

PART 1 - GENERAL

1.1 RELATED  
SECTIONS

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

1.2 DEFINITIONS

- .1 Dredging: excavating, transporting and  
disposing of above or underwater materials.
- .2 Class A material: solid rock requiring  
drilling and blasting to loosen, and boulders  
or rock fragments of individual volumes 4.5 m<sup>3</sup>  
or more.
- .3 Class B material: loose or shale rock, silt,  
sand, quick sand, mud, shingle, gravel, clay,  
sand, gumbo, boulders, hardpan (not bedrock)  
and any debris of individual volumes less than  
4.5 m<sup>3</sup>.
- .4 Obstructions: material other than Class A,  
having individual volumes of 4.5 m<sup>3</sup> or more.
- .5 CPM: cubic metres 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

1.2 DEFINITIONS  
(Cont'd)

- .9 Side slope: (Cont'd)  
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 1.0 x 1.0 m long blocks. Dependent on position of sounding, block may have 0 to 9 soundings contained within it.
- .14 Least of Minimum Plan: hydrographic survey plan in which least sounding in grouping of matrix blocks is plotted.
- .15 Instantaneous Mode: mode of operation of hydrographic survey equipment where only sounding observed at predetermined distance interval is retained in memory.
- .16 Average of Instantaneous 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.

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- 1.2 DEFINITIONS  
(Cont'd)
- .18 Cleared Area: area of dredging accepted as achieving the required grade and verified by a PWGSC survey.
- 1.3 SUBMITTALS
- .1 Submit to Departmental Representative for approval, two weeks before blasting, details of proposed blasting operations showing types and quantities of explosives, loading charges and patterns, type of blasting caps, blasting techniques, blast protection measures, time of blasting and other pertinent details. Submit subsequent changes to Departmental Representative before proceeding.
- .2 Submit to Departmental Representative complete photographic and descriptive record of buildings, roads and structures in general area of Project Work, before blasting is started. Describe buildings both inside and out. Record existing cracks in walls or structural components.
- 1.4 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.
- 1.5 WASTE MANAGEMENT AND DISPOSAL
- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Contaminated sediments must be disposed of in confined disposal facility or capped disposal site.
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- 1.5 WASTE MANAGEMENT AND DISPOSAL (Cont'd) .3 Metals, wood and recyclable materials removed during the dredging activities must be diverted appropriate recycling facilities.
- 1.6 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.
- 1.7 LOCATION .1 Work comprises dredging of areas as indicated and as specified herein.
- 1.8 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 by land or water. Contractor will not be allow to bar/close off entire channel or access to the wharf during dredging operations.
- .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,
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1.8 INTERFERENCE TO NAVIGATION  
(Cont'd)

- .3 (Cont'd)  
informed of dredging operations in order that necessary Notices to Mariners will be issued.
- .4 The contractor will be responsible for working closely with the Harbour Authority in arranging vessel movement. Certain areas may have to be dredged first to accommodate vessels moored in the harbour.

1.9 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 indicated is assumed to be 2.24 m below Bench Mark PWC 1-2007.

1.10 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.

1.11 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. Contractor is to note that this location is very exposed and dredging

1.11 INSPECTION OF SITE  
(Cont'd)

- .1 (Cont'd)  
operations will be limited due to weather conditions.

1.12 SITE INFORMATION

- .1 Results of prior soundings are available for inspection at: Public Works and Government Services Canada, P.O. Box 4600, 6th floor The John Cabot Building, 10 Barter Hill, St. John's, NL, A1C 5T2.
- .2 Results of most recent soundings (2013 Survey) 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 Results of prior soundings are made available for bidding purposes only. It should be noted that this information may differ from site condition. Take this into consideration when submitting bid. There has been considerable dredging done in this harbour in the last 10yrs. Although no bedrock was encounter, contractor should note he may encounter some large boulders in the dredged area.
- .4 Take necessary steps to become fully familiar with potential inclement weather and sea conditions in this area.

1.13 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 1 x 1 m UTM grid to approval of Departmental Representative.

1.14 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 1:500 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 re-dredge as necessary to remove all material within dredge areas and any additional areas where soundings differ from the pre-dredged survey 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.
- .6 Departmental Representative will take average of instantaneous soundings simultaneously with least of minimum soundings.
- .7 All elevations obtained in minimum mode within specified areas of dredging must be at or deeper than specific dredge depth before area will be considered completed.

1.15 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 metres(m3), 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 be measured in hours actually used in removal.
  - .2 Dredging equipment used for removal of obstructions will be paid for at rate computed from average hourly earnings of equipment for preceding two weeks negotiated in advance and authorized in writing by Departmental Representative submitted with unit prices included with bid.
- .4 All operations in connection with field positioning of dredging equipment will not be measured separately for payment.

- 1.15 MEASUREMENT FOR PAYMENT (Cont'd)
- .5 No separate payment will be made for Contractor's survey vessel, equipment and crew or diving services.
  - .6 Payment will include disposal of all dredge material, using water tight boxes, at the approved landfill site. Contractor responsible for obtaining and payment of all dumping permit fees. All dredged material is to be disposed at the landfill and levelled off at completion.
  - .7 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.
  - .8 There will be no additional payment for downtime and for delays caused by vessel traffic.
  - .9 Removal of infilling material because of weather conditions will not be measured for payment.
  - .10 Change in location of disposal site. Base contract unit price on location of disposal site as outline in the General Conditions. Unit price will be adjusted up or down, subject to prior negotiation with Departmental Representative for significant change in location of disposal site.

PART 2 - PRODUCTS

- 2.1 DREDGING EQUIPMENT
- .1 Contractor to determine required equipment necessary to dredge material specified and to dispose of dredged material at locations specified or indicated.

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 water level gauges or tide boards in order that proper depth of dredging can be determined. Locate gauges and 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 area to grade depths indicated on the drawing.
- .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.

3.1 GENERAL  
(Cont'd)

- .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 or equipment will be permitted on the existing wharf.

3.2 DISPOSAL OF  
DREDGED MATERIAL

- .1 Dispose of dredged material by depositing in disposal areas indicated in manner approved by Departmental Representative, using water tight truck boxes. Contractor responsible for obtaining and payment of all dumping permit fees. All dredged material is to be disposed at the approved site as directed by the Departmental Representative.

3.3 DREDGING IN  
VICINITY OF  
STRUCTURES

- .1 Do not dredge material from areas lying within 1.5 m of existing structure unless authorized by Departmental Representative.

3.4 SWEEPING

- .1 Sweep dredged areas on completion of dredging to confirm that grade depth has been achieved.
- .2 Sweeping equipment to consist of heavy steel beam suspended from scow or any necessary equipment to sweep at required grade depth or other approved method. Beam to be capable of adjustment and calibration and approved by Departmental Representative.
- .3 If, as result of incomplete Work, additional verification of depths by sounding or sweeping

- 3.4 SWEEPING .3 (Cont'd)  
(Cont'd) becomes necessary, additional costs involved shall be paid by Contractor.
- 3.5 RE-DREDGING .1 Re-dredge unsatisfactory Work and verify depths with additional sounding or sweeping to approval of Departmental Representative.
- 3.6 CO-OPERATION .1 Co-operate with Departmental Representative on inspection of Work and provide assistance AND ASSISTANCE TO DEPARTMENTAL REPRESENTATIVE requested.
- REPRESENTATIVE .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. Volume of material transported in partially filled scows will be determined by Departmental Representative.