PART 1 - GENERAL

1.1 RELATED SECTIONS

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

1.2 DEFINITIONS

.1 Dredging: excavating, transporting and disposing of underwater materials.

.2 Class 'A' material: solid rock requiring drilling and blasting to loosen, and boulders or rock fragments of individual volumes 1.5 m^3 or more.

.3 Class 'B' material: loose or shale rock, silt, sand, quick sand, mud, shingle, gravel, clay, sand, gumbo, boulders, hardpan and debris of individual volumes less than 1.5 m^3.

.4 Obstructions: material other than class A, having individual volumes of 1.5 m^3 or more.

.5 CMPM: cubic meters place measurement. SQM: area in square metres projected horizontal. CMSM: cubic meters scow measurement.

.6 Debris: pieces of wood, wire rope, scrap steel, pieces of concrete and other waste materials.

.7 Grade: plane above which material is to be dredged.

.8 Estimated quantity:
.1 Volume of material calculated to be above grade and within specified side slopes unless otherwise specified.
.2 Areas in square metres of material calculated horizontally to exist above grade and within dredge limits, unless otherwise specified.

.9 Side slope: inclined surface or plane from subgrade at side limit of dredging area to intersect original ground line outside of side limit and to be expressed as ratio of horizontal to vertical.

.10 Chart Datum: permanently established plane from which soundings or tide heights are referenced, usually Lowest Normal Tide (LNT).

.11 Coordinates:
.1 U.T.M.: universal transverse mercator projection.
.2 M.T.M.: modified transverse mercator projection.
.3 U.T.M. or M.T.M. Coordinates: plane rectangular coordinates used in grid system in which grid network is applied to U.T.M. or M.T.M. projection. Horizontal control information as indicated.

.12 Minimum Mode: mode of operation of hydrographic survey equipment where minimum sounding over length of travel between position updates will be retained in memory. Soundings taken in this mode may be shallower than actual bottom elevations due to variations in water depths due to wave action.

.13 Matrix Block: each dredge area is presented as number of 1.2 x 3.0 m long blocks. Dependent on position of sounding, block may have 0 to 4 soundings contained within it.

.14 Least of Minimum Plan: hydrographic survey plan in which least sounding in grouping of matrix blocks is plotted.

.15 Instanteous Mode: mode of operation of hydrographic survey equipment where only sounding observed at predetermined distance interval is retained in memory.

.16 Average of Instanteous Plan: hydrographic survey plan in which average sounding in appropriate grouping of matrix blocks is plotted.

.17 Lowest Normal Tide (LNT): plane so low that tide will seldom fall below it.

.18 Cleared Area: area of dredging accepted as achieving the required grade and verified by a PWGSC survey.

1.3 REGULATORY REQUIREMENTS

.1 There are strict environmental procedures that must be followed during the Work.

.2 Comply with municipal, provincial and national codes and regulations relating to project.

.3 Mark floating equipment with lights in accordance with the provisions of the Canada Shipping Act Collision Regulations and Notices to Mariners.

1.4 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials in accordance with Section 01 74 19 - Construction/Demolition Waste Management And Disposal.

.2 Metals, wood and recyclable materials removed during the dredging activities must be diverted to appropriate recycling facilities.

1.5 SCHEDULING

.1 Submit to Departmental Representative, within 2 weeks after acceptance of bid, schedule of work including time periods during which each operation involved in Work will be undertaken. At time of submission of schedule, meet with Departmental Representative to review schedule.

.2 Adhere to schedule and take immediate action to correct any slippage by effectively

altering existing dredging operations or mobilizing other equipment. Notify Departmental Representative of corrective action to be taken.

1.6 LOCATION

.1 Work comprises dredging of area as indicated and as specified herein:
.1 Inner basin - to be dredged to elevation +4.5 m.

1.7 INTERFERENCE TO NAVIGATION

.1 Be familiar with vessel movements and fishery activities in area affected by dredging operations. Plan and execute Work in manner that will not interfere with fishing operations, marine operations and construction activities at wharf sites, or access to wharves and moorings by land or water.

.2 Departmental Representative will not be responsible for loss of time, equipment, material or any other cost related to interference with moored vessels in harbour or due to other Contractor's operations.

.3 Keep the Marine Communications and Traffic Services' Centre, Fisheries and Oceans Canada, informed of dredging operations in order that necessary Notices to Mariners will be issued.

1.8 DATUM, WATER GAUGES AND TARGETS

.1 Elevations used in this specification and contract drawings are in metres referred to Canadian Hydrographic Services Survey datum.

.2 Areas to be dredged are to be referenced to vertical bench marks for each location of dredging as indicated.

.3 Chart datum for soundings is Pointe Deck 2016 and is 10.57m above chart datum.

1.09 INSPECTION OF SITE

.1 Contractor to visit site of Work and become thoroughly familiar with extent and nature of Work and conditions affecting Work before bidding.

1.10 SITE INFORMATION

.1 Take necessary steps to become fully familiar with potential inclement weather and sea conditions in this area.

1.11 SURVEY REQUIREMENTS

.1 Provide, at own expense, survey vessel, equipment and crew to set up and maintain control for location of dredge limits and to sound areas immediately after dredging to verify that grade depth has been attained. Areas are to be sounded to provide sounding printout display of at least 2 x 2 m UTM grid to approval of Departmental Representative.

1.12 SURVEYS AND ACCEPTANCE OF WORK

.1 As soon as practical after acceptance of bid, Contractor has 7 days to accept sounding survey in contract. If any differences are found, Departmental Representative will complete new pre-dredge survey of all dredge area locations within 7 days of the request. Survey will be by electronic survey equipment sounding in instantaneous mode. Survey plan at 1:250 scale plotting average of instantaneous depths obtained in this survey will define actual pre-dredge seabed areas.

.2 No area will be dredged prior to Departmental Representative and Contractor's mutual acceptance of pre-dredge survey for that area.

.3 Post-dredge survey will be undertaken by Departmental Representative upon completion of dredging. Survey will confirm if dredging is completed as specified and whether area can be considered cleared area. Survey will be by electronic sweep equipment. Survey plan at 1:250 plotting least of minimum depths obtained in this survey will identify areas requiring reworking to obtain following elevations using least of minimum mode.

.4 Contractor to redredge as necessary to remove all material within dredge areas which is found to be above grade using the least of minimum mode elevations as specified herein.

.5 One additional survey will be undertaken at Departmental Representative's cost, for those areas not meeting acceptance criteria for dredging. All additional surveys required to clear areas will be undertaken by the Departmental Representative at Contractor's cost.

1.13 MEASUREMENT FOR PAYMENT

.1 Only material excavated above grade plane and within side slopes indicated or specified will be measured.

.2 Dredging: will be measured in cubic meters, in-place measurement CMPM, determined from existing seabed elevation established from the current sounding survey down to grade depth elevation. Quantities will be determined by a sounding survey performed by the PWGSC Survey Crew after dredging survey is completed by using electronic sounding and DPGS positioning equipment. The Departmental Representative will verify that the Contractor has performed dredging to the specified grade depth. No payment will be made for over-dredging. PWGSC will conduct an interim and final survey. The Contractor will formally request at least seven (7) days in advance that the final after-dredging survey be performed upon completion of dredging. The survey will be dependent on the weather. If the survey and inspection shows that all material has not been removed, the Contractor is to re-dredge to obtain

grade depth. The Contractor will perform a sounding survey, using a method approved by the Departmental Representative to verify that the specified dredge depth has been obtained. The Departmental Representative will then perform a third survey for final verification of dredge depth. This third sounding survey and any subsequent surveys will be at the cost of the Contractor.

.3 Obstructions.
.1 Removal of obstructions, authorized by Departmental Representative will not be measured separately for payment and will be included in the unit price of dredging.

.3 All operations in connection with field positioning of dredging equipment will not be measured separately for payment.

.4 No separate payment will be made for Contractor's survey vessel, equipment and crew or diving services.

.5 Payment will include disposal of dredge material to Pit Number 1157 located approximately 2± Km from Saint Martin's Wharf, on Vaughan Creek Road. Method of transportation must be submitted to the Departmental Representative prior to work commencing.

.6 There will be no additional payment for delays and/or downtime during periods when no dredging is permitted. Contractor should contact the Harbour Authority to determine schedules of operations.

.7 There will be no additional payment for downtime and for delays caused by vessel traffic.

.8 Removal of infilling material will not be measured for payment.

.9 Payment for mobilization and demobilization of dredging equipment will be paid under section 02 41 16.

PART 2 - PRODUCTS

2.1 DREDGING EQUIPMENT

.1 Contractor to determine required equipment necessary to dredge material specified and to dispose of dredged material in containment area.

PART 3 - EXECUTION

3.1 GENERAL

.1 Mark floating equipment with lights in accordance with the provisions of the Canada Shipping Act Collision Regulations and maintain radio watch on board.

.2 Place and maintain buoys, markers and lights required to define work and disposal areas.

.3 Lay out Work from control points and baselines established by Departmental Representative. Be responsible for accuracy of Work relative to established bench marks and baseline. Provide and maintain electronic position fixing and distance measuring equipment, laser transits and such other equipment as normally required for accurate dredging control.

.4 Establish and maintain tide boards in order that proper depth of dredging can be determined. Locate tide boards so as to be clearly visible.

.5 Establish and maintain on-land targets for location and definition of designated dredge area limits. Targets to be suitable for control of dredging operations and locating soundings. Remove targets on completion of Work.

.6 Dredge inner basin to grade depth of EL +4.5 m above LNT.

.7 Dredge side slopes to 1.5 horizontal to 1.0 vertical in Class "B" material.

.8 Remove materials above specified grade depths, within limits indicated. Material removed from below grade depth or outside specified area or side slope is not part of Work.

.9 Remove shoaling which occurs as result of Work at no expense to Canada.

.10 Remove material cast-over on surrounding area and dispose of it as dredged material. Do not cast-over material unless authorized by Departmental Representative.

.11 Remove infilling in dredge areas which occurs prior to acceptance by Departmental Representative.

.12 Immediately notify Departmental Representative upon encountering object which might be classified as obstruction. By-pass object after clearly marking its location and continue Work.

.13 No dredging will be permitted from the existing wharf.

3.2 DISPOSAL OF DREDGED MATERIAL

.1 Transportation and disposal of dredge at Pit 1157, Vaughan Creek Road, located approximately 2 Km from St Martin's Wharf.

3.3 DREDGING IN VICINITY OF STRUCTURES

.1 Do not dredge material from areas lying within 1 m of existing wharf unless authorized by Departmental Representative.

3.4 RE-DREDGING

.1 Re-dredge unsatisfactory Work and verify depths with additional sounding to approval of Departmental Representative.

3.5 CO-OPERATION AND ASSISTANCE TO DEPARTMENTAL REPRESENTATIVE

.1 Co-operate with Departmental Representative on inspection of Work and provide assistance requested.

.2 On request of Departmental Representative, furnish use of such boats, equipment, labour and materials forming ordinary and usual part of dredging plant as may be reasonably necessary to inspect and supervise Work.