

PART 1 - GENERAL

1.1 General
Description

- .1 This section specifies requirements for excavating Class "B" underwater materials in Tabusintac Gully, New Channel, interior and exterior Sections, and placing dredged material at the ocean disposal site.

1.2 Dredge Area

- .1 The dredge area is indicated on the drawing and as specified herein. The location and orientation of the dredge area may be revised by Departmental Representative.
- .2 The Interior dredge Area "A" area has been previously dredged to -1.5m, and is considered to be recently infilled.

1.3 Dredge Grade

- .1 The dredge area "A" (interior) is to excavated to elevation 1.5 metres below Chart Datum (Elevation 0.00)
- .2 The dredge area "B" (exterior) is to excavated to elevation 1.8 metres below Chart Datum (Elevation 0.00)

1.4 Disposal Site

- .1 Dredged materials from interior "A" and exterior "B" to be placed at ocean disposal sites, as shown on the plan.
- .1 The ocean disposal site in the Disposal at Sea Permit is represented by rectangle "ABCD". Dredged materials disposal within rectangle is further restricted by Environmental Protection Plan to sites "DS1", "DS3", "DS4".
- .2 Material from interior dredge site "A" may be disposed by pipeline of either inside the estuary at the disposal site DS1, or outside in Gulf of St Lawrence, DS4.
- .3 Material from the outside dredge site is to be disposed of in Gulf of St Lawrence, below LNT, south of the channel, at DS3 (pipeline) or DS4.

1.5 Related
Sections

- .1 Section 01 35 44 - Environmental Procedures
- Section 01 35 29 - Health and Safety

1.6 Measurement
Procedures

- .1 Only material excavated above grade plane and within side slopes indicated or specified will be measured.
- .2 **Mobilization and Demobilization:** Mobilization and demobilization of the dredge(s), support vessels, temporary facilities, to be paid as a fixed lump sum payment covering all items of work. Half of the sum allocated for mobilization and demobilization, shall be payable upon mobilization of dredging equipment and the remainder shall be payable after project completion.
 - .1 Moving off the channel to accommodate fishing vessels is incidental to the work, and will not be measured.
 - .2 Any remediation to prevent the possible transport of alien species from port to port will be included in the demobilization costs. See Environmental Protection Section 01 35 44.
 - .3 When multiple Dredging equipment is used, a single mobilization is still applicable.
- .3 **Dredging cubic metres in-place measurement (CMPM),** Dredging will be measured in cubic metres in-place measurement determined from soundings taken before and after dredging. For purpose of quantity computation, the existing seabed elevation will be measured before dredging, and then again after the dredge material has been removed, and the Contractor has demonstrated the depth was obtained in that section of the channel. Infilling of the dredged areas from natural events, should it occur, will not be measured.
 - .1 Measurement for payment will be based on cleared sections measured and observed each day. The final survey for acceptance, as per Section 35 20 23, Paragraph 1.17 will remain applicable so as to identify post dredge conditions.
- .4 Dredging equipment used for removal of obstructions will be paid for at rate negotiated in advance and authorized in writing by Departmental Representative.

1.6 Measurement
Procedures
(Cont'd)

- .5 All operations in connection with field positioning of dredging equipment will not be measured separately for payment.
- .6 No separate payment will be made for Contractor's survey vessel, equipment and crew or diving services.
- .7 There will be no additional payment for delays incurred during fishing seasons, weather, during periods when no dredging is permitted.
- .8 There will be no additional payment for downtime and for delays caused by vessel traffic.
- .9 There will be no additional payment for any accumulation of sea weeds and/or kelp which may hamper the dredging operation.
- .10 There will be no additional payment for mooring facilities fees for dredge plant.
- .11 There will be no additional payment for removal of ice.

1.7 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 m³ 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 m³.
- .4 Obstructions: material other than class A, having individual volumes of 1.5 m³ or more.
- .5 CMPM: cubic meters place 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.

1.7 Definitions
(Cont'd)

- .8 Estimated quantity:
 - .1 Volume of material calculated to be above sub grade and within specified side slopes unless otherwise specified.
 - .2 Areas in square metres of material calculated horizontally above grade and within dredge limits, not including side slopes.
- .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 (L.N.T.).
- .11 Coordinates:
 - .1 U.T.M.: universal transverse mercator projection..
- .12 Minimum Sounding: Shallowest depth recorded inside a matrix block. 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 1 to 4 soundings contained within it.
- .14 Minimum Sounding Plan: hydrographic survey plan in which the minimum Sounding is plotted for every matrix block.
- .15 Average Sounding: The average depth of all the soundings recorded in a matrix block.
- .16 Average Sounding Plan: a plan of Average depth of all soundings recorded within a matrix block.
- .17 Lowest Normal Tide (L.N.T.): plane so low that tide will seldom fall below it.
- .18 Cleared Area: area of dredging accepted as complying with plans and specifications.

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| <u>1.8 Submittals</u> | .1 | Submit to Departmental Representative, within seven days of notice of award, a schedule of work including time periods during which each operation involved in work will be undertaken up to final completion. |
| | .2 | Submit to Departmental Representative, within seven days of notice of award, a site specific safety plan. This plan is to have emergency numbers and contacts specific to Harbour Authority, property owners emergency response, and operators of water intakes. |
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| <u>1.9 Regulatory Requirements</u> | .1 | Mark floating equipment with lights in accordance with Regulations for the Prevention of Collisions. |
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| <u>1.10 Waste Management and Disposal</u> | .1 | Metals, wood and recyclable materials removed during the dredging activities must be diverted to appropriate recycling facilities. |
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| <u>1.11 Interference to Navigation and Fishing</u> | .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, marina operations, construction activities at wharf sites, or access to wharves 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 District Manager, Canadian Coast Guard, Fisheries and Oceans, informed of dredging operations in order that necessary Notices to Mariners will be issued. |
| | .4 | Become familiar with fishery activity. Clearly mark dredging area(s), disposal area(s) and routes to and from dredging and disposal area, during periods when fishing gear is set in areas adjacent to dredging operations with "Cautionary Buoys", in accordance with Coast Guard Standard |
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1.11 Interference to.4
Navigation and
Fishing
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TP968-1984. All Buoys must be colored cautionary yellow - CGSB #505-108. The Contractor is responsible for all costs associated with the supply, installation and removal of all necessary temporary aids.

- .5 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.
- .6 Be responsible for damage to fishing gear from dredging activities outside marked areas and, if damage occurs, assume responsibility for replacement or repair costs and cost of lost fishing opportunity.

1.12 Datum, Water
Gauges and Targets

- .1 Elevations used in this specification and contract drawings are in metres referred to Chart Datum.
- .2 Areas to be dredged are to be referenced to vertical bench marks for each location of dredging as indicated.

1.13 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, Marine Directorate. Submit this certificate with equipment information.
- .2 Requests for certification in format of attached questionnaire to be directed to Senior Director, Defence and Marine Directorate, Aerospace, Defence and Marine Branch, Industry Canada, 235 Queen Street, Ottawa, Ontario, K1A 0H5, and to be received there not less than 14 days prior to tender closing.
- .3 The Contractor shall determine the equipment required to dredge the material specified. The material to be dredged is as described in Paragraph 1.1 of this Section.

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| <u>1.14 Inspection of Site</u> | .1 | Contractor to visit site of Work and become thoroughly familiar with extent and nature of Work and conditions affecting Work before tendering. |
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| <u>1.15 Site Information</u> | .1 | Take necessary steps to become fully familiar with potential for inclement weather and sea conditions in this area. Include weather related incidents in the schedule. |
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| <u>1.16 Survey Requirements</u> | .1 | The Contractor shall provide, at his expense, a survey vessel for equipment and crew to set up and maintain control for the location of dredge limits and to sound areas, immediately after dredging, to verify that grade depth has been attained. |
| | .2 | The contractor is to provide at his expense a GPS unit with differential corrected position, with accuracy less than three (3) metres. |
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| <u>1.17 Surveys and Acceptance of Work</u> | .1 | Pre-dredge hydrographic survey of October 06 and November 02, 2016 is shown on Plans. Channel alignment may be reassessed at time of mobilization. |
| | .2 | No area will be dredged prior to Departmental Representative's 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 1:500 plotting "minimum" depths obtained in this survey will identify areas requiring reworking. |
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PART 2 - PRODUCTS

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| <u>2.1 Dredging Equipment</u> | .1 Contractor to determine required equipment necessary to dredge material specified and to dispose of dredged material at locations indicated. |
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PART 3 - EXECUTION

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| <u>3.1 Layout of Work</u> | .1 The contractor will layout the work based on sketches provided by the Departmental Representative, taking into account the dynamics of the sand bars which may change from what is depicted on surveys or a sketch. |
| | .2 Use Global Positioning System (GPS), differential corrected, instrumentation valid at 3.0 metre accuracy. The contractor is responsible to ensure GPS instrumentation is verified for accuracy every three months. |
| | .3 Transfer bench mark from wharf to work site and reference this to the tide board. |
| <u>3.2 General</u> | .1 Mark floating equipment with lights in accordance with International Rules of Road and maintain radio watch on board. |
| | .2 Place and maintain buoys, pins, ranges, markers and lights required to define work and disposal areas. |
| | .3 Lay out Work from bench marks and coordinates provided by Departmental Representative and be responsible for accuracy of Work relative to established bench marks ranges and baseline. Provide and maintain positioning 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. |

3.2 General
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- .5 Remove materials above specified grade depths, within limits indicated. Material removed from below subgrade depth or outside specified area or side slope is not part of Work.
- .6 Remove shoaling which occurs as result of Work at no expense to Departmental Representative.
- .7 Remove infilling in dredge areas which occurs prior to acceptance by Departmental Representative.
- .8 Immediately notify Departmental Representative upon encountering object which might be classified as obstruction. By-pass object after clearly marking its location and continue Work.

3.3 Disposal of
Dredged Material

- .1 Dispose of dredged material to the ocean disposal site in manner approved by Departmental Representative.
- .2 Disposal of dredged material will be carried out in accordance with the terms and conditions set down in permits issued by Environment Canada pursuant to the Canadian Environmental Protection Act and Regulations there under.

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.