PART 1 - GENERAL

1.1 DESCRIPTION

.1 This specification section includes the following:

.1 Requirements for underwater drilling/blasting for rock removal activities associated with dredging.

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 metres place measurement.

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

.7 Estimated quantity:
.1 Volume of material calculated to be above grade and within specified side slopes unless otherwise specified.

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

.9 Lowest Normal Tide (LNT): plane so low that

tide will seldom fall below it.

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

1.3 QUALIFICATIONS .1 Retain licensed explosives expert to program and supervise blasting work, to interpret recommendations of pre-blasting report, and to determine precautions, preparation and operations techniques. Specialist to have qualifications acceptable to the Departmental Representative and Municipal or Provincial Authorities. Contractor to arrange and pay for all blasting permits and insurance coverage.

1.4 BLASTING OPERATION .1 Submit to Departmental Representative and local authorities having jurisdiction for review, written proposal of operations for removal of rock by blasting.
Proposal to be submitted, for review, to Department Representative at least two (2) weeks before any blasting is to take place. Departmental review does not relieve the Contractor from any damages that result from the blasting.

.2 Indicate proposed method of carrying out work, types and quantities of explosives to be used, loading charts and drill hole patterns, type of caps, blasting techniques, blast protection measures for items such as flying rock, vibration, dust and noise control. Include details on protective measures, time of blasting and other pertinent details.

1.5 BLASTING SURVEY .1 The Contractor is responsible to visit property holders of adjacent buildings and structures to determine existing conditions

and describe blasting and monitoring operations and obtain their permission for setting up monitoring devices.

.2 Monitoring, as described in the blasting operation report will be conducted by the Contractor during entire progress of blasting operations. Submit monitoring results to Departmental Representative, if requested.

1.6 BLASTING AND VIBRATION CONTROL

.1 Reduce ground vibrations to avoid damage to structures or remaining rock mass. Specific requirements are to be determined by Contractor and must be outlined in the Contractor's Blasting Plan.

.2 Maintain complete and accurate record of drilling and blasting operations. Submit records to Departmental Representative at end of each shift.

1.7 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.

1.8 PROTECTION

.1 Prevent damage to surroundings and injury to persons. Erect fencing, post guards, sound warnings and display signs when blasting to take place.

1.9 UPLANDS ROCK REMOVAL

.1 Remove rock to allow installation of cribs as shown on the drawings.

.2 Do blasting operations in accordance with local and provincial codes and requirements of authority having jurisdiction.

.3 Use rock removal procedures to produce uniform and stable excavation surfaces. Minimize overbreak, and to avoid damage to adjacent structures.

.4 Excavate rock to horizontal surfaces not exceeding slopes indicated on drawings.

.5 Scale, pressure wash and broom clean rock surfaces which are to bond to concrete.

.6 Excavate ditches to lines and grades indicated on drawings or as otherwise directed by Departmental Representative.

.7 Remove boulders and fragments which may slide or roll into excavated areas.

.8 Correct unauthorized rock removal at no extra cost.

1.10 ROCK DISPOSAL

.1 Dispose of surplus removed rock, off site, at location acceptable to the Departmental Representative, the municipality and the Provincial regulatory Authorities.

.2 All tree, vegetation and overburden material in area of rock removal (associated with dredging activities), is to be removed and disposed off site. This includes any debris (as defined in 1.2), related to the historical fishing activities at this site, that may be present in the dredge area.

1.11 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 rock removal operations or mobilizing other equipment. Notify Departmental Representative of corrective action to be taken.

1.12 LOCATION

.1 Work comprises dredging of areas as indicated on drawings and uplands rock removal as noted on the drawings.

1.13 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 site.

.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.

1.14 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.

1.15 FLOATING PLANT

.1 Dredges or other floating plants to be employed on this Work, to be of Canadian registry, make or manufacture, or, must receive certificate of qualification from Industry Canada, Aerospace, Defence and Marine Branch and this certificate to accompany bid submission.

.2 Requests for certification in format of form PWGSC-TPSGC 2843 (06/2007) attached to the Bid and Acceptance Form to be directed to Mr. Emile Rochon, Aerospace, Defence and Marine Branch, Industry Canada, CD Howe Building - Room 733C, 235 Queen Street, Ottawa, Ontario, K1A 0H5, and to be received there not less than 14 days prior to bid closing.

1.16 SITE INFORMATION

.1 There are no previous geotechnical reports available for this site. In this regard, all dredging is to be considered Class "A" dredging.

.2 Results of most recent soundings and uplands elevations are included on the drawings. This data will be used for all calculations for quantity purposes. If the contractor wishes to perform own survey, a written notice must be submitted to the Departmental Representative (at least 7 days notice) so PWGSC can verify the sounding survey before the commencement of any work.

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

1.17 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.

1.18 SURVEYS AND ACCEPTANCE OF WORK

.1 No area will be dredged prior to Departmental Representative and Contractor's mutual acceptance of the existing sounding and topographical survey data included on the drawings.

.3 A survey will be undertaken by Departmental Representative upon completion of dredging and uplands rock removal activities. Survey will confirm if dredging and uplands rock removal 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 re-blast as necessary to remove all material 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 and rock removal activities. All additional surveys required to clear areas will be undertaken by the Departmental Representative at Contractor's cost.

1.19 MEASUREMENT FOR PAYMENT

.1 Rock removal required to seat the marginal cribs as shown on the drawings is not measured separately for payment, and is considered incidental to the unit price for treated timber cribwork.

.2 Dredging: All dredging is to be considered Class "A" dredging, requiring drilling/blasting activities. Dredging will be measured in cubic metres, determined from existing seabed elevation established from the current sounding survey down to grade depth elevation within pay limits shown on drawings(the pay limit for dredging is the outside face of the new wharf). 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 Uplands rock removal activities 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 excavated or dredged material, using water tight boxes, at locations specified or as directed by the Departmental Representative.

.6 There will be no additional payment for delays and/or downtime for vessel traffic, fishery operations, marine operations, 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 or other activities associated with the on-going fish plant operations.

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

.9 No separate payment will be made for sweeping.

.10 No separate payment will be made for removal of rock to achieve the minimum design cribseat, as shown on the drawings. Include rock removal to achieve the minimum design cribseat elevations as incidental to the unit price for treated timber cribwork.