



Public Works and  
Government Services  
Canada

Travaux publics et  
Services gouvernementaux  
Canada

REAL PROPERTY SERVICES  
Western Region  
SERVICES IMMOBILIERS  
Région de l'ouest

# **PUBLIC WORKS AND GOVERNMENT SERVICES CANADA**

# **TECHNICAL SPECIFICATIONS**

**R.084190.001**

**NORMAN WELLS CANADIAN COAST GUARD WHARF DREDGING**



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**DRAWING:**

S01          Survey Plan for Dredging

**END OF SECTION**

**Part 1            General**

**1.1                DEFINITIONS**

- .1        The word “provides” means “supply and install.”
- .2        The word “Watercourse” means a natural watercourse, body of water or water supply, whether usually containing water or not, and includes groundwater, springs, swamps, and gulches.

**1.2                WORK COVERED BY CONTRACT DOCUMENTS**

- .1        Work of this Contract comprises the dredging of the Canadian Coast Guard (CCG) Wharf located within the Town of Norman Wells off Quarry Road and Mackenzie Drive, Northwest Territories.
- .2        The work under this Contract shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all other items necessary for, and incidental to, the satisfactory performance and completion of all work specified herein. All work to be completed in accordance with details shown on the accompanying plans and as specified herein.

**1.3                INTERPRETATION OF DOCUMENTS**

- .1        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.
- .2        Departmental Representative may furnish additional drawings to clarify work. Such drawings become part of Contract Documents.
- .3        Do not scale off drawings.

**1.4                EXISTING CONDITIONS**

- .1        Contractor shall be familiar with the site conditions, and all available data and scope, and price accordingly. The submission of a tender is deemed to be confirmation that the Tenderer has inspected the site and is fully conversant with all the conditions affecting the work to be carried out.
- .2        The monthly water levels on the Mackenzie River, using data from 2002 to 2015, are shown in Figure 1.

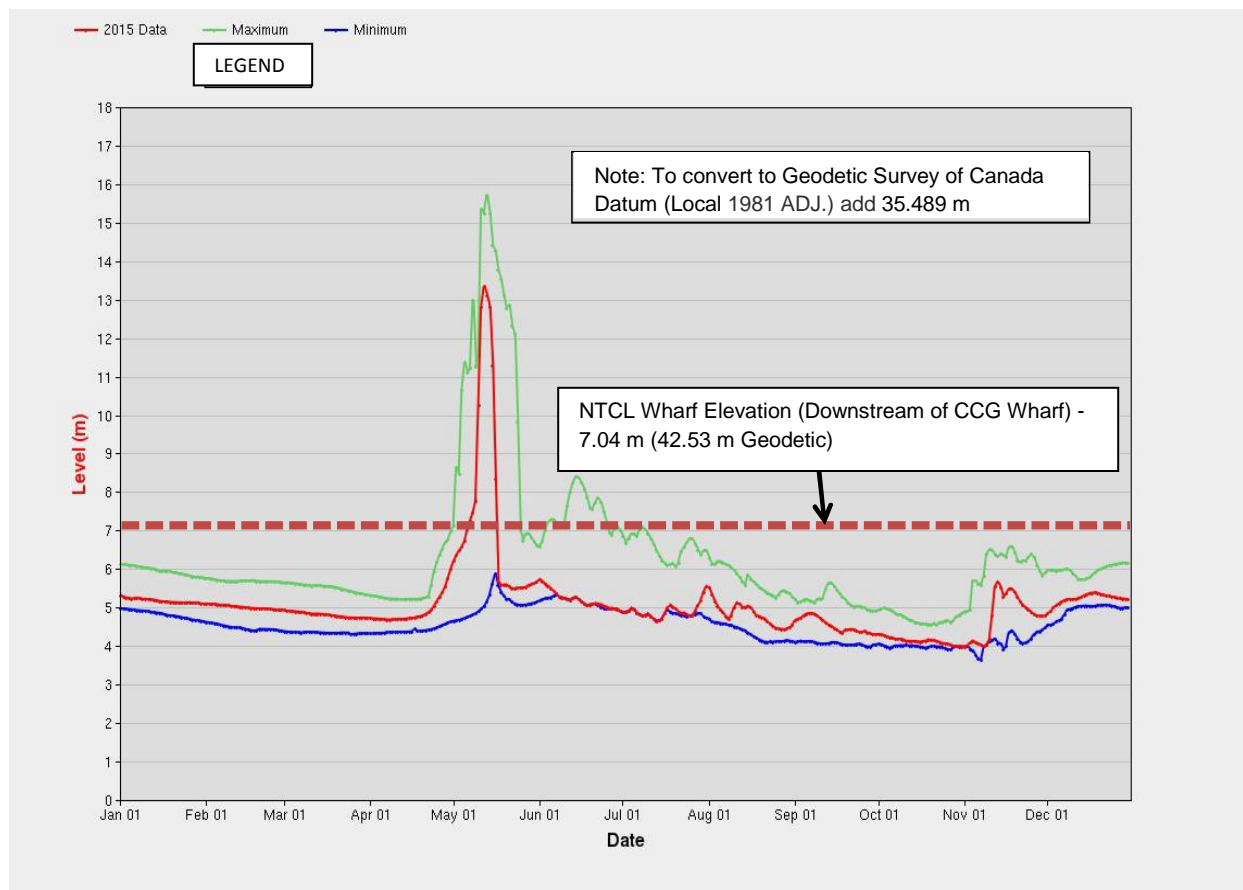


Figure 1: Mackenzie River Water Level at Station 10KA001, 2002 to 2015  
Government of Canada, Environment and Natural Resources

## 1.5 WORK SEQUENCE

- .1 Co-ordinate Progress Schedule with Departmental Representative during construction.
- .2 Required stages:
  - .1 Establish temporary environmental and traffic/pedestrian protection.
  - .2 Complete dredging in areas shown on the Drawing.
  - .3 Remove traffic/pedestrian protection, environmental protection and temporary pedestrian access.

## 1.6 CONTRACTOR USE OF PREMISES

- .1 Limit use of premises for access, for Work, and for storage to allow:
  - .1 Owner usage.
  - .2 Work by other contractors.
- .2 Co-ordinate use of premises under direction of Departmental Representative.
- .3 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.

- .4 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.
- .5 Repair or replace portions of existing work which have been altered during construction operations to match or exceed existing or adjoining work, as directed by Departmental Representative.

## **1.7 DOCUMENTS REQUIRED**

- .1 Maintain at job site, one copy of each document as follows:
  - .1 Contract Drawings.
  - .2 Specifications.
  - .3 Addenda.
  - .4 Reviewed Shop Drawings.
  - .5 List of Outstanding Shop Drawings.
  - .6 Change Orders.
  - .7 Other Modifications to Contract.
  - .8 Field Test Reports.
  - .9 Copy of Approved Work Schedule.
  - .10 Health and Safety Plan and Other Safety Related Documents.
  - .11 Copy of SAHTU Land and Water Board Terms and Conditions and License.
  - .12 Other documents as specified.

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not used.

## **Part 3 Execution**

### **3.1 NOT USED**

- .1 Not used.

**END OF SECTION**

**Part 1            General**

**1.1            APPLICATIONS FOR PROGRESS PAYMENT**

- .1    Make applications for payment on account as provided in Agreement as Work progresses.
- .2    Date applications for payment last day of agreed payment period and ensure amount claimed is for value, proportionate to amount of Contract, of Work performed and Products delivered to Place of Work at that date.
- .3    Notify Departmental Representative sufficiently in advance of operations to permit required measurements for payment.
- .4    Submit to Departmental Representative, at least 14 days before information for first application for payment, cost breakdown, Progress Payment in detail as directed by Departmental Representative, for parts of Work, aggregating total amount of Contract Price, so as to facilitate evaluation of applications for payment. After approval by Departmental Representative, cost breakdown will be used as basis for progress payments.
- .5    Submit requests for payment in metric (SI) units corresponding with items on the Bid Submission Form.

**1.2            SCHEDULE OF VALUES**

- .1    Provide schedule of values supported by evidence as Departmental Representative may reasonably direct and when accepted by Departmental Representative, be used as basis for applications for payment.
- .2    Include statement based on schedule of values with each application for payment.
- .3    Support claims for products delivered to Place of Work but not yet incorporated into Work by such evidence as Departmental Representative may reasonably require to establish value and delivery of products.

**1.3            PREPARING SCHEDULE OF UNIT PRICE TABLE ITEMS**

- .1    Submit separate schedule of unit price items of Work requested in Bid form.
- .2    Make form of submittal parallel to Schedule of Values, with each line item identified same as line item in Schedule of Values. Include in unit prices only:
  - .1    Cost of material.
  - .2    Delivery and unloading at site.
  - .3    Sales taxes.
  - .4    Installation, overhead and profit.
- .3    Ensure unit prices multiplied by quantities given equal material cost of that item in Schedule of Values.

**Part 2            Products**

**2.1                NOT USED**

.1            Not Used.

**Part 3            Execution**

**3.1                NOT USED**

.1            Not Used.

**END OF SECTION**

**Part 1            General**

**1.1                ADMINISTRATIVE**

- .1     Schedule and administer project meetings throughout the progress of the work at the call of Departmental Representative.
- .2     Prepare agenda for meetings.
- .3     Distribute written notice of each meeting five days in advance of meeting date to Departmental Representative.
- .4     Provide physical space and make arrangements for meetings.
- .5     Preside at meetings.
- .6     Record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties.
- .7     Reproduce and distribute copies of minutes within three days after meetings and transmit to meeting participants Departmental Representative and affected parties not in attendance.
- .8     Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

**1.2                PRECONSTRUCTION MEETING**

- .1     Within 15 days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2     Departmental Representative, Contractor, major Subcontractors, field inspectors and supervisors will be in attendance.
- .3     Establish time and location of meeting and notify parties concerned minimum five days before meeting.
- .4     Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
- .5     Agenda to include:
  - .1     Appointment of official representative of participants in the Work.
  - .2     Schedule of Work: in accordance with Section 01 32 16.07 - Construction Progress Schedule.
  - .3     Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 52 00 - Construction Facilities.
  - .4     Delivery schedule of specified equipment.
  - .5     Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
  - .6     Record drawings in accordance with Section 01 33 00 - Submittal Procedures.



- .7 Progress claims, administrative procedures, photographs, hold backs.
- .8 Appointment of inspection and testing agencies or firms.
- .9 Insurances, transcript of policies.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

## **Part 1 General**

### **1.1 DEFINITIONS**

- .1 Activity: element of Work performed during course of Project. Activity normally has expected duration, and expected cost and expected resource requirements. Activities can be subdivided into tasks.
- .2 Baseline: original approved plan (for project, work package, or activity), plus or minus approved scope changes.
- .3 Master Plan: summary-level schedule that identifies major activities and key milestones.
- .4 Milestone: significant event in project, usually completion of major deliverable.
- .5 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.
- .6 Project Planning, Monitoring and Control System: overall system operated by Departmental Representative to enable monitoring of project work in relation to established milestones.

### **1.2 REQUIREMENTS**

- .1 Work under this Contract is to be performed 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 construction can be completed within 90 days following award.
- .2 Ensure Project Schedule is practical and remains within specified Contract duration.
- .3 For in-water construction restrictions refer to Section 01 35 43 – Environmental Procedures.

### **1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Provide within 10 working days after Contract award, schedule showing anticipated progress stages and final completion of Work within specified Contract duration.

### **1.4 PROJECT SCHEDULE REPORTING**

- .1 Update Project Schedule on weekly basis reflecting activity changes and completions, as well as activities in progress.
- .2 Interim reviews of work progress based on work schedule will be conducted periodically by the Departmental Representative and schedule shall be updated

by Contractor in consultation with, and approved by, the Departmental Representative.

- .3 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impacts with possible mitigation.

## **1.5 PROJECT MEETINGS**

- .1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.
- .2 Weather related delays with their remedial measures will be discussed and negotiated.

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not used.

## **Part 3 Execution**

### **3.1 NOT USED**

- .1 Not used.

**END OF SECTION**

**Part 1 General**

**1.1 ADMINISTRATIVE**

- .1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are co-ordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .10 Keep one reviewed copy of each submission on site.
- .11 Submit number of hard copies specified for each type and format of submittal and also submit in electronic format as pdf files. Forward pdf files on CD or through email.

**1.2 SHOP DRAWINGS AND PRODUCT DATA**

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Submit drawings stamped and signed by professional engineer registered or licensed in Northwest Territories, Canada.
- .3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated,

regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

- .4 Allow 7 working days for Departmental Representative's review of each submission.
- .5 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.
- .7 Accompany submissions with transmittal letter, in duplicate, containing:
  - .1 Date.
  - .2 Project title and number.
  - .3 Contractor's name and address.
  - .4 Identification and quantity of each shop drawing, product data and sample.
  - .5 Other pertinent data.
- .8 Submissions include:
  - .1 Date and revision dates.
  - .2 Project title and number.
  - .3 Name and address of:
    - .1 Subcontractor.
    - .2 Supplier.
    - .3 Manufacturer.
  - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
  - .5 Details of appropriate portions of Work as applicable:
    - .1 Fabrication.
    - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
    - .3 Setting or erection details.
    - .4 Capacities.
    - .5 Standards.
    - .6 Operating weight.
    - .7 Relationship to adjacent work.
- .9 After Departmental Representative's review, distribute copies.
- .10 Submit 3 prints and 1 electronic copy of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.

- .11 Submit 3 hard copies and 1 electronic copy of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
- .12 Submit 3 hard copies and 1 electronic copy of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accordance with specified requirements.
  - .2 Testing must have been within 3 years of date of contract award for project.
- .13 Submit 3 hard copies and 1 electronic copy of certificates for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
  - .2 Certificates must be dated after award of project contract complete with project name.
- .14 Submit 3 hard copies and 1 electronic copy of manufacturers instructions for requirements requested in specification Sections and as requested by Departmental Representative.
  - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .15 Submit 3 hard copies and 1 electronic copy of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Departmental Representative.
- .16 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .17 Delete information not applicable to project.
- .18 Supplement standard information to provide details applicable to project.
- .19 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .20 The review of shop drawings by Departmental Representative is for the sole purpose of ascertaining conformance with general concept.

- .1 This review shall not mean that the Departmental Representative approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
- .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

### **1.3 PHOTOGRAPHIC DOCUMENTATION**

- .1 Submit electronic copy of colour digital photography in jpg format, standard resolution as directed by Departmental Representative.
- .2 Photograph identification: name, number of project, date of exposure and detailed description of photograph.
- .3 Number of viewpoints: 4 locations.
  - .1 Viewpoints and their location as determined by Departmental Representative.
- .4 Frequency of photographic documentation: as directed by Departmental Representative.

### **1.4 CERTIFICATES AND TRANSCRIPTS**

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.
- .2 Submit transcription of insurance immediately after award of Contract.
- .3 Health and Safety requirements as per Section 01 35 29.06 "Health and Safety Requirements."

### **1.5 FEES, PERMITS AND CERTIFICATES**

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

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not Used.

**Part 3            Execution**

**3.1                NOT USED**

.1            Not Used.

**END OF SECTION**



**Part 1 General**

**1.1 REFERENCE STANDARDS**

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations (2017).
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .3 Northwest Territories
  - .1 Occupational Health and Safety Regulations (2015).

**1.2 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan: Within 7 working days after date of Notice to Proceed and prior to commencement of Work.
- .3 Submit copies of incident and accident reports.
- .4 Submit WHMIS MSDS - Material Safety Data Sheets.
- .5 Departmental Representative 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 Departmental Representative within 5 working days after receipt of comments from Departmental Representative.
- .6 Departmental Representative'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.
- .7 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

**1.3 FILING OF NOTICE**

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

**1.4 SAFETY ASSESSMENT**

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

**1.5 PROJECT/SITE CONDITIONS**

- .1 Work at site will involve contact with:
  - .1 Work around water.

**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 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.
- .3 Observe and enforce construction safety measures required by Canadian Construction Safety Code, Territorial Government, Worker's Compensation Board and municipal statutes and authorities.
- .4 In the event of a conflict between any provisions of above authorities, 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, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

## **1.8 COMPLIANCE REQUIREMENTS**

- .1 Comply with Safety Act, General Safety Regulations, R.R.N.W.T. 2015.

## **1.9 UNFORSEEN HAZARDS**

- .1 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, immediately stop work and advise Departmental Representative verbally and in writing.
- .2 Follow procedures in place for Employee's Right to Refuse Work as specified in the Occupational Health and Safety Regulations for Northwest Territories.

## **1.10 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 winter dredging.
  - .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.

**1.11 POSTING OF DOCUMENTS**

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

**1.12 CORRECTION OF NON-COMPLIANCE**

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

**1.13 WORK STOPPAGE**

- .1 Assign responsibility and obligation to Health and Safety Coordinator to stop or start Work when, at Health and Safety Coordinator's discretion, it is necessary or advisable for reasons of health or safety. Departmental Representative may also stop Work for health and safety considerations.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not used.

**END OF SECTION**

**Part 1 General**

**1.1 MEASUREMENT PROCEDURES**

- .1 Payment for environmental protection shall be by lump sum and shall include all labour, equipment and materials required for environmental protection as outlined in this section.

**1.2 REFERENCE STANDARDS**

- .1 American Society for Testing and Materials International (ASTM)
  - .1 ASTM D751-06 (2011) Standard Test Methods for Coated Fabrics.
  - .2 ASTM D2261-13 (2017) Standard Test Method for Tearing Strength of Fabrics by the Tongue (Single Rip) Procedure (Constant-Rate-of-Extension Tensile Testing Machine).
  - .3 ASTM D5034-09 (2013) Standard Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test).

**1.3 DEFINITIONS**

- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.
- .3 Ordinary High Water Mark: the usual or average level to which a body of Water rises at its highest point and remains for sufficient time so as to change the characteristics of the land. In flowing Waters (rivers, streams), this refers to as active channel/bank-full level, which is often the 1:2 year flood flow return level.

**1.4 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Prior to commencing construction activities, review all regulatory approval documents associated with the project, including the Sediment and Erosion Control Plan, the Environmental Management Plan and the Sahtu Water License Terms and Conditions.
- .3 Prior to commencing construction activities or delivery of materials to site, provide Waste Management Plan for review and approval by Departmental Representative. The Waste Management Plan shall be prepared in accordance

with the Mackenzie Valley Resource Management Act – Guidelines for Developing a Waste Management Plan.

- .1 The Waste Management Plan shall identify methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as clean-up water, dewatering of ground water, dredging waste water, disinfection water, hydrostatic test water, and water used in flushing of lines.
- .2 The Contractor shall manage waste and water with the objective(s) of minimizing the impacts of the project on the quantity and quality of Water in the receiving environment through the use of appropriate mitigation measures, monitoring, and follow-up actions.
- .4 Prior to commencing construction activities or delivery of materials to site, provide Spill Contingency Plan for review and approval by Departmental Representative. The Spill Contingency Plan shall be prepared in accordance with the Indigenous and Northern Affairs Canada (INAC) – Guidelines for Spill Contingency Planning.
  - .1 Spill Contingency Plan including procedures, instructions, and reports to be used in the event of an unforeseen spill of regulated substance.
  - .2 A copy of the Spill Contingency Plan shall be made available to all persons working on site.
- .5 Obtain written permission from the Town of Norman Wells to dispose of waste materials at the landfill.
- .6 Prior to the deposit of solid waste at a licensed waste facility, written verification of the facility's Water License compliance and capacity must be submitted to the Departmental Representative.

## **1.5 FIRES**

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

## **1.6 DRAINAGE**

- .1 Provide erosion and sediment controls as required in the Sediment and Erosion Control Plan and assure that control measures are in compliance with Municipal, Territorial and Federal regulations.
- .2 Provide temporary drainage and pumping required to keep excavations and site free from water.
- .3 Pumping water containing suspended materials into watercourse is prohibited.
- .4 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

## **1.7 WORK ADJACENT TO WATERWAYS**

- .1 Contractor to follow and abide by all environmental regulatory requirements associated with the work including, but not limited to, measures listed in the Sediment and Erosion Control Plan, Environmental Management Plan and the Sahtu Water License Terms and Conditions.

- .2 The Contractor shall take every reasonable precaution to protect the environment.
- .3 In-water work and shoreline work will be completed within the restricted activity timing window for fish and fish habitat.
  - .1 Ensure all Department of Fisheries and Oceans Canada mitigation measures are followed, and work is in compliance with the Fisheries Act, this specification, and any other federal, territorial and municipal agency requirements.
  - .2 Provide Departmental Representative for review and acceptance the mitigation measures that will be implemented prior to beginning work in the restricted timing window.
- .4 Turbidity curtains shall be installed between the work area and the Mackenzie River prior to dredging. The turbidity curtains shall remain in place and be maintained until the work is complete.
- .5 Construction equipment may not enter the river unless the river is frozen. If construction equipment will be located on the frozen surface of the river, it shall be removed from the river each night if the on-ice component of the projects spans more than one day.
- .6 Protect shoreline with a build-up of snow.
- .7 Construction equipment shall enter and leave the river at such a location and in such a manner that no disturbance to the river shore occurs.
- .8 Every effort will be made to minimize the introduction of sediment to the river 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 shall be clean and free of silt and clay.
- .9 Any impacts below ordinary high water mark that are not shown on the site plan are not permitted without written approval from the Departmental Representative. Up to 30 days may be required for approval.
- .10 Use waterway beds for borrow material only after written receipt of approval from Departmental Representative.
- .11 Waterways to be kept free of excavated fill, waste material and debris.
- .12 Design and construct temporary crossings to minimize erosion to waterways.
- .13 Do not skid logs or construction materials across waterways.
- .14 Avoid damage to shoreline.
- .15 Supply, install, and maintain approved erosion control blankets to unprotected slopes until revegetation is established.
- .16 Every effort shall be made to retain riparian vegetation, as it is critical for the protection of littoral and riparian fish habitats as well as for providing cover and enhancing bank stability.
- .17 Restore areas affected by construction or removal activities to previous or better condition.

- .18 Blasting is prohibited.
- .19 Areas used for stockpiling construction materials, including fill or other equipment storage shall 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.
- .20 All required machinery shall be supplied with appropriate spill containment kits as a precaution in the event of accidental fuel spills or hydraulic leaks. Additional kits shall be available on site with the capacity to contain any spills of deleterious substances that may be reasonably expected to occur. Contractors shall ensure that all personnel are familiar with the spill kits.

## **1.8 VERTICAL TURBIDITY CURTAIN**

- .1 The Contractor shall isolate the work area with an approved vertical double turbidity curtain to prevent the drift of sediment from the work area into the river, as shown on the Drawings. The turbidity curtains must extend from the top of the water to the river bottom. The turbidity curtains must be left in place until all suspended sediments have settled out. On completion of construction, carefully remove the turbidity curtains to ensure settled sediment is not disturbed. The maximum water velocity may be considered 5.5 km/h.
- .2 Turbidity Curtain: polypropylene permeable geotextile body.
  - .1 Float size: minimum 200mm x 200mm
  - .2 Buoyancy: minimum 277 N/m
  - .3 Grab tensile strength: to ASTM D5034, minimum 1766 x 1659 N
  - .4 Tongue tear strength: to ASTM D2261, minimum 427 x 383 N
  - .5 Hydrostatic Resistance: to ASTM D751-95, minimum 2650 kPa
- .3 Costs for supply, installation, maintenance and removal of the turbidity curtains are to be included in the lump sum amount for environmental protection.

## **1.9 POLLUTION CONTROL**

- .1 Comply with the pollution prevention provisions of The Fisheries Act.
- .2 Maintain temporary erosion and pollution control features installed under this Contract.
- .3 Do not allow debris of any type to enter waterway.
- .4 Do not bury rubbish and waste materials on site unless approved by Departmental Representative.
- .5 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.
- .6 Locate temporary fuel storage at least 100 metres from the Ordinary High Water Mark of any Watercourse and comply with Territorial Environmental Legislation.
- .7 Refueling, servicing or cleaning of equipment within 100 metres of shore is prohibited. All activities including maintenance procedures and vehicular refuelling shall be controlled to prevent the entry of petroleum products, debris, slash, rubble or other deleterious substances into the Watercourse. Drip pans are to be used during refueling.

- .8 Contractor shall ensure all equipment operating on project is free of external fluid leaks, grease, oil and mud.
- .9 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 Territorial Environment Legislation.
- .10 Contractor shall ensure that all materials required for the clean-up of spillages are readily accessible on-site at all times, to the satisfaction of the Departmental Representative.
- .11 If a spill or unauthorized discharge occurs during the project, the Contractor shall:
  - .1 Implement the Spill Contingency Plan.
  - .2 Report the incident immediately in accordance with the *NT-NU Spill Reporting Protocol*, the NT-NU Spill Report Form NWT 1752/0593, and the Instructions for Completing the NT-NU Spill Report Form, as follows:
    - .1 Telephone: (867) 920-8130;
    - .2 Fax: (867) 873-6924; or
    - .3 E-mail: spills@gov.nt.ca.
  - .3 Report each spill or Unauthorized Discharge to the Departmental Representative within 24 hours.
  - .4 Submit a detailed report on each spill or Unauthorized Discharge, including descriptions of causes, response actions, and any changes to procedures to prevent similar occurrences in the future, to the Departmental Representative within 30 days of initially reporting the incident.
- .12 Any leakages of fuels, lubricants, or other liquids from construction equipment must be cleaned up immediately to the satisfaction of the Departmental Representative. Any part of the Work that has become affected by any liquid leakages or spillages, as determined by the Departmental Representative, shall be reconstructed and/or replaced to the satisfaction of the Departmental Representative and at the expense of the Contractor. The cost for clean-up and disposing of any materials off-site, as a result of leakages or spillages, shall be paid by the Contractor.

#### **1.10 NOTIFICATION**

- .1 Departmental Representative will notify Contractor in writing of observed noncompliance with Federal, Territorial or Municipal environmental laws or regulations, permits, and other elements of Sediment and Erosion Control Plan, Environmental Management Plan, Waste Management Plan, and Spill Contingency Plan.
- .2 Contractor: after receipt of such notice, inform Departmental Representative of proposed corrective action and take such action as approved by Departmental Representative.
  - .1 Do not take action until after receipt of written approval by Departmental Representative.



- .3 Departmental Representative will issue stop order of work until satisfactory corrective action has been taken.
- .4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 CLEANING**

- .1 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.

**END OF SECTION**

**Part 1            General**

**1.1            QUALITY CONTROL**

- .1      Quality Control measures shall be completed by the Contractor.
- .2      No additional payment will be made for providing quality control.

**1.2            INSPECTION**

- .1      Allow Departmental Representative 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 minimum 72 hours notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative.
- .3      If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4      Departmental Representative 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, the Contractor shall correct such Work and pay cost of examination and correction.

**1.3            INDEPENDENT INSPECTION AGENCIES**

- .1      Independent inspection/testing agencies may be engaged by Departmental Representative for the purpose of inspecting and/or testing portions of Work. The Contractor shall allow Departmental Representative and/or inspection/testing agency access to Work, on site and off site.
- .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. The Contractor shall correct defect and irregularities as advised by Departmental Representative at no cost to Owner and pay costs for re-testing and re-inspection.

**1.4            ACCESS TO WORK**

- .1      Allow inspection/testing agencies access to Work.
- .2      Co-operate to provide reasonable facilities for such access.

**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 Departmental Representative 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 Departmental Representative 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 Departmental Representative.

## **1.6 REPORTS**

- .1 Submit 3 copies of inspection and test reports to Departmental Representative.

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not Used.

## **Part 3 Execution**

### **3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1 General**

**1.1 INSTALLATION AND REMOVAL**

- .1 Prepare site plan indicating proposed location and dimensions of lay down area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.
- .2 Maintain access and exits.
- .3 Provide construction facilities in order to execute work expeditiously.
- .4 Remove from site all such work after use.

**1.2 SITE STORAGE/LOADING**

- .1 Confine work and operations of employees to area indicated on the Drawings. Do not unreasonably encumber premises with products.
- .2 Do not load or permit to load any part of Work with weight or force that will endanger Work.

**1.3 CONSTRUCTION PARKING**

- .1 Parking will be permitted on site provided it does not disrupt performance of Work.
- .2 Provide and maintain adequate access to project site.

**1.4 FACILITIES**

- .1 Provide space at close proximity to the site for project office heated to 22 degrees C, lighted and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table.
- .2 Provide marked and fully stocked first-aid case in a readily available location.
- .3 Subcontractors to provide their own offices as necessary.
- .4 Provide clean, functioning truck filled with fuel for Departmental Representative's sole use for the total duration of the Work.

**1.5 EQUIPMENT, TOOL AND MATERIALS STORAGE**

- .1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

**1.6 SANITARY FACILITIES**

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.

- .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

## **1.7 PROTECTION AND MAINTENANCE OF TRAFFIC**

- .1 Provide access and temporary relocated roads as necessary to maintain traffic.
- .2 Provide snow fencing, wooden barriers, or other approved hoarding to prevent vehicles and pedestrians from accessing the site during construction.
- .3 Contractor shall provide appropriate signage for vehicle and pedestrian protection.
- .4 All hoarding shall include delineation and reflectors to stand out at nightfall.
- .5 Dust control: adequate to ensure safe operation at all times.
- .6 Provide snow removal during period of Work.
- .7 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs.
- .8 Protect travelling public from damage to person and property.
- .9 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.
- .10 Verify adequacy of existing roads and allowable load limit on these roads.  
Contractor: responsible for repair of damage to roads caused by construction operations as determined by the Departmental Representative to the previous existing condition or better as approved by the Departmental Representative.
- .11 Construct access and haul roads necessary.
- .12 Haul roads: constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided.
- .13 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .14 Location, grade, width, and alignment of construction and hauling roads: subject to approval by Departmental Representative.
- .15 Lighting: to assure full and clear visibility for full width of haul road and work areas during night work operations.
- .16 Remove, upon completion of work, haul roads designated by Departmental Representative.

## **1.8 CLEAN-UP**

- .1 Remove construction debris, waste materials, packaging material from work site daily.
- .2 Clean dirt or mud tracked onto paved or surfaced roadways.
- .3 Store materials resulting from demolition activities that are salvageable.

- .4 Stack stored new or salvaged material not in construction facilities.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

- .1 Not Used.

**END OF SECTION**

**Part 1        General**

**1.1           SURVEY REFERENCE POINTS**

- .1      Horizontal and vertical control points will be set up by the Departmental Representative prior to the start of construction.
- .2      Locate, confirm and protect control points prior to starting site work. Notify Departmental Representative of any discrepancies in the location or elevation of control points. Preserve permanent reference points during construction.
- .3      Make no changes or relocations without prior written notice to Departmental Representative.
- .4      Report to Departmental Representative when reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
- .5      Any permanent reference points disturbed during the course of the Work shall be replaced by a Registered Land Surveyor at the expense of the Contractor.

**1.2           SURVEY REQUIREMENTS**

- .1      Employ competent personnel to set grades and lay out work in accordance with lines and grades established by the Departmental Representative. Supply stakes and other survey markers required for this work.
- .2      The Contractor shall assume full responsibility for detail, dimensions, and elevations measured from the lines, grades and elevations so established.

**1.3           RECORDS**

- .1      Maintain a complete, accurate log of control and dredging elevations as work progresses.

**Part 2        Products**

**2.1           NOT USED**

- .1      Not Used.

**Part 3        Execution**

**3.1           NOT USED**

- .1      Not Used.

**END OF SECTION**

**Part 1        General**

**1.1            PROJECT CLEANLINESS**

- .1        Maintain Work in tidy condition, free from accumulation of waste products and debris.
- .2        Remove waste materials from site at regularly scheduled intervals for disposal. Do not burn waste materials on site.
- .3        Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

**1.2            FINAL CLEANING**

- .1        When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.

**1.3            WASTE MANAGEMENT AND DISPOSAL**

- .1        Separate waste materials for reuse and recycling.

**Part 2        Products**

**2.1            NOT USED**

- .1        Not Used.

**Part 3        Execution**

**3.1            NOT USED**

- .1        Not Used.

**END OF SECTION**



**Part 1 General**

**1.1 ADMINISTRATIVE REQUIREMENTS**

- .1 Request Departmental Representative inspection after Contractor has substantially completed the Work, inspected the work and repaired the deficiencies.
- .2 Departmental Representative and Contractor will conduct a joint inspection to identify obvious defects or deficiencies. Contractor shall correct Work accordingly.
- .3 Request Departmental Representative Final Inspection after all deficiencies have been corrected. Repair all Works outstanding as observed by the Departmental Representative during this inspection.

**1.2 FINAL CLEANING**

- .1 Clean in accordance with Section 01 74 11 – Cleaning.
  - .1 Remove surplus materials, excess materials, rubbish, tools and equipment.
- .2 Waste Management: separate waste materials for recycling or reuse.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

**Part 1        General**

**1.1            ACTION AND INFORMATIONAL SUBMITTALS**

- .1        Provide submittals in accordance with Section 01 33 00- Submittal Procedures.

**1.2            FINAL SURVEY**

- .1        Submit log of final dredging elevations in accordance with Section 01 71 00- Examination and Preparation, certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.

**Part 2        Products**

**2.1            NOT USED**

- .1        Not Used.

**Part 3        Execution**

**3.1            NOT USED**

- .1        Not Used.

**END OF SECTION**

**Part 1 General**

**1.1 MEASUREMENT AND PAYMENT**

- .1 Payment for mobilization and demobilization shall be lump sum and shall include all works required to:
  - .1 Mobilize equipment, materials, tools, supplies, labour and supervisors.
  - .2 Insurance(s) required for the duration of construction.
  - .3 Fees, certificates and work permits.
  - .4 Temporary construction facilities.
  - .5 Signage.
  - .6 Securing work and storage areas.
  - .7 Vehicle and pedestrian protection.
  - .8 Daily site cleaning.
  - .9 Demobilization of aforementioned items upon completion of construction.
- .2 Dredging: will be measured in Cubic Meters, In-place Measurement (CMPM), determined from the pre-dredge survey taken before dredging and the final elevations approved by Departmental Representative after dredging completion. The unit cost includes any additional topographic and bathymetric survey if required.
- .3 Only material excavated above grade plane and within side slopes indicated or specified will be measured.
- .4 No additional payment for downtime or delays incurred during periods when no dredging is permitted.
- .5 Removal of infilling material will not be measured for payment.
- .6 Payment shall include disposal of dredge material. Location of dredge spoils disposal site and required permitting to be determined and obtained by the Contractor.
  - .1 Proposed disposal site to be approved by the Departmental Representative.
- .7 Restoration of adjacent surfaces outside areas of dredging shall be considered incidental and will not be measured separately for payment.

**1.2 REFERENCE STANDARDS**

- .1 Justice Canada
  - .1 Canada Shipping Act - Collision Regulations (C.R.C., c.1416).

**1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit a list of equipment to be mobilized and any fuel storage required for completion of the work to the Departmental Representative prior to commencing

construction. Include the locations, loadings and detailed descriptions of heavy equipment and vehicles to be supported on the existing structure.

- .3 Submit a dredging plan to the Departmental Representative a minimum of 7 working days prior to the commencement of work, including:
  - .1 Work drawings showing the extents of dredging and required excavation depths.
  - .2 Layout and description of dredging sequence and proposed equipment.

#### **1.4 DEFINITIONS**

- .1 Chart Datum: permanently established plane from which soundings or tide heights are referenced, usually Lowest Normal Water Level (LWL).
- .2 Cleared Area: area of dredging accepted as complying with plans and specifications.
- .3 Co-ordinates:
  - .1 U.T.M.: Universal Transverse Mercator projection.
  - .2 M.T.M.: Modified Transverse Mercator projection.
  - .3 U.T.M. or M.T.M. Co-ordinates: plane rectangular co-ordinates used in grid system in which grid network is applied to U.T.M. or M.T.M. projection. Horizontal control information as indicated.
- .4 Debris: pieces of wood, wire rope, scrap steel, rubber tires, pieces of concrete and other waste materials.
- .5 Dredging: excavating, transporting and disposing of underwater materials.
- .6 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 to exist above grade and within dredge limits, unless otherwise specified.
- .7 Grade: plane above which material is to be dredged.
- .8 Measurements:
  - .1 CMPM: cubic metres place measurement at dredging site.
- .9 Mechanical Dredging Plant: equipment comprising of the following: clamshell, dragline, dipper or backhoe dredge with dump scows.
- .10 Obstructions: material having individual volumes of 1.5m<sup>3</sup> or more.
- .11 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.
- .12 Sub-grade: plane parallel to and 300mm below grade.

#### **1.5 ADMINISTRATIVE REQUIREMENTS**

- .1 Scheduling:

- .1 Submit to Departmental Representative 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 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.

## **1.6 QUALITY CONTROL**

- .1 Regulatory Requirements:
  - .1 Comply with municipal, territorial and national codes and regulations relating to project.

## **1.7 SITE CONDITIONS**

- .1 Contractor to visit and inspect work site and become thoroughly familiar with extent and nature of Work and conditions affecting Work before tendering.
- .2 Take necessary steps to become fully familiar with potential inclement weather and river conditions in this area.
- .3 Site Environmental Requirements.
  - .1 Perform work in accordance with Section 01 35 43 – Environmental Procedures.
  - .2 Ensure that work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.
  - .3 Do not dispose of waste of volatile materials including but not limited to, mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers.
    - .1 Ensure proper disposal procedures are maintained throughout the project.
  - .4 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers or onto adjacent properties.
  - .5 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authorities.

## **1.8 DREDGING SEQUENCE**

- .1 Supply Departmental Representative with plan of dredging sequence and stages.
- .2 Departmental Representative may direct Contractor to alter sequence of dredging areas.

## **1.9 DREDGING PLANT**

- .1 Dredging plant used for work to be of sufficient capacity and in good operating condition to satisfactory complete Work within time schedule and in accordance with specifications.

**Part 2 Products**

**2.1 DREDGING EQUIPMENT**

- .1 Contractor to determine required equipment necessary to dredge material to elevation shown on the drawings, and to dispose of dredged material at approved locations.
- .2 Leave machinery running only while in use, except where extreme temperatures prohibit shutting machinery down.

**Part 3 Execution**

**3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL**

- .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and waterways, according to sediment and erosion control plan, specific to site.
- .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction.
- .3 Remove erosion and sedimentation controls, and restore and stabilize areas disturbed during the completion of work to the approval of the Departmental Representative.

**3.2 EXAMINATION**

- .1 Do Work in accordance with Section 01 35 29.06 – Health and Safety Requirements and Section 01 35 43 – Environmental Procedures.
- .2 Verification of location:
  - .1 Work comprises of dredging of areas located within 15m out from the face of the wharf as indicated on the Drawings.
- .3 Surveys:
  - .1 Pre-dredge survey of dredge area was completed by the Departmental Representative and is included on the Drawings.
  - .2 No area will be dredged prior to Departmental Representative's and Contractor's mutual acceptance of pre-dredge survey for that area.

**3.3 LAYOUT OF WORK**

- .1 Immediately upon entering site for purpose of beginning work on this project, locate reference points, confirm and accept locations and take proper action necessary to prevent their disturbance.

**3.4 DREDGING**

- .1 Dredge area located within 15 m out from the face of the wharf to the design elevations indicated on the Drawings. Dredging shall stop prior to the design elevation if stiff shale material is reached.

- .2 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.
- .3 Double-handling of dredged material is not permitted within the site.
- .4 Remove infilling in dredge areas which occurs prior to acceptance by Departmental Representative.
- .5 Immediately notify Departmental Representative upon encountering object which might be classified as obstruction. By-pass object after clearly marking its location and continue Work.
- .6 Final dredging elevations shall be +/- 100mm from design elevations.
- .7 Contractor to propose means and methods of confirming final dredge elevations for daily approval by the Departmental Representative.

### **3.5 DISPOSAL OF DREDGED MATERIALS**

- .1 Do not dispose of dredged materials in open lakes, rivers or streams.
- .2 Dispose of dredged material at approved land disposal site.
- .3 Ensure truck boxes are tightly sealed and do not leak dredged material during transportation between dredging site and disposal site. If spillage or leakage of dredged material occurs, stop work until remedial measures are taken.

### **3.6 DISPOSAL OF DEBRIS**

- .1 Do not dispose of debris in open lakes, rivers or streams.
- .2 Dispose of debris at approved land disposal site.

### **3.7 ACCEPTANCE OF WORK**

- .1 Successful completion dredging will be determined by Departmental Representative based on approved log of dredging elevations.

### **3.8 SITE QUALITY CONTROL**

- .1 Site test and inspections:
  - .1 Co-operate with Departmental Representative on inspection of Work and provide assistance when requested.
- .2 Non-conforming work:
  - .1 If, as result of incomplete Work, additional verification of depths becomes necessary, additional costs involved shall be paid by Contractor.
  - .2 Re-dredge unsatisfactory Work and verify depths to approval of Departmental Representative.

### **3.9 CLEANING**

- .1 Progress Cleaning: leave Work area clean at end of each day as per Section 01 74 11 - Cleaning.

- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment, as per Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse and recycling.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.
  - .2 Contaminated sediments must be disposed of in confined disposal facility.
  - .3 Metals, wood and recyclable materials removed during the dredging activities must be diverted to appropriate recycling facilities.
  - .4 Dispose of dredged material by depositing in disposal areas in manner approved by Departmental Representative.

### **3.10 SITE RESTORATION**

- .1 The contractor shall take care to ensure all existing structures and site conditions are not damaged. An inspection in the spring following the work shall be performed to determine the extent of damaged areas that require restoration.
- .2 The contractor shall restore the site, access routes, the drying and/or stockpiling areas, and all other areas used during the construction to their previous existing condition or better as approved by the Departmental Representative.

**END OF SECTION**