .1 The Contractor is responsible for quality control and must establish and maintain a quality control program (QCP).
 - .2 Contractor to keep records of all quality control operations, surveys, inspections and corrective actions and submit copies to Departmental Representative.
- .2 Construction marks
 - .1 The installation of the artificial reefs (modules) must be done using a computer system capable of adequately displaying on a monitor, in real time, the diagram of the installation of the artificial reefs.

- .2 The layout plan of the artificial reefs will be provided by the Departmental Representative in DXF format.
- .3 The Contractor shall use a dual frequency GPS positioning system with RTK technology.
- .3 Control marks
 - .1 A verification of the positioning system on a known control point must be made at the beginning of each day to validate the attachment to the coordinate system used.
- .4 Verification records
 - .1 With the help of divers and a surveyor, carry out a survey compatible with Autocad software during the placement of the concrete artificial reefs. This survey must be geo-referenced with tide gauge elevation according to the leveling mark indicated on the plan and must include the following elements:
 - .1 x,y and z coordinates of the center of each reef as they are installed.
 - .2 x,y and z coordinates of the perimeter shown on the plan.
 - .2 The Contractor must perform verification readings as the work progresses to verify that the positioning of the artificial reefs is within the prescribed tolerances.
 - .3 The verification surveys must necessarily include a complete underwater inspection of each of the artificial reefs by a team of divers. This underwater inspection, which will be entirely at the expense of the Contractor, must be carried out using an audio-video system to allow live monitoring by the Departmental Representative. The underwater inspection of each of the reefs must be recorded on a USB key, or on a virtual medium which will be given to the Ministerial Representative.
 - .4 Any additional underwater inspections required to validate corrective actions that had to be taken will also be the responsibility of the Contractor.
 - .5 A photo report for each artificial reef, one (1) close-up and one (1) long-shot. On each photo the identification plate must be visible to correctly interpret the number of the artificial reef.
 - .6 All activities must be filmed by divers with a camera having a resolution of 1080 i or higher.
- .5 Equipment
 - .1 The Contractor must provide the boats, personnel and all the equipment necessary for the proper execution of the verification surveys in complete safety.
- .6 Execution
 - .1 Verification readings must be taken in the presence of the Departmental Representative.
 - .2 For each verification reading carried out, the Contractor must send a verification reading register to the Departmental Representative containing the following information:
 - .1 Verification survey location (coordinates);

- .2 date and time of reading;
- .3 weather conditions;
- .4 names of participants;
- .5 field notes;
- .3 Exact format of Verification Record Log to be approved by Departmental Representative.
- .4 Cooperate with the Departmental Representative when he does his own work verification operations.

3.5 BATHYMETRY AFTER THE WORKS

- .1 The bathymetric survey after work will be carried out by the Departmental Representative.

3.6 PREPARATION OF THE POST-WORKS REPORT

- .1 See section 01 33 00.

END OF SECTION