

**SPECIFICATIONS FOR
HARBOUR DREDGING
BALSAM BAY, MB & CALDERS DOCK, MB**



Department of Fisheries & Oceans
Small Craft Harbours Branch
Winnipeg, Manitoba

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TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
01 11 05 – General Instructions	3
01 35 29 – Health and Safety Requirements	9
01 35 43 – Environmental Procedures	12
01 45 00 – Quality Control.....	15
01 77 00 – Closeout Procedures	17
35 20 23 – Dredging.....	19

01 11 05 – GENERAL INSTRUCTIONS

Part 1 General

1.1 DESCRIPTION OF WORK

- .1 There are two (2) work sites described in this specification – Balsam Bay and Calders Dock. Balsam Bay is located on the east shore of Lake Winnipeg, approximately 80 kilometres north of Winnipeg. Calders Dock is located on the west shore of Lake Winnipeg, approximately 75 kilometres north of Riverton. See the Location Plan on the attached drawings for the specific site locations.
- .2 The work under this contract covers the following:
 - .1 Balsam Bay:
 - .1 Excavation of approximately 1,000 cubic meters of material from the channel bottom along the entrance to the harbour.
 - .2 Calders Dock:
 - .1 Excavation of approximately 365 cubic meters of material from the shale bar and surrounding channel bottom at the end of the south rubble mound breakwater.
- .3 The work to be done by the Contractor under this Contract shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, insurance, and all things necessary for and incidental to the satisfactory performance and completion of all work as specified herein. All work to be done in accordance with details shown on the accompanying plans as specified herein.

1.2 DEFINITIONS

- .1 The word "provide" means "supply and install".
- .2 For purposes of this contract, "Departmental Representative", "Architect/Engineer" and "Engineer" shall have the same meaning.

1.3 WORK SCHEDULE

- .1 Provide within 10 working days after Contract award, schedule showing anticipated progress stages and final completion of work within time period required by contract documents.
- .2 Interim reviews of work progress based on work schedule will be conducted as decided by Engineer and schedule updated by Contractor in conjunction with and to approval of Engineer.
- .3 Work under this contract is to be performed to Completion in a timely manner. Commence planning and preparatory work immediately upon receipt of official notification of acceptance of Contract and schedule the work so that the project will be completed by **March 15, 2018**.

- .4 Work sequence:
 - .1 Before work is undertaken, ensure that all materials and trades required are available to finish work in as short a period as possible.
 - .2 No area to be renovated shall be placed out of service until it is confirmed that there shall be no need to stop the work waiting for receipt of materials, equipment or labour.

1.4 CERTIFICATES AND TRANSCRIPTS

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.

1.5 FEES, PERMITS AND CERTIFICATES

- .1 Provide authorities having jurisdiction with information requested.
- .2 Pay fees and obtain certificates and work permits required.
- .3 Furnish certificates and permits when requested.

1.6 MEASUREMENT FOR PAYMENT

- .1 Notify Engineer sufficiently in advance of operations to permit required measurements for payment.
- .2 Submit to Engineer, at least 14 days before Information for first application for payment, cost breakdown, Progress Payment in detail as directed by Engineer, for parts of Work, aggregating total amount of Contract Price, so as to facilitate evaluation of applications for payment. After approval by Engineer, cost breakdown will be used as basis for progress payments.

1.7 INTERPRETATION OF DOCUMENTS

- .1 In the event of discrepancies or conflicts in interpreting the Plans (drawings) and Specifications, Specifications take precedence over drawings bound with specifications.
- .2 Drawings and specifications are complementary. When work is shown or mentioned on the drawings but is not indicated in the specifications, or when work is indicated in the specifications but is not shown or mentioned on the drawings, it shall nevertheless be included in the Contract.
- .3 The sub-division of the Specification into sections, identified by title and number, is for convenience only and does not modify the singularity of the document, nor does it operate to make or imply that the Engineer is an arbiter to establish the limits or extent of contract between Contractor and Subcontractors or to determine the limits or extents of work that may be decided by trade unions or contractors' organizations. Extras to the Contract will not be considered on the grounds of differences in interpretation of the Specification and/or Drawings as to which trade performs the work.

- .4 Do not scale off drawings.

1.8 CONTRACTOR'S USE OF SITE

- .1 Co-ordinate use of premises under direction of the Engineer.
- .2 Do not unreasonably encumber the site with materials and equipment.
- .3 Assume full responsibility for protection and safekeeping of products under this Contract.
- .4 Move stored products or equipment which interfere with operations of Engineer or other harbour users.
- .5 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.
- .6 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.
- .7 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by Engineer.
- .8 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

1.9 EXISTING SERVICES

- .1 Notify Engineer and utility companies of intended interruption of services and obtain required permission.
- .2 Where Work involves breaking into or connecting to existing services, give Engineer 72 hours notice for necessary interruption of mechanical or electrical service throughout course of work. Minimize duration of interruptions.
- .3 Establish location and extent of service lines in area of work before starting Work. Notify Engineer of findings.
- .4 Submit schedule to and obtain approval from Engineer for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.
- .5 Where unknown services are encountered, immediately advise Engineer and confirm findings in writing.
- .6 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.
- .7 Record locations of maintained, re-routed and abandoned service lines.

1.10 DOCUMENTS REQUIRED

- .1 Maintain at job site, one copy each document as follows:

- .1 Contract Drawings.
- .2 Specifications.
- .3 Addenda.
- .4 Reviewed Shop Drawings.
- .5 Change Orders.
- .6 Other Modifications to Contract.
- .7 Copy of Approved Work Schedule.
- .8 Health and Safety Plan and Other Safety Related Documents.
- .9 Other documents as specified.

1.11 CODES AND STANDARDS

- .1 Perform work in accordance with National Building Code of Canada (NBC) and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
- .2 Work to meet or exceed requirements of contract documents, specified standards, codes and referenced documents.

1.12 CONTRACT METHOD

- .1 Construct Work under a combined price contract. All costs for work not specifically identified as a unit price item shall be included in the lump sum arrangement.

1.13 PROJECT MEETINGS

- .1 Engineer will arrange project meetings and assume responsibility for setting times and recording and distributing minutes.

1.14 SETTING OUT OF WORK

- .1 Engineer will provide only those survey control points and set such stakes as necessary to define general location, alignment and elevations of work. Give engineer reasonable notice of requirements for such control points and stakes.
- .2 Set grades and lay out work in detail from control points and grades established by Engineer.
- .3 Provide devices needed to lay out and construct work.
- .4 Supply such devices needed to lay out and construct work.
- .5 Supply such devices as straight edges and templates required to facilitate Engineer's inspection of work.
- .6 Supply stakes and other survey markers required for laying out work.

1.15 ADDITIONAL DRAWINGS

- .1 Engineer may furnish additional drawings for clarification. These additional drawings have same meaning and intent as if they were included with plans referred to in Contract documents.
- .2 When additional drawings and instructions are required by the Contractor, provide reasonable notice in writing to the Engineer in advance of the date they are required.

1.16 EXAMINATION

- .1 Before submitting tender, examine existing conditions and determine conditions affecting work.
- .2 Obtain all information which may be necessary for proper execution of Contract.

1.17 SITE INSPECTION

- .1 The submission of a tender is deemed to be a confirmation of the fact that the Tenderer has inspected the site and is fully conversant with all the conditions under which the work is to be carried out.

1.18 MATERIAL AND EQUIPMENT

- .1 Use new products unless otherwise specified.
- .2 Deliver and store material and equipment to manufacturer's instructions with manufacturer's labels and seals intact.
- .3 When material or equipment specified by standard performance specifications, upon request of Departmental Representative, obtain from manufacturer an independent testing laboratory report, stating that material or equipment meets or exceeds specified requirements.

1.19 SECURING WORK AREA

- .1 Secure the work areas in each stage in an approved manner. This includes fencing or barricades to prevent public access to any areas where construction activities occur and construction materials are stored.

1.20 VEHICLE AND PEDESTRIAN PROTECTION

- .1 Provide snow fencing, wooden barriers, or other approved barriers to prevent vehicles and pedestrians from accessing the site during construction.
- .2 Contractor shall provide appropriate signage for vehicle and pedestrian protection.
- .3 All barriers shall include delineation and reflectors to stand out at nightfall.

1.21 DRAWINGS

- .1 The following drawings are to be read in conjunction with this specification:

- .1 B-1 Balsam Bay, MB - Harbour Dredging
- .2 B-2 Calders Dock, MB - Harbour Dredging

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

01 35 29 – HEALTH AND SAFETY REQUIREMENTS

Part 1 General

1.1 REFERENCES

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .3 Province of Manitoba
 - .1 The Workers Compensation Act (latest edition).

1.2 SUBMITTALS

- .1 Submit site-specific Health and Safety Plan: Within 10 days after date of Notice to Proceed and prior to commencement of Work.
- .2 Submit copies of incident and accident reports to Engineer.
- .3 Submit WHMIS MSDS – Material Safety Data Sheets to Engineer.
- .4 Engineer will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor after receipt of plan. Revise plan as appropriate and resubmit plan to Engineer within 5 days after receipt of comments from Engineer.
- .5 Engineer's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .6 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

1.3 SAFETY ASSESSMENT

- .1 Perform site specific safety hazard assessment related to project.

1.4 FILING OF NOTICE

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.

1.5 SAFETY ASSESSMENT

- .1 Perform site specific safety hazard assessment related to project.

1.6 GENERAL REQUIREMENTS

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.

- .2 Observe and enforce construction safety measures required by Canadian Construction Safety Code, Provincial Government, Worker's Compensation Board and municipal statutes and authorities.
- .3 In the event of a conflict between any provisions of above authorities having the most stringent provision will apply.

1.7 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.8 UNFORSEEN HAZARDS

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of the Province having jurisdiction and advise Engineer verbally and in writing.

1.9 HEALTH AND SAFETY CO-ORDINATOR

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must:
 - .1 Have site-related working experience specific to activities associated with dock reconstruction at an active harbour site.
 - .2 Have working knowledge of occupational safety and health regulations.
 - .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
 - .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
 - .5 Be on site during execution of Work.

1.10 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Departmental Representative verbally and in writing.

1.11 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or Departmental Representative.

- .2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

01 35 43 – ENVIRONMENTAL PROCEDURES

Part 4 General

4.1 MEASUREMENT FOR PAYMENT

- .1 No separate measurement will be for work of this section. Work is to be included in Lump Sum Costs.

4.2 FIRES

- .1 Fires and burning of rubbish on site not permitted.

4.3 DRAINAGE

- .1 Provide temporary drainage and pumping required to keep excavations and site free from water.
- .2 Ensure pumped water into waterways, sewer or drainage systems is free of suspended materials.
- .3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

4.4 WORK ADJACENT TO WATERWAYS

- .1 Construction equipment may not enter the lake unless the lake is frozen. If construction equipment will be located on the frozen surface of the lake, it will be removed from the lake each night if the on-ice component of the projects spans more than one day.
- .2 Construction equipment will enter and leave the lake at such a location and in such a manner that disturbance to the lakeshore does not occur.
- .3 Every effort will be made to minimize the introduction of sediment to the lake during on ice work activities. Any sediment tracked onto the ice during the project must be cleaned off at the end of the project. This includes any ice that needs to be removed from the shoreline to accommodate stabilization works. All material used for shoreline stabilization will be clean and free of silt and clay.
- .4 Do not use waterway beds for borrow material.
- .5 Waterways to be free of excavated fill, waste material and debris.
- .6 Design and construct temporary crossings to minimize erosion to waterways.
- .7 Do not skid logs or construction materials across waterways.
- .8 Avoid damage to shoreline.

- .9 Supply, install, and maintain approved erosion control blankets to unprotected slopes until revegetation is established.
- .10 Any impacts below ordinary high water mark that are not shown on the site plan are not permitted without written approval from the Engineer. Up to 30 days may be required for approval.
- .11 Protect shoreline with a build up of snow.
- .12 Reclaim and restore disturbed areas to previous or better condition.
- .13 Areas used for stockpiling construction materials, including fill or other equipment storage will be well back from the edge of the water body and, if possible, in areas which have already been disturbed or are devoid of vegetation.
- .14 All required machinery should be supplied with appropriate spill containment kits as a precaution in the event of accidental fuel spills or hydraulic leaks. Additional kits should be available on site with the capacity to contain any spills of deleterious substances that may be reasonably expected to occur. Contractors should ensure that all personnel are familiar with the spill kits.
- .15 The Contractor shall report spills of fuels or other contaminants to the Engineer.
- .16 The Contractor shall not remove, destroy or disturb species pursuant to Provincial Threatened Endangered and Extirpated Species regulation, or species listed in the federal Species at Risk Act.
- .17 The Contractor shall not disturb migratory bird nests.

4.5 POLLUTION CONTROL

- .1 Control emissions from equipment and plant to local authorities' emission requirements.
- .2 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area.
- .3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.
- .4 Locate temporary fuel storage 100 metres from shore and comply with Provincial Environmental Legislation.
- .5 Refueling, servicing, or cleaning of equipment on ice or within 100 metres of shore is prohibited. Contractor to ensure all equipment operating on project is free of external fluid leaks, grease, oil, and mud.
- .6 Contractor to contain all oil leaks from equipment working adjacent to waterways.
- .7 No maintenance of vehicles or equipment in construction areas.
- .8 Use drip pans to catch leaking oil from compressors, pumps, etc.

4.6 DISPOSAL OF WASTES

- .1 Do not bury rubbish and waste materials on site unless approved by Engineer.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways. Hazardous wastes including fuels, oils and lubricants to be disposed of by a licensed hazardous waste carrier/handler in accordance with Provincial Environment Legislation.
- .3 Collect all rubbish and waste material and dispose of in accordance with applicable governing authorities.
- .4 Do not allow debris of any type to enter waterway.

4.7 PLANT PROTECTION

- .1 Protect trees and plants on site and adjacent properties.
- .2 Avoid disturbance of topsoil and vegetation unless otherwise specified. Contractor is responsible to restore all impacted areas to original state.

4.8 VERTICAL SILT CURTAIN

- .1 Contractor to isolate the work areas from Lake Winnipeg with an approved silt curtain to prevent the drift of sediment from the work area into the lake as required. The silt curtain must extend from the top of the ice/water to within 300mm of the lake bottom. The silt curtain must be left in place until all suspended sediments are settled out. On completion of the project carefully remove silt curtain to ensure settled sediment is not disturbed. An acceptable product is "Tough Guy" Type 1E Turbidity Barrier or approved equivalent. Costs for supply, installation, maintenance, and removal to be considered incidental to costs for dredging.

Part 5 Products

5.1 NOT USED

- .1 Not Used.

Part 6 Execution

6.1 NOT USED

- .1 Not Used.

END OF SECTION

01 45 00 – QUALITY CONTROL

Part 1 General

1.1 INSPECTION

- .1 Allow Engineer access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Engineer.
- .3 Engineer will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction.

1.2 INDEPENDENT INSPECTION AGENCIES

- .1 Independent Inspection/Testing Agencies may be engaged by Engineer for purpose of inspecting and/or testing portions of Work.
- .2 Provide equipment required for executing inspection and testing by appointed agencies.
- .3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Engineer at no cost to. Pay costs for retesting and reinspection.

1.3 ACCESS TO WORK

- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

1.4 PROCEDURES

- .1 Notify Engineer in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.5 REJECTED WORK

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Engineer as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 If in opinion of Engineer it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Engineer.

1.6 TESTS AND MIX DESIGNS

- .1 Furnish test results and mix designs as requested.

1.7 MILL TESTS

- .1 Submit mill test certificates as requested.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

01 77 00 – CLOSEOUT PROCEDURES

Part 1 General

1.1 ADMINISTRATIVE REQUIREMENTS

- .1 Acceptance of Work Procedures:
 - .1 Contractor's Inspection: Contractor to conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .2 Final Inspection:
 - .1 When completion tasks are done, request final inspection of Work by Engineer.
 - .2 When Work incomplete according to Engineer, complete outstanding items and request re-inspection.
 - .3 Final Payment:
 - .1 When Engineer considers final deficiencies and defects corrected and requirements of Contract met, make application for final payment.
 - .4 Payment of Holdback: after issuance of Certificate of Substantial Performance of Work, submit application for payment of holdback amount in accordance with contractual agreement.

1.2 FINAL CLEANING

- .1 Remove surplus materials, excess materials, rubbish, tools and equipment.

1.3 RECORD DRAWINGS

- .1 Maintain project “as-built” record drawings and record accurately significant deviations from Contract documents caused by site conditions and changes ordered by Engineer.
- .2 Mark “as-built” changes in red coloured ink.
- .3 Record the following information:
 - .1 Field changes of dimension and detail.
 - .2 Changes made by Change Order or Field Order.
- .4 At completion of project and prior to final inspection, neatly transfer “as-built” notations to second set and submit both sets to Engineer.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

35 20 23 – DREDGING

Part 1 General

1.1 MEASUREMENT PROCEDURE

- .1 No separate measurement will be for work of this section. Work is to be included in Lump Sum Costs. Include supply, installation, maintenance and removal of vertical silt curtain in Lump Sum Costs.
- .2 Only material excavated above grade plane and within side slopes indicated or specified will be measured.
- .3 Dredging is to be considered for payment as a lump sum item for material dredged and removed from the existing harbour basin to lines and grades as specified on drawings. The quantity of dredged material to be removed is estimated to be 1,000 cubic metres at the Balsam Bay Harbour and 365 cubic metres at the Calders Dock Harbour. The material is estimated to be Class B material as defined in Section 1.2 below.
- .4 All operations in connection with field positioning of dredging equipment will not be measured separately for payment.
- .5 No separate payment will be made for Contractor's survey, equipment and crew.
- .6 Payment will include disposal of excavated material at approved spoil location.
- .7 Any public roads used as haul roads between the work sites and spoil areas shall be kept clean and free of debris. Maintenance of these roads is to be considered incidental to the cost for dredging. Obtain permission from local governing authorities regarding use of public roads for hauling excavated material from work site to spoil area.
- .8 Use of existing launch ramp or breakwaters as access to lake is not permitted

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 cubic meters or more.
- .3 Class B material: loose or shale rock, layered limestone, silt, sand, quick sand, mud, shingle, gravel, clay, sand, gumbo, boulders, hardpan and debris of individual volumes less than 1.5 cubic meters.
- .4 Grade: plane above which material is to be dredged.
- .5 Estimated quantity:
 - .1 Volume of material calculated to be above grade and within specified side slopes unless otherwise specified.

- .6 Side slope: inclined surface or plane from grade 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.
- .7 Chart Datum: permanently established plane from which soundings or tide heights are referenced.
- .8 Coordinates:
 - .1 U.T.M.: universal transverse mercator projection.
 - .2 U.T.M. Coordinates: plane rectangular coordinates used in grid system in which grid network is applied to U.T.M. projection. Horizontal control information as indicated.
- .9 Cleared Area: area of excavation accepted as complying with plans and specifications.

1.3 SUBMITTALS

- .1 Submit to Engineer for approval, four weeks before excavation, the proposed location of spoil area.

1.4 REGULATORY REQUIREMENTS

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

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Metals, wood and recyclable materials removed during the excavation activities must be diverted appropriate recycling facilities.

1.6 SCHEDULING

- .1 Submit to Engineer, within two weeks after award of Contract, schedule of work including time periods during which each operation involved in Work will be undertaken. At time of submission of schedule, meet with Engineer to review schedule.
- .2 Adhere to schedule and take immediate action to correct any slippage by effectively altering existing excavating operations or mobilizing other equipment. Notify Engineer of corrective action to be taken.

1.7 LOCATION

- .1 Work comprises channel excavation of areas detailed on Drawings B-1 and B-2.

1.8 DATUM, WATER GAUGES AND TARGETS

- .1 Elevations used in this specification and contract drawings are in metres referred to Canadian Geodetic Vertical Datum of 1928 (CGVD28).
- .2 Horizontal control points used in this specification and contract drawings are in metres referred to North American Datum of 1983 (NAD83).

1.9 INSPECTION OF SITE

- .1 Contractor to visit each Work Site and become thoroughly familiar with extent and nature of Work and conditions affecting Work before tendering.

1.10 SURVEY REQUIREMENTS

- .1 Provide, at own expense survey equipment and crew to set up and maintain control for location of excavation limits and to sound areas immediately after excavation to verify that grade depth has been attained.

1.11 SURVEYS AND ACCEPTANCE OF WORK

- .1 Contractor to re-excavate as necessary to remove all material within designated areas which are found to be above grade.
- .2 One additional survey will be undertaken at Engineer's cost, for those areas not meeting acceptance criteria for excavation. All additional surveys required to clear areas will be undertaken by the Engineer at Contractor's cost.
- .3 All elevations obtained in minimum mode within specified areas of excavation must be at or deeper than grade before area will be considered completed.

Part 2 Products

2.1 EXCAVATION EQUIPMENT

- .1 Contractor to determine required equipment necessary to excavate material specified and to dispose of spoil material.

Part 3 Execution

3.1 GENERAL

- .1 Contractor to install approved barricades and warning signs around perimeter of work site for the duration of project and until such time as the area is deemed safe for public use.
- .2 Lay out Work from bench marks and base lines established by Engineer. Be responsible for accuracy of Work relative to established bench marks and baseline.
- .1 Excavate Calders Dock areas to grade depth of EL 215.2 metres. Excavate Balsam Bay areas to grade depth of EL 215.0 metres.
- .2 Excavate side slopes to 1.5 horizontal to 1 vertical unless otherwise indicated.
- .3 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.
- .4 Remove shoaling which occurs as result of Work at no expense to Engineer.

- .5 Remove material cast-over on surrounding area and dispose of it as spoil material. Do not over-cast material unless authorized by engineer.
- .6 Immediately notify Engineer upon encountering an object which might be classified as an obstruction. By-pass the object after clearly marking its location and continue work.
- .7 Contractor to clean excavated material spilled on ice adjacent to excavation area.

3.2 DISPOSAL OF EXCAVATED MATERIAL

- .1 Dispose of excavated material by depositing in spoil area approved by Engineer and in accordance with local governing authorities. Obtain all permits required for disposal of materials. Do not dispose of material in waterways.
- .2 Do not haul saturated material unless trucks are lined to prevent loss of material.
- .3 All floating debris to be removed to spoil areas upon completion of operations. No separate payment to be made for this item.
- .4 Ice removed for the purposes of this excavation may be used to form a barricade around the excavation area.

3.3 SWEEPING

- .1 Prior to completion of excavation, sweep areas to confirm that grade depth has been achieved.
- .2 Contractor to clean up site upon completion of work.

3.4 RE-EXCAVATION

- .1 Re-excavate unsatisfactory Work and verify depths with additional soundings to approval of Engineer.

3.5 CO-OPERATION AND ASSISTANCE TO ENGINEER

- .1 Co-operate with Engineer on inspection of Work and provide assistance requested.
- .2 On request of Engineer, furnish use of such boats, equipment, labour and materials forming ordinary and usual part of excavation as may be reasonably necessary to inspect and supervise Work.

END OF SECTION