

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            Section 01 35 44 – Environmental Procedures

**1.2                PRICE AND PAYMENT PROCEDURES**

- .1            See Section 01 10 10 – General Instructions for measurement payment procedures.
- .2            There will be no additional payment for delays caused by fishing seasons.
- .3            There will be no additional payment for delays caused by vessel traffic.
- .4            There will be no additional payment for down time.
- .5            There will be no additional payment for subsequent infilling after designated areas have been dredged and cleared.
- .6            Removal of material infilling during dredging will be incidental to work.
- .7            There will be no additional payment for side slopes as they are considered incidental to this contract.
- .8            There will be no additional payment for delays or changes in dredging methods required as a result of water quality monitoring results.

**1.3                REFERENCES**

- .1            Definitions:
  - .1            Dredging: dredging, transporting and disposing of dredged materials as specified.
  - .2            Class "A" Material: boulders containing 3.0 cubic metres or more, and solid rock requiring drilling and blasting or hydraulic splitting to loosen.
  - .3            Obstruction: material other than Class "A", having individual volumes of 3.0 cubic metres or more.
  - .4            Class "B" Material: loose or shale rock, sand, quicksand, mud, shingle, clay and sand, gumbo, hardpan, clay, marine clay, clay sizes, marine silt, silt and gravel, gravel, cobbles, boulders, marine shells, or any other materials not defined under Class "A" material.
  - .5            Debris: pieces of wood, wood chips, bark, logs, submerged logs, tree branches, scrap vehicle tires, concrete, steel cable, steel chain, wire rope, scrap steel, etc.
  - .6            Square Metres: area is square metres projected horizontal.
  - .7            Grade: plane or planes above which all material is to be dredged.
  - .8            Estimated Quantity: volume in cubic metres of material calculated from neat plan view dimensions as indicated.
  - .9            U.T.M. Coordinates: Universal Transverse Mercator plan rectangular grid system to be used for all horizontal control of dredging operations as indicated on plan. (NAD 83)
  - .10          Matrix Block: each block area is presented as a number of 1.2 X 3.0 m long blocks. Dependent on the position of the sounding a block may have 1 to 4

sounding contained within it. A blank Matrix Block will indicate that no sounding was registered for that matrix.

- .11 Minimum Mode: a mode of operation of hydrographic survey equipment where the minimum sounding over the length of travel between position updates will be retained in memory.
- .12 Least of Minimum Plan: a hydrographic survey plan in which the least sounding in that matrix block is plotted.
- .13 Instantaneous Mode: a mode of operation of hydrographic survey equipment where only the sounding observed at a predetermined distance interval is retained in memory.
- .14 Average of Instantaneous Plan: a hydrographic survey plan in which the average of instantaneous soundings in that matrix block is plotted.
- .15 Side Slope: inclined surface or plane from grade at side limit of dredged area to intersect original ground line outside of side limit and to be expressed as a ratio of horizontal to vertical. All material above side slopes is to be dredged.
- .16 Cleared Area: a dredged area that has been accepted by the Departmental Representative as complying with plans and specifications and all material removed to grade.
- .17 Box Cut: Dredging and letting the side of the dredged area collapse, where possible, to an equilibrium slope.
- .18 Chart Datum: by international agreement, a plane below which the tide will seldom fall. The Canadian Hydrographic Services has adopted the plane of Lowest Norman Tide (LNT) as Chart Datum. As the rise, fall and ranges of tides varies daily, The Canadian Hydrographic Services should be consulted for tidal prediction and other tidal information relating to the work.
- .19 CEAA: Canadian Environmental Assessment Act.

#### **1.4 LOCATION**

- .1 Contract drawings indicate those areas which require dredging at the time of the most recent surveys. Actual extent of dredging removals within the areas may vary slightly from those indicated on the drawings.

#### **1.5 SCHEDULING**

- .1 Submit to Departmental Representative, within 10 working days after award of Contract, a schedule of work including time periods during which each operation involved in the work will be undertaken.
- .2 Include in the above schedule of work a list of buoys which interfere with the progress of this work. Coordinate with the Departmental Representative arrangements to be made to relocate these buoys to avoid unnecessary delay.
- .3 Adhere to the schedule and take immediate action to correct any slippage by effectively altering operations or mobilizing other equipment. The Departmental Representative is to be notified of the corrective action to be taken.

#### **1.6 INTERFERENCE TO NAVIGATION**

- .1 Be familiar with activities on site and vessel movements in areas affected by work.

- .2 Plan and execute work in a manner that will not impede navigation including movement of vessels in the channel.
- .3 Plan and execute work in a manner that will not interfere with activities at wharf sites, or access to wharves by land or water.
- .4 The Departmental Representative or owner will not be responsible for loss of time, equipment, material, or any other charges related to interference with vessels in the harbour, weather conditions, or due to other Contractor's operations.
- .5 Be responsible for damage to buoys or other navigation markers caused by work. If such occurs, notify Canadian Coast Guard. Assume responsibility for replacement or repairs.

#### **1.7 INTERFACE TO FISHERY OPERATIONS AND DAMAGE TO FISHING GEAR**

- .1 Become familiar with fishery activities. Clearly mark dredged area, disposal areas and routes to and from the dredging site and disposal areas during periods when fishing gear is set in areas adjacent to operations with "Cautionary Buoys" in accordance with Coast Guard Standard TP968 (<http://www.ccg-gcc.gc.ca/aids/home>). All buoys must be coloured cautionary yellow - CGSB # 505-108, and be equipped with radar reflectors.
- .2 Be responsible for all costs associated with the supply, installation, and removal of all necessary temporary aids. The Contractor will receive approval from the District Fisheries Officer for the location of the buoys, upon review and acceptance of temporary aids by the Departmental Representative.
- .3 Keep District Manager, Canadian Coast Guard, Transport Canada, informed of buoyed corridors in order that necessary Notices to Shipping can be issued.
- .4 Execute the work to ensure damage does not occur to fishing gear and interference to fishing operations is minimized by conducting operations within the areas so marked.
- .5 Be responsible for damage to fishing gear outside marked areas, if as a result of construction activities, and if damage occurs, assume responsibility for replacement or repair costs and cost of lost fishing opportunity.

#### **1.8 REQUIREMENTS OF REGULATORY AGENCIES**

- .1 Perform work in accordance with the National Building Code of Canada (NBCC) and any other municipal, provincial and/or national codes relating to the project. In any case of conflict or discrepancy, the more stringent requirements will apply.
- .2 Meet or exceed requirements of specified standards, codes and referenced documents.
- .3 Mark floating equipment with lights in accordance with Regulations for the Prevention of Collisions, as required by Transport Canada.
- .4 Contractor will be required to obtain prior approval from applicable regulatory agencies for any dredging outside specified limits.

#### **1.9 DATUMS**

- .1 Horizontal Datum: All horizontal coordinates used in this specification and contact drawings are in metres referenced to U.T.M. projection based on the North American Datum, 1983, (NAD83, Zone 20). Survey control monuments and their coordinate values are shown on Plan.

- .2 Vertical Datum: All elevations and soundings used in this specification and contract drawings are in metres referenced to Chart Datum.

#### **1.10 INSPECTION OF SITE**

- .1 The Contractor should visit the site of the work before tendering to be familiar with the extent and nature of the work and all conditions affecting the work.

#### **1.11 SITE INFORMATION**

- .1 It is anticipated that the following materials will be encountered within the dredged limits, but are not limited to:
  - .1 Class "B" Materials
  - .2 Debris
- .2 The Contractor shall take the necessary steps to become fully familiar with potential inclement weather and sea conditions in this area.
- .3 The Contractor will be responsible for making his own interpretation of soil conditions.

#### **1.12 DREDGING EQUIPMENT**

- .1 On request, prove to the satisfaction of the Departmental Representative that the methodology and equipment proposed are adequate to finish the work to quality, and schedule specified. If Inadequate, replace or provide additional equipment as directed.
- .2 Contractor shall be responsible for ensuring that equipment can access and function at the site.

#### **1.13 SURVEY REQUIREMENTS**

- .1 The Contractor shall sound areas immediately after dredging to verify that grade depth has been attained. Areas are to be sounded with adequate coverage to provide a bathymetric printout of at least 5-meter spacing on a UTM grid to the approval of the Departmental Representative. A copy of the Contractor's positioning and sounding records shall be provided to the Departmental Representative.

#### **1.14 SEQUENCE OF ACCEPTABLE WORK**

- .1 Post-dredged survey will be undertaken by the Contractor upon completion of dredging work. Submit results as indicated in item 1.13 above. The survey will confirm if the dredged area is completed as specified.
- .2 The Contractor will re-dredge as necessary to remove all material within the limits of the dredged area which is found to be above the average of instantaneous elevations as specified on post-dredged survey.
- .3 All surveys will be performed to Canadian Hydrographic Service Standards.

**Part 2 Products**

**2.1 EQUIPMENT**

- .1 Contractor to determine required equipment necessary to dredge material specified and to dispose of dredged material at location indicated on the Contract drawings.

**Part 3 Execution**

**3.1 General**

- .1 The Contractor shall do the following in executing the work:
  - .1 Place and maintain buoys, ranges, markers and lights required to define work.
  - .2 Maintain and lay out work form bench marks and control points as shown on Plan and noted in the Specifications. Any additional control points and tidal reference stations required to control operations are the responsibility of the Contractor. The Contractor is to maintain these control points and tidal reference stations for the duration of the project and at the Contractor's cost.
  - .3 Obtain owner's permission, in writing, to establish layout monuments and erect targets on private property and pay all associated rental costs. Provide access to layout monuments for departmental survey crews. Any damage to private property will be made good by the Contractor to the satisfaction of the Departmental Representative at no cost to the owner.
  - .4 Establish accurately and maintain water level gauges or tide boards in order that proper depth of dredging can be determined. Locate gauges so as to be clearly visible at all times.
  - .5 The Contractor is to provide a tidal monitoring system to read and record the tide level at a maximum of 15 minute intervals. These records are to be made available for the inspection and use of the Departmental Representative. If using an electronic tide gauge, the Contractor must check the accuracy of the gauge daily. The gauge must be accurate to  $\pm 2$  cm. The monitoring system is to be approved by the Departmental Representative.
  - .6 Dredge areas to grade depths below Chart Datum where indicated on the drawing.
  - .7 Dredge all side slopes to two horizontal to one vertical unless otherwise noted.
  - .8 Remove all materials above specified grade depth and side slopes, 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 a result of the work at no expense to Departmental Representative.
  - .10 Remove material cast-over onto surrounding area and dispose of it as at Contractor's expense. Casting over of material is not permissible unless authorized by the Departmental Representative.
  - .11 The Contractor is responsible for the removal of infilling in the dredged areas which occurs prior to acceptance by the Departmental Representative.

- .12 Immediately notify the Departmental Representative upon encountering any object which might be classified as an obstruction. By-pass the object, after clearly marking its location by coordinates and continue work.
- .13 Refer to Section 01 35 44 for Water quality monitoring.

### **3.2 Encountering Class "A" Material**

- .1 Identify areas where Class "A" material is encountered above specified grades, work equipment, which may require the use of toothed buckets, over areas to remove all Class "B" material, until Departmental Representative is satisfied that further removal cannot be accomplished without blasting. Immediately identify these areas with UTM coordinates and provide information to Departmental Representative.

### **3.3 Rock Removal**

- .1 If rock or boulders are to be removed by blasting, submit to Departmental Representative for review, two weeks before removal, details of proposed blasting operations showing types and quantities of explosives, loading charges and patterns, type of caps, blasting techniques, blast protection measures, time of blasting and other pertinent details. Submit subsequent charges to Departmental Representative before proceeding.

### **3.4 Existing Navigation Buoys**

- .1 The Contractor will make arrangements with Transport Canada for the removal and reinstallation of the existing buoys, as required to carry out the all dredging operations.

### **3.5 Disposal of dredged Materials**

- .1 All dredged material, not to be reused, is to be properly disposed of in the onsite containment cell.

### **3.6 Cooperation and Assistance to Departmental Representative**

- .1 Cooperate with Departmental Representative on inspection work and provide assistance requested.
- .2 On request of Departmental Representative, furnish use of equipment, labour and materials to inspect and monitor work.
- .3 Provide Departmental Representative or inspector with copies of, or access to, daily records of dredging activity, including areas dredged, type of material, hours and reasons for downtime, and other information regarding dredging and disposal as requested by the Departmental Representative.

**END OF SECTION**