

**F1571-165081/A**  
**DEEP BAY SMALL CRAFT HARBOUR**  
**ROCK SUPPLY AND SHORELINE STABILIZATION**

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## Section 01 11 00 – Summary of Work

### Part 1 General

#### 1.1 RELATED REQUIREMENTS

- .1 01 13 00 - GENERAL REQUIREMENTS
- .2 01 33 00 – SUBMITTAL PROCEDURES
- .3 01 35 29.06 - HEALTH AND SAFETY REQUIREMENTS
- .4 01 35 43 - ENVIRONMENTAL PROCEDURES
- .5 01 45 00 - QUALITY CONTROL
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- .7 01 74 21 – CONSTRUCTION DEMOLITION WASTE MANAGEMENT AND DISPOSAL
- .8 01 77 00 - CLOSEOUT PROCEDURES
- .9 11 01 00 - HEAVY EQUIPMENT RENTAL
- .10 31 00 00 – EARTHWORK SHORT FORM

#### 1.2 DEFINITIONS

- .1 Throughout contract documents, the words “Site,” “Owner,” “Contracting Authority,” “Harbour Authority,” “Contractor,” “Engineer,” or “Department,” shall be defined as follows:
  - .1 Site  
“Site” referred to herein is Deep Bay Small Craft Harbour, 180 Burne Road Bowser, BC, V0R 1G0, Canada.
  - .2 Contracting Authority  
“Contracting Authority” referred to herein is Public Works and Government Services Canada – Pacific Region (PWGSC), 800 Burrard Street, 12th Floor, Vancouver, BC V6Z 2V8, Canada.
  - .3 Owner  
“Owner” referred to herein is the Department of Fisheries and Oceans Canada – Small Craft Harbours, Suite 200-401 Burrard Street, Vancouver, BC V6C 3S4.
  - .4 Engineer/Departmental Representative  
“Engineer/Departmental Representative” referred to herein is commonly an employee of the Owner assigned by the Owner as the Engineer and Technical Authority for the project. The Engineer may be a sub-contract Engineer for technical and inspection purposes and the Technical Authority must still be an employee of the Owner.
  - .5 Contractor  
“Contractor” referred to herein is the party accepted by the Owner, with whom a formal contract is signed, to complete the work of this project.
  - .4 Department  
The Department of Fisheries and Oceans, Canada.

#### 1.3 DRAWINGS

- .1 DB-0 “DEEP BAY HARBOUR MANAGEMENT DRAWINGS”

- .2 DB-1 "DEEP BAY SITE PLAN"
- .3 DB-RW-001 "WORK AREAS"
- .4 69-D5 "APPROACH AND WHARFHEAD DETAILS"

#### 1.4 LOCATION

- .1 Deep Bay Small Craft Harbour (the Project Site) is located in Bowser, British Columbia, between Qualicum Beach and Fanny Bay on Vancouver Island.
- .2 Project Site address is 180 Burne Rd, Bowser, BC V0R 1G0.

#### 1.5 WORK COVERED BY CONTRACT DOCUMENTS

- .1 Work covered in this section comprises of supplying rock materials and heavy equipment complete with operators and labourers to the Site. Work tasks as directed by the Engineer.
- .2 Mobilization of excavator equipment and delivery of materials to commence no later than March 1, 2017.
- .3 The work shall be completed no later than May 31, 2017.
- .4 All work under this agreement covers the furnishings of all labour, materials, tools, supervision, transport and equipment necessary for the provision of heavy equipment supply complete with the operators for the Site as specified herein.
- .5 Work Description
  - .1 Work under this contract consists of the procurement for operating hours for equipment, operators, labourers and the supply of materials to complete designated heavy marine construction. The Owner/Engineer will identify tasks in advance and provide drawings, specifications and/or on-site direction. The Contractor will provide a work plan and schedule for tasks as required.
  - .6 The Work includes but is not limited to:
    - .1 General Site Excavation
    - .2 Site Grading and Sloping
    - .3 Demolition of In-Ground and Creosote Timber Structures
    - .4 Removal and Placement of Fill
    - .5 Backfill and Compact Fill
    - .6 Material Delivery and Placement
    - .7 Rip-Rap Placement

#### 1.6 UNIT PRICE TABLE

- .1 The following are in reference to work items as detailed in the Unit Price Table.

##### 1.0 MOBILIZATION/DEMOBILIZATION

- .1 300 Series Excavator – Mob/Demob

The Lump Sum cost for this item shall include the supply of materials, equipment, tools, services, labour and all things necessary to complete the following:

- .1 Mobilization/demobilization of 300 Series Excavator and Operator as per 1.6.1.2.1.
- .2 Include supply of steel transition ramp capable of supporting a 10T box truck across a span of 6m to be installed at the end of work day to maintain vehicle access to the wharf until the next shift.
- .2 All site prep and clean-up associated with this equipment.

.1 200 Series Excavator – Mob/Demob

The Lump Sum cost for this item shall include the supply of materials, equipment, tools, services, labour and all things necessary to complete the following:

- .1 Mobilization/demobilization of 200 Series Excavator and Operator as per 1.6.1.2.2.
- .2 All site prep and clean-up associated with this equipment.

**2.0 EQUIPMENT SUPPLY**

.1 300 Series Excavator and Operator

The cost per hour is based on weekday rental of “300 Series Excavator and Operator” and includes the following:

- .1 Supply 300 Series Excavator and operator conforming to Section 11 01 00 - Heavy Equipment Rental.
- .2 Minimum of four (4) hour rental per day, maximum of eight (8) hour rental per day.
- .3 Excavator to be equipped with environmentally friendly, biodegradable hydraulic oil.
- .4 Access to work areas is tide dependent. Daily work schedule to be coordinated in advance with Engineer.
- .5 All operations to be conducted in accordance with Section 01 35 43 – Environmental Procedures and Best Management Practices.
- .6 Work to include placement of supplied rock materials, excavation of upland and demolition of existing timber wharf and loading for disposal as directed by the Engineer.
- .7 See Drawing DB-RW-001 for general locations of work.
- .8 Footprints A and D on Drawing DB-RW-001 to be laid out in advance by Owner to define boundaries for rock placement. Quantities and type of rock delivered to be coordinated in advance with Engineer.

.2 200 Series Excavator and Operator

The cost per hour is based on weekday rental of “200 Series Excavator and Operator” and includes the following:

- .1 Supply 200 Series Excavator and operator conforming to Section 11 01 00 – Heavy Equipment Rental.
- .2 Minimum of four (4) hour rental per day, maximum of eight (8) hour rental per day.
- .3 Excavator to be equipped with environmentally friendly, biodegradable hydraulic oil.
- .4 Access to work areas is tide dependent. Daily work schedule to be coordinated in advance with Engineer.
- .5 All operations to be conducted in accordance with Section 01 35 43 – Environmental Procedures and Best Management Practices.
- .6 Work to include placement of supplied rock materials, excavation of upland and demolition of existing timber wharf and loading for disposal as directed by the Engineer.
- .7 See Drawing DB-RW-001 for general locations for work.
- .8 Footprints A and D on Drawing DB-RW-001 to be laid out by Owner in advance to define boundaries for rock placement. Quantities and type of rock delivered to be coordinated in advance with Engineer.

### **3.0 CREW RENTAL**

#### **.1 Misc. Labour Crew**

The cost per man hour based on a regular 8 hour day of “Misc. Labour Crew” includes the following:

- .1 Supply minimum three (3) man crew, which includes a foreman for the coordination and safety of the crew.
- .2 Man hours are calculated as the summation of hours that each crew member worked.
- .3 The crew shall be professional, self-sufficient and capable of completing standard heavy civil construction work in accordance with direction from the Engineer.
- .4 Work performed by Misc. Labour Crew to include cutting/removal of bolts and other hardware, cutting of piling at mudline level, disconnecting and relocating services as necessary to assist in wharf demolition by excavator.
- .5 Crew to be equipped chainsaws, pry bars and standard hand tools.
- .6 All operations to be conducted in accordance with Section 01 35 43 – Environmental Procedures and Best Management Practices.
- .7 Cost to include any expenses associated with board, lodging and transportation of crew necessary to perform work.

### **4.0 DEMOLITION**

#### **.1 Treated Timber Disposal**

The cost per Tonne of Treated Timber Disposal includes the following:

- .1 Removal of demolition of treated creosote, salt treated timber, asphalt surfacing and hardware components of existing wharf from the Project Site.
- .2 Material will be priced per Tonne disposed from the Project Site.

- .3 Labour for loading of demolished materials to be included under Excavator rental units 1.6.1.2.1 and 1.6.1.2.2.
- .4 All demolition to be performed as per Section 01 74 21 – Construction Demolition Waste Management and Disposal.
- .5 All operations to be conducted in accordance with Section 01 35 43 – Environmental Procedures and Best Management Practices.
- .6 Stockpile areas for demolished materials and schedule for removal from site to be approved by Owner and coordinated in advance with the Engineer.
- .7 Contractor to provide weigh scale receipts for material disposed.

## **5.0 MATERIAL SUPPLY**

### **.1 Core**

The cubic meter cost of Supply of Core includes the following:

- .1 Supply of Core as per Section 31 00 00 – Earthwork Short Form.
- .2 Material will be priced per Tonne delivered to Project Site.
- .3 Material spec sheet will be submitted and approved by the Engineer before delivery.
- .4 Contractor to provide weigh scale receipts for supplied material.
- .5 Material to be delivered in general to either Footprint A or Footprint B as identified on Drawing DB-RW-001. Location for specific material types to be coordinated in advance by the Engineer.
- .6 Contractor to allow for delivery of a minimum of 200T of core material to the Site per day as directed by the Engineer.

### **.2 Road Base**

The cubic meter cost of Supply Road Base includes the following:

- .1 Supply of Road Base as per Section 31 00 00 – Earthwork Short Form.
- .2 Material will be priced per Tonne delivered to Project Site.
- .3 Material spec sheet will be submitted and approved by the Engineer before delivery.
- .4 Contractor to provide weigh scale receipts for supplied material.
- .5 Material to be delivered in general to either Footprint A or Footprint B as identified on Drawing DB-RW-001. Location for specific material types to be coordinated in advance by the Engineer.

### **.3 Rip-Rap Rock**

The cubic meter cost of Supply Rip-Rap includes the following:

- .1 Supply of Rip-Rap as outlined in Section 31 00 00 – Earthwork Short Form.
- .2 Material will be priced per Tonne delivered to Project Site.
- .3 Material spec sheet will be submitted and approved by the Engineer before delivery.
- .4 Contractor to provide weigh scale receipts for supplied material.

- .5 Material to be delivered in general to either Footprint A or Footprint B as identified on Drawing DB-RW-001. Location for specific material types to be coordinated in advance by the Engineer.
- .6 Contractor to allow for delivery of a minimum of 200T of Rip-Rap to the Site per day as directed by the Engineer.

## **6.0 OPTIONAL WORK**

The items outlined below are reserved for unforeseen site conditions and are to be allotted at the discretion of the Departmental Representative.

### **.1 300 Series Excavator Standby**

The cost per day of 300 Series Excavator Standby includes the following:

- .1 Standby cost to leave 300 Series Excavator equipment at Project Site during regular work week without operator.
- .2 Non-working weekend days do not count as standby.
- .3 Date(s) and location(s) for standby equipment to be coordinated with the Engineer and approved by the Owner in writing in advance.
- .4 Cost of optional work items is not included in the evaluation of tender and will be exercised at the discretion of the Department Representative.

### **.2 200 Series Excavator Standby**

The cost per day of 200 Series Excavator Standby includes the following:

- .1 Standby cost to leave 200 Series Excavator equipment at Project Site during regular work week without operator.
- .2 Non-working weekend days do not count as standby.
- .3 Date(s) and location(s) for standby equipment to be coordinated with the Engineer and approved by the Owner in writing in advance.
- .4 Cost of optional work items is not included in the evaluation of tender and will be exercised at the discretion of the Department Representative.

## **1.7 WORK SEQUENCE AND OWNER OCCUPANCY**

- .1 Mobilization of excavator equipment and delivery of rock materials expected to take place between February 15, 2017 and the contract end date.
- .2 Contractor shall be notified by Owner a minimum of 15 calendar days in advance of required mobilization date.
- .3 For each mobilization, the Contractor shall only mobilize/demobilize equipment items (from Section 01 11 00) approved by the Owner.
- .4 All projects including clean-up and final demobilization must be completed by May 31, 2017.
- .5 Co-ordinate Project Schedule with Owner and Harbour Authority.

- .1 Vehicle and pedestrian access to wharf to be maintained from 6:00am – 9:00am during construction days by installing transition ramp spanning the gap between placed rock materials and edge of demolished wharf. End of day arrangement of site to be coordinated with the Engineer.
- .2 Co-operate with Harbour Authority in scheduling operations to minimize conflict and to facilitate harbour access and user operations.

**1.8 CONTRACTOR USE OF PREMISES**

- .1 Co-ordinate use of premises under direction of Owner.
- .2 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.
- .3 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by Engineer.
- .4 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

**1.9 DOCUMENTS REQUIRED**

- .1 Maintain at job site, one copy each document as follows:
  - .1 Contract Drawings, Specifications and any Addenda.
  - .2 Change Orders and other Modifications to Contract.
  - .3 Copy of Approved Work Schedule.
  - .4 Health and Safety Plan and Other Safety Related Documents.
  - .5 All regulatory permits required for the work
  - .6 Associated Best Management Practices documentation.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not used.

**END OF SECTION**

## **Section 01 13 00 – General Requirements**

### **Part 1 General**

#### **1.1 RELATED REQUIREMENTS**

- .1 01 11 00 - SUMMARY OF WORK
- .2 01 35 29.06 - HEALTH AND SAFETY REQUIREMENTS

#### **1.2 INSPECTION OF SITE**

- .1 It is the responsibility of each bidder to obtain all necessary information pertaining to local site conditions and existing works, beyond the information provided in this Specification and accompanying drawing(s).

#### **1.3 PERMITS, CERTIFICATES, LAWS AND ORDINANCES**

- .1 The Contractor must, at his own expense, procure all permits, certificates and licenses required of him by law for the execution of his work under this contract. He shall comply with all Federal, Provincial or Municipal laws, ordinances or rules and regulations relating to the performance of his work and in force during the duration of this contract.
- .2 The Contractor is required to give all required notices, comply with all local, municipal, provincial, and federal laws, ordinances, codes, by-laws, rules and regulations relating to the work.
- .3 All work to be done in accordance with Work Safe BC regulations.
- .4 The Contractor shall comply with Federal and Provincial laws, orders and regulations concerning the control and abatement of water and air pollution.
- .5 The Contractor shall comply with the requirements of any local or other Noise by-laws.

#### **1.4 MINIMUM STANDARDS**

- .1 In the absence of other standards specified in the Contract Documents, all work is to conform to, or exceed, the minimum standards of the Canadian Government Specifications Boards, the Canadian Standards Association, the American Society for Testing of Materials, or the National Building Code of Canada, whichever is applicable.
- .2 All work to be done in accordance with Work Safe BC regulations.

#### **1.5 INTERFERENCE WITH OPERATION**

- .1 The Contractor shall obey all navigation regulations and conduct operations so as to interfere as little as possible with the use of berthing spaces, fairways and passages. Install and maintain any and all protection to navigation as may be required by any properly constituted authority or by the Owner. During the course of construction and clean-up, do not dispose of surplus, waste or demolished materials in navigable waters.

- .2 The Contractor shall upon instruction of the Owner or Engineer, promptly remove any of the Contractor's equipment located outside the specified work area and obstructing any harbour operation.

#### **1.6 COMPLIANCE WITH STANDARD SPECIFICATIONS CODES AND REGULATIONS**

- .1 Unless expressly stated to the contrary, all materials, equipment and articles furnished by the Contractor shall comply with the applicable provisions of the standards of the Canadian Standards Association (CSA) or the Canadian Government Specification Board (CGSB) with the applicable provisions of the American Society for Testing Materials (ASTM), National Dredging Association (NFPA), American Concrete Institute (ACI) and the American Water Works Association (AWWA).
- .2 The Contractor shall follow all regulations in accordance with the Fisheries Act. Care shall be taken not to release any deleterious materials to fish habitat into the water.
- .3 All work to be done in accordance with Work Safe BC regulations.

#### **1.7 CONTRACTOR'S PERSONNEL**

- .1 The Contractor's representative on site shall be completely familiar with the method of work to be employed. Such personnel shall remain on site for the duration of the work.

#### **1.8 RESPONSIBILITY TO PERSONNEL**

- .1 The Contractor shall have full responsibility for the board, lodging and transportation of his personnel and subcontractors. The cost for this shall be incorporated into his unit prices. He shall comply with all labor requirements, and Worker's Compensation regulations.

#### **1.9 BARRIERS, LIGHTS AND WATCHING**

- .1 The Contractor shall provide all requisite barriers, fences, warning signs, lights and watching for the protection of persons and property on or adjacent to the Site.

#### **1.10 PROGRESS REPORT**

- .1 The Contractor shall keep a daily record of progress of the work available for inspection by the Engineer.
- .2 The daily record shall include particulars of weather conditions, number of men working, plant and equipment working and work performed.

#### **1.11 ENGINEER'S ACCESS**

- .1 The Contractor shall provide access to the work for the Engineer's inspectors and surveyors as required.

#### **1.12 PERMITS AND ROYALTIES**

- .1 Permits and licenses required for the Contractors work are the responsibility of the Contractor and shall be for the Contractor's account. The Contractor shall have the appropriate business license.

**1.13 PROTECTION OF EXISTING STRUCTURES**

- .1 Existing structures, adjacent marine facilities, roads, services, piping or equipment within the work area which are not to be replaced shall be properly protected from any injury or damage, direct or indirect. Any damage that is caused as a result of the operations of the Contractor shall be repaired and made good at the Contractor's expense to the satisfaction of the Engineer.

**1.14 WEATHER**

- .1 Time lost by the Contractor due to stoppage on account of adverse weather conditions may be allowed, at the discretion of the Engineer, as an extension of time for the completion of the work over and above the date of completion specified in the contract agreement. However, no work can be extended past the contract end date.

**1.15 SOIL DATA AND EXISTING TOPOGRAPHY**

- .1 The Contractor shall notify the Engineer of any subsurface conditions at the place of the work that may differ materially from those indicated in the Contract Documents.

**1.16 UTILITIES AND SERVICES**

- .1 The Contractor shall be responsible for any damage to overhead, underwater and/or underground utilities and/or services caused by the Contractor's operations and shall repair and make good the repairs at the Contractor's own expense.
- .2 The Contractor shall be responsible, unless otherwise agreed to by the Engineer, for all temporary or construction services and utilities, and first aid facilities.

**1.17 MATERIAL HANDLING AND STORAGE**

- .1 Any materials damaged by the Contractor during handling, transportation and storage shall be replaced at the Contractor's expense.

**1.18 MATERIALS AND EQUIPMENT SUPPLIED BY THE CONTRACTOR**

- .1 The Contractor shall supply all labor, hand tools, power tools, generators, equipment and all other materials required to complete this Contract.

**1.19 CONSTRUCTION WORK SCHEDULE**

- .1 The Contractor shall work whatever shifts required in order to ensure the work meets regulatory windows and is completed as outlined in the agreed work plan.
- .2 The Contractor shall normally perform all work within the hours of daylight except in instances where the Contractor has requested and received approval for shift changes from the Owner.
- .3 Within 7 days of award the Contractor is to supply a week by week schedule of proposed activities related to the contract at the request of the Engineer.

- .4 The Contractor must notify the Owner immediately whenever a variation from the construction schedule is expected to occur or when the submission of the submittals will be delayed.

**1.20 SETTING OUT OF WORK**

- .1 The Contractor is expected to familiarize themselves with the Site, facilities and amenities within.
- .2 The Contractor shall not enter on nor occupy with men, tools, equipment or material, any ground outside the property of the Harbour Authority without the written consent of the party owning such ground. Other Contractors or employees or representatives of the Department may, for all necessary purposes, enter upon the work and premises used by the Contractor, and the Contractor shall conduct his work so as not to impede unnecessarily any work being done by others nor adjacent to the Site.

**1.21 AS-BUILT DRAWINGS**

- .1 Not used.

**1.22 SITE SECURITY**

- .1 The Contractor is responsible for all materials and equipment either supplied by the Contractor, the Client Department, or the Owner. The Contractor is responsible for the repair and replacement of stolen or damaged items.

**1.23 CO-OPERATION WITH HARBOUR AUTHORITY**

- .1 The Contractor will give the Harbour Authority a minimum 24 hours notice for work that may interrupt access to the harbour.
- .2 The site shall be left in a safe condition at the completion of each work day.

**1.24 CONDITION OF STRUCTURE**

- .1 Existing structures, adjacent marine facilities, roads, and all other structures, services, piping or equipment within the work area shall be properly protected from any injury or damage, direct or indirect. Any damage that is caused as a result of the operations of the Contractor shall be repaired and made good at the Contractors expense to the satisfaction of the Owner.

**1.25 INSPECTION OF STRUCTURE**

- .1 The Owner or inspector shall inspect the completed works. The Contractor shall be responsible for the costs of any re-inspections that may be required due to errors or omissions of the Contractor.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not used.

**Part 3 Execution**

**3.1 SITE ACCESS**

- .1 The Contractor shall provide access to the work for the Owner's inspectors and surveyors as required.
- .2 General site access shall be coordinated with the Owner.
- .3 The Contractor shall maintain routes of travel, with the Owner being the sole judge as to what may be deemed reasonable.
- .4 The Contractor shall erect and maintain barriers, fences, lights, warning devices, and other protective devices as may be required for prevention of theft or damage of goods and protection of the public and workmen, or if so ordered by the Owner.

**3.2 CONSTRUCTION AREA**

- .1 The Contractor shall regulate construction traffic on public areas and comply with all local ordinances in connection therewith, including load limitation and removal of debris.
- .2 The Contractor shall confine his operations on the Site to those areas actually required for the work including routes and regulations approved by the Owner for haulage of materials.

**3.3 NIGHT WORK**

- .1 The Contractor shall keep proper lights each night between the hours of sunset and sunrise upon all floating plants, false-work and other obstructions where necessary, and upon all buoys of such size and in such locations as required by a governing authority. When work is done at night, maintain from sunset to sunrise such lights on or about the work and plant as necessary for the proper observation of the work and the efficient prosecution thereof.

**3.4 CLEAN-UP**

- .1 At all times the Contractor shall keep the Site free from accumulation of waste material and debris and leave the Site clean and tidy on completion.

**3.5 TEMPORARY SERVICES**

- .1 On site the Contractor shall make his own arrangements for supply of water and electricity.
- .2 The Contractor shall supply for his own use; sanitary, first aid, and all other temporary services and facilities required for the work.

**3.6 CARE OF FINISHED WORK**

- .1 The Contractor shall protect all finished work from injury, defacement, unauthorized entry, or trespass until such time as the work described in the Contract Documents is substantially complete.

**3.7 DISPOSAL**

- .1 All demolition to be performed as per Section 01 74 21 – Construction Demolition Waste Management and Disposal.
- .2 All material designated to be replaced or removed will become the property of the Contractor and will be disposed of in an environmentally acceptable manner so that they neither become a menace to marine navigation nor a nuisance to the public on adjacent or any other property.
- .3 All replaced items, cut-offs and waste material shall be disposed by the Contractor in strict accordance with provincial, local, and municipal regulations and Part 8 of the National Building Code and with the Canadian Construction Safety Code.
- .4 Conduct clean-up and disposal operations to comply with local ordinances and antipollution laws.

**3.8 SITEWORK**

- .1 All work shall be completed as per direction of Engineer or Owner.
- .2 All heavy construction equipment shall be free of leaks and cleaned prior to construction.
- .3 The Contractor shall have absorbent pads on site in case of any oil leaks or contaminants entering the water.
- .4 All operations to be conducted in accordance with Best Management Practices.

**END OF SECTION**

## Section 01 33 00 – Submittal Procedures

### Part 1 General

#### 1.1 RELATED REQUIREMENTS

- .1 01 13 00 - GENERAL REQUIREMENTS
- .2 01 35 29.06 - HEALTH AND SAFETY REQUIREMENTS
- .3 01 35 43 - ENVIRONMENTAL PROCEDURES
- .4 01 45 00 - QUALITY CONTROL
- .5 01 74 21 - CONSTRUCTION/DEMOLITION WASTE MANAGEMENT AND DISPOSAL
- .6 01 77 00 - CLOSEOUT PROCEDURES

#### 1.2 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.

#### 1.3 SHOP DRAWINGS AND PRODUCT DATA

- .1 Not used.

**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.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

## **Section 01 35 29.06 – Health and Safety Requirements**

### **Part 1 General**

#### **1.1 RELATED SECTIONS**

- .1 Section 01 11 00 – SUMMARY OF WORK
- .2 Section 01 35 43 – ENVIRONMENTAL PROCEDURES

#### **1.2 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 British Columbia
  - .1 Workers Compensation Act, RSBC 1996 - Updated 2012.

#### **1.3 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 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
  - .1 Results of site specific safety hazard assessment.
  - .2 Results of safety and health risk or hazard analysis for site tasks and operations.
- .3 Submit 3 copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative.
- .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5 Submit copies of incident and accident reports.
- .6 Submit WHMIS MSDS - Material Safety Data Sheets.
- .7 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 5 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative 5 days after receipt of comments from Departmental Representative.
- .8 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.

- .9 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

#### **1.4 FILING OF NOTICE**

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.
- .2 Contractor shall be responsible and assume the Principal Contractor role for each work zone location and not the entire complex. Contractor shall provide a written acknowledgement of this responsibility with 3 weeks of contract award. Contractor to submit written acknowledgement to CSST along with Ouverture de Chantier Notice.
- .3 Work zone locations include:
  - .1 Deep Bay Small Craft Harbour.
- .4 Contractor shall agree to install proper site separation and identification in order to maintain time and space at all times throughout life of project.

#### **1.5 SAFETY ASSESSMENT**

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

#### **1.6 MEETINGS**

- .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.

#### **1.7 PROJECT/SITE CONDITIONS**

- .1 Work at site will involve contact with:
  - .1 Deep Bay Small Craft Harbour Authority

#### **1.8 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.

#### **1.9 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.

**1.10 COMPLIANCE REQUIREMENTS**

- .1 Comply with Workers Compensation Act, B.C. Reg.
- .2 Comply with R.S.Q., c. S-2.1, an Act respecting Health and Safety, and c. S-2.1, r.4 Safety Code for the Construction Industry.
- .3 Comply with Occupational Health and Safety Regulations, 1996.
- .4 Comply with Occupational Health and Safety Act, General Safety Regulations, O.I.C.
- .5 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

**1.11 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 Departmental Representative verbally and in writing.
- .2 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, advise the Health and Safety co-ordinator and follow procedures in accordance with Acts and Regulations of the Province having jurisdiction and advise Departmental Representative verbally and in writing.

**1.12 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 Work.
  - .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.

**1.13 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 the Province having jurisdiction, and in consultation with Departmental Representative.

**1.14 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.

**1.15 WORK STOPPAGE**

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

**Part 2 Products**

**2.1 NOT USED**

**Part 3 Execution**

**3.1 NOT USED**

**END OF SECTION**

## Section 01 35 43 – Environmental Procedures

### Part 1            General

#### 1.1            RELATED REQUIREMENTS

- .1            01 11 00 - SUMMARY OF WORK
- .2            01 45 00 - QUALITY CONTROL
- .3            01 74 11 - CLEANING
- .4            11 01 00 - HEAVY EQUIPMENT RENTAL

#### 1.2            REFERENCES

- .1            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.

#### 1.3            ACTION AND INFORMATIONAL SUBMITTALS

- .1            Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2            Product Data:
  - .1            Submit manufacturer's instructions, printed product literature and data sheets and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2            Submit copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements.

#### 1.4            FIRES

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

#### 1.5            DRAINAGE

- .1            Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

#### 1.6            SITE CLEARING AND PLANT PROTECTION

- .1 Protect trees and plants on site and adjacent properties as indicated.
- .2 Protect trees and shrubs adjacent to construction work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2m minimum.
- .3 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage.
  - .1 Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .4 Minimize stripping of topsoil and vegetation.
- .5 Restrict tree removal to areas designated by the Owner.

**1.7 WORK ADJACENT TO WATERWAYS**

- .1 Construction equipment to be operated on land only.
- .2 Use waterway beds for borrow material only after written receipt of approval from Departmental Representative.
- .3 Waterways to be kept free of excavated fill, waste material and debris.

**1.8 POLLUTION CONTROL**

- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment and plant to local authorities' emission requirements.
- .3 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area, by providing temporary enclosures.
- .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

**1.9 HISTORICAL/ARCHAEOLOGICAL CONTROL**

- .1 Removal of pilings and any portion of the wharf in contact with the land above the low water level will be accompanied by an archeological site monitor provided by the Owner.
- .2 Should any upland excavation become necessary, this portion of work will be accompanied by an archeological site monitor provided by the Owner.
- .3 Any cultural features or material found by the archeological site monitor during construction will be recorded and assessed by the Owner.

**1.10 NOTIFICATION**

- .1 Owner will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.
- .2 Contractor: after receipt of such notice, inform Owner of proposed corrective action and take such action for approval by Owner.
- .3 Owner 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**

**Part 3 Execution**

**3.1 CLEANING**

- .1 Leave work area clean at end of each day.
- .2 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.
- .3 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment to the approval of the Owner.

**END OF SECTION**

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## Section 01 45 00 – Quality Control

### Part 1 General

#### 1.1 RELATED SECTIONS

- .1 31 00 00 – EARTHWORK SHORT FORM

#### 1.2 REFERENCES

- .1 Construction General Conditions

#### 1.3 INSPECTION

- .1 Refer to Construction General Conditions for stipulated interpretation.
- .2 Allow Owner and Engineer access to Work. If part of Work is in preparation at locations other than the Place of Work; allow access to such Work whenever it is in progress.
- .3 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals.
- .4 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.
- .5 Owner 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.

#### 1.4 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.

#### 1.5 PROCEDURES

- .1 Notify appropriate agency 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.

**1.6 REJECTED WORK**

- .1 Refer to Construction General Conditions for stipulated interpretation.
- .2 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 as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .3 Make good other Contractor's work damaged by such removals or replacements promptly.
- .4 If in opinion of Owner 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 The Engineer.

**1.7 REPORTS**

- .1 Not used.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

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## Section 01 74 11 - Cleaning

### Part 1 General

#### 1.1 REFERENCES

- .1 Refer to Construction General Conditions for stipulated interpretation.

#### 1.2 PROJECT CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, other than that caused by Owner or other Contractors.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Owner.
- .3 Clear snow and ice from access to building, bank/pile snow in designated areas only.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Provide on-site bin containers for collection of waste materials and debris.
- .6 Dispose of waste materials and debris off site.
- .7 Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.
- .8 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .9 Provide adequate ventilation during use of volatile or noxious substances.
- .10 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .11 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

#### 1.3 FINAL CLEANING

- .1 Refer to Construction General Conditions for stipulated interpretation.
- .2 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .3 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.

- .4 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .5 Remove waste materials from site at regularly scheduled times or dispose of as directed by Engineer. Do not burn waste materials on site.
- .6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

**1.4 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used

**END OF SECTION**

## **Section 01 74 21 – Construction Demolition Waste Management and Disposal**

### **Part 1 General**

#### **1.1 RELATED REQUIREMENTS**

- .1 01 11 00 – SUMMARY OF WORK
- .2 31 00 00 – EARTHWORK SHORT FORM

#### **1.2 WASTE MANAGEMENT GOALS**

- .1 Prior to start of Work conduct meeting with Owner to review and discuss PWGSC's Waste Management Plan and Goals.
- .2 Accomplish maximum control of solid construction waste.
- .3 Preserve environment and prevent pollution and environment damage.

#### **1.3 DEFINITIONS**

- .1 Class III: non-hazardous waste - construction renovation and demolition waste.
- .2 Recyclable: ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse.
- .3 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .4 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- .5 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:
  - .1 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
  - .2 Returning reusable items including pallets or unused products to vendors.
- .6 Salvage: removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.
- .7 Separate Condition: refers to waste sorted into individual types.
- .8 Source Separation: acts of keeping different types of waste materials separate beginning from first time they became waste.

**1.4 STORAGE, HANDLING AND PROTECTION**

- .1 Store, materials to be reused, recycled and salvaged in locations as directed by Owner.
- .2 Unless specified otherwise, materials for removal become Contractor's property.
- .3 Protect, stockpile, store and catalogue salvaged items.
- .4 Separate non salvageable materials from salvaged items. Transport and deliver non salvageable items to licensed disposal facility.
- .5 Protect structural components not removed for demolition from movement or damage.
- .6 Support affected structures. If safety of building is endangered, cease operations and immediately notify Owner.
- .7 Protect surface drainage, mechanical and electrical from damage and blockage.
- .8 Separate and store materials produced during dismantling of structures in designated areas.
- .9 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated facilities.
  - .1 On site source separation is recommended.
  - .2 Remove co-mingled materials to off-site processing facility for separation.
  - .3 Provide waybills for separated materials.

**1.5 DISPOSAL OF WASTES**

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of waste into waterways, storm, or sanitary sewers.
- .3 Remove materials from deconstruction as deconstruction/disassembly Work progresses.

**1.6 USE OF SITE AND FACILITIES**

- .1 Execute work with least possible interference or disturbance to normal use of premises.

**1.7 SCHEDULING**

- .1 Co-ordinate Work with other activities at site to ensure timely and orderly progress of Work.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used

**Part 3 Execution**

**3.1 CLEANING**

- .1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.
- .2 Clean up work area as work progresses.
- .3 Source separate materials to be reused/recycled into specified sort areas.

**3.2 CANADIAN GOVERNMENTAL DEPARTMENTS CHIEF RESPONSIBILITY FOR THE ENVIRONMENT**

- .1 Schedule E Government Chief Responsibility for the Environment of British Columbia:

Address

General Inquires Fax

Ministry of Environment  
#200-10470 152nd Street  
Surrey B.C. V3R 0Y3

604-582-5200

604-930-7119

Waste Reduction  
Commission Soils and  
Hazardous Waste  
770 South Pacific Blvd,  
Suite 303 Vancouver BC V6B 5E7

604-660 9550

604-660 9596

**END OF SECTION**

## Section 01 77 00 – Closeout Procedures

### Part 1 General

#### 1.1 REFERENCES

- .1 Refer to Construction General Conditions for stipulated interpretation.

#### 1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Acceptance of Work Procedures:
  - .1 Contractor's Inspection: Contractor: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
    - .1 Notify Owner in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
    - .2 Request inspection by Engineer.
  - .2 Engineer Inspection:
    - .1 Engineer and Contractor to inspect Work and identify defects and deficiencies.
    - .2 Contractor to correct Work as directed.
  - .3 Final Inspection:
    - .1 When completion tasks are done, request final inspection of Work by Engineer and Contractor.
    - .2 When Work incomplete according to Engineer, complete outstanding items and request re-inspection.
  - .4 Declaration of Substantial Performance: when Engineer considers deficiencies and defects corrected and requirements of Contract substantially performed, make application for Certificate of Substantial Performance.
  - .5 Final Payment:
    - .1 When Engineer considers final deficiencies and defects corrected and requirements of Contract met, make application for final payment.
    - .2 Refer to CONSTRUCTION GENERAL CONDITIONS 2: when Work deemed incomplete by Engineer, complete outstanding items and request re-inspection.
  - .8 Payment of Holdback: after issuance of Certificate of Substantial Performance of Work, submit application for payment of holdback amount in accordance with contractual agreement.

#### 1.3 FINAL CLEANING

.1 Clean in accordance with Section 01 74 11 - Cleaning.

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

**Part 2 Products**

**2.1 NOT USED**

.1 Not Used

**Part 3 Execution**

**3.1 NOT USED**

.1 Not Used

**END OF SECTION**

## Section 11 01 00 – Heavy Equipment Rental

### Part 1 General

#### 1.1 RELATED REQUIREMENTS

- .1 01 11 00 – SUMMARY OF WORK
- .2 31 00 00 – EARTHWORK SHORT FORM

#### 1.2 DESCRIPTION

- .1 This section provides minimum technical specifications for equipment supplied by the Contractor.

#### 1.3 MEASURE OF PAYMENT

- .1 Payment for each equipment will be measured using the unit pricing supplied on the Unit Price Table.
- .2 Hourly/daily rates shall include all operator costs including travel, board and lodging.

### Part 2 Products

#### 2.1 EQUIPMENT

- .1 No claim, demand or legal proceeding is to be brought against the Crown in respect to damage of equipment caused by negligence of the operator.
- .2 The following equipment or equivalent equipment is required for this Agreement:

- .1 300 Series Excavator and Operator

- .1 Minimum Technical Specifications
      - .1 CAT 300 Series Excavator or equivalent.
      - .2 Bucket capacity range (heaped) from 0.4 to 1.5 cubic meters
      - .3 Standard, Ditching, and Cleanup bucket required with hydraulic thumb
      - .4 Operating weight approximately 50,000 kilograms
    - .2 Quantity - 1 (one)

- .2 200 Series Excavator and Operator

- .1 Minimum Technical Specifications

- .1 CAT 200 Series Excavator or equivalent.
  - .2 Bucket capacity range (heaped) from 0.4 to 1.5 cubic meters
  - .3 Standard, Ditching, and Cleanup bucket required with hydraulic thumb.
  - .4 Operating weight approximately 20,000 kilograms
- .2 Quantity - 1 (one)
- .3 License and inspected in accordance with provincial regulations.
  - .4 To be equipped with environmentally friendly, biodegradable hydraulic oil.
  - .5 To be equipped with standard night working lights, back-up beeper and horn.
  - .6 Maintain equipment in good running order for duration of the contract and repair any damage to equipment expeditiously.
  - .7 Lubrication and fluid level checks will be carried out by the Contractor. All minor on site repairs and maintenance will be carried out by the Contractor at their expense. The Contractor shall be responsible for supplying proper fluids, lubricants, filters and tools for carrying out all on-site maintenance. The Contractor shall also be responsible, at their expense, for the proper disposal of waste oils, filters and containers.
  - .8 Contractor's equipment operators will be fully licensed in accordance with provincial requirements and workmanship to be performed to an industry standard.

**Part 3 Execution**

**3.1 IDENTIFICATION OF WORK**

- .1 The Owner will identify projects requiring heavy equipment rental and provide a schedule for completion of each project.
- .2 Equipment Operators
  - .1 Operators for all heavy equipment rentals that perform services under this agreement shall be licensed for road travel as required and must be experienced/qualified for equipment to the satisfaction of the Owner.

**END OF SECTION**

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## Section 31 00 00 – Earthwork Short Form

### Part 1 General

#### 1.1 RELATED REQUIREMENTS

- .1 01 11 00 - SUMMARY OF WORK
- .2 01 74 21 – CONSTRUCTION DEMOLITION WASTE MANAGEMENT AND DISPOSAL
- .3 11 01 00 - HEAVY EQUIPMENT RENTAL

#### 1.2 REFERENCES

- .1 ASTM International
  - .1 ASTM D698-[07e1], Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft<sup>3</sup>) (600kN-m/m<sup>3</sup>).

#### 1.3 ADMINISTRATIVE REQUIREMENTS

- .1 Co-ordination: arrange with authority having jurisdiction for relocation of buried services that interfere with execution of work.
  - .1 Pay costs of relocating services.

#### 1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Site Quality Control Submittals: submit in accordance with Section 01 45 00 - Quality Control.

### Part 2 Products

#### 2.1 MATERIALS

- .1 Core

- .1 Well graded quarry rock with continuous gradation, free of any deleterious material, having a maximum diameter of 150mm (6") and gradation conforming to the following:

U.S. Standard Sieve Size	Percent Passing by Weight
150mm Screen	100
70mm Screen	40 - 70
38mm Screen	25 - 50
19mm Screen	20 - 35
4.75mm Screen	10 - 20
2.0mm Screen	0 - 10

**.2 Road Base**

- .1 Well graded crushed rock, gravel, sand and fines with continuous gradation, free of any deleterious material, having a maximum diameter of 50mm (2") and gradation as follows:

U.S. Standard Sieve Size	Percent Passing by Weight
50mm Screen	100
37.5mm Screen	75 - 100
19mm Screen	30 - 90
9.5mm Screen	5 - 25
4.75mm Screen	0
37.5mm Screen	75 - 100
19mm Screen	30 - 90
9.5mm Screen	5 - 25
4.75mm Screen	0

**.3 Rip-Rap**

- .1 Hard, durable abrasion-resistant quarry rock, free from seams, cracks or other structural defects, with specific gravity not less than 2.65 and free from organics, sand, silt, clay and debris. Rock shall be angular in shape with a ratio of maximum to minimum dimensions generally not exceeding 3.

- .2 Gradation:

- .1 Maximum diameter D100% = 600mm (24")
- .2 Not more than 50% by weight with a diameter smaller than D50% = 300mm (12")

.3 Not more than 15% by weight with a diameter smaller than D15% = 75mm (3").

.3 As requested of the Engineer, the Contractor shall carry out the necessary weighing of fractions on delivered material to demonstrate conformance with specifications.

.4 Material, which does not meet specifications may be rejected by the Engineer and shall be removed from the site to the satisfaction of the Engineer at Contractor's cost.

**Part 3 Execution**

**3.1 EXAMINATION**

.1 Before commencing work verify locations of buried services on and adjacent to site.

**3.2 PREPARATION**

.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 walkways, according to requirements of authorities having jurisdiction.

.2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.

.3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

.2 Protection of in-place conditions:

.1 Protect excavations from freezing.

.2 Keep excavations clean, free of standing water, and loose soil.

.3 Where soil is subject to significant volume change due to change in moisture content, cover and protect to Departmental Representative's approval.

.4 Protect natural and man-made features required to remain undisturbed. Unless otherwise indicated or located in an area to be occupied by new construction, protect existing trees from damage.

.5 Protect buried services that are required to remain undisturbed.

.3 Removal:

- .1 Remove trees, stumps, logs, brush, shrubs, bushes, vines, undergrowth, rotten wood, dead plant material, exposed boulders and debris within areas designated on drawings.
- .2 Remove stumps and tree roots below footings, slabs, and paving, and to 600 mm below finished grade elsewhere.
- .3 Remove obsolete buried services within 2m of foundations: cap cut-offs.

### **3.3 EXCAVATION**

- .1 Shore and brace excavations, protect slopes and banks and perform work in accordance with Provincial and Municipal regulations whichever is more stringent.
- .2 Strip topsoil over areas to be covered by new construction, over areas where grade changes are required, and so that excavated material may be stockpiled without covering topsoil.
  - .1 Stockpile topsoil on site for later use.
- .3 Excavate as required to carry out work.
  - .1 Do not disturb soil or rock below bearing surfaces.
  - .2 Notify Departmental Representative when excavations are complete.

### **3.4 BACKFILLING**

- .1 Remove snow, ice, construction debris, organic soil and standing water from spaces to be filled.
- .2 Lateral support: maintain even levels of backfill around structures as work progresses, to equalize earth pressures.
- .3 Compaction of subgrade: compact existing subgrade under walks, paving, and slabs on grade, to same compaction as fill.
  - .1 Fill excavated areas and compact as directed by the Engineer.
- .4 Placing:
  - .1 Place backfill, fill and base course material in lifts as directed by the Engineer.

### **3.5 GRADING**

- .1 Grade so that water will drain away from buildings, walls and paved areas, to catch basins and other disposal areas approved by Departmental Representative.

### **3.6 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
  - .2 Dispose of cleared and grubbed material off site daily.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

**END OF SECTION**