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DFO/SCH LIST OF DRAWINGS
SHORE PROTECTION RECONSTRUCTION
ADVOCATE HARBOUR 601

SECTION 00 01 12
PAGE 1
SEPTEMBER 2020

<u>DRAWING NO.</u>	<u>TITLE</u>	<u>DATE</u>
1 of 1	Typical Shore Protection Section / Site Plan	April 2020

END OF SECTION

1 SITE OF WORK

- .1 The site for work described in this Specification is located at Advocate Harbour Wharf, Cumberland Co., NS

2 DESCRIPTION OF WORK

- .1 The work consists of the furnishing of all labour, equipment, materials, transportation and supervision as required by the Tender Documents necessary for the construction of shore protection on Structure 601 at Advocate Harbour Wharf.
- .2 The work includes but not limited to:
 - .1 Site work including mobilization, demobilization
 - .2 Removal and disposal of material that is not re-usable in the shore protection (under sized rock, concrete slabs, debris, etc.)
 - .3 Supply and installation of geotextile, as per drawings and specifications.
 - .4 Supply and installation of filter stone, as per drawings and specifications.
 - .5 Supply and installation of armour stone, as per drawings and specifications.
 - .6 Supply and installation of Type 2 gravel, evenly spread and compacted along the newly installed shore protection towards the wharf approach (and fill in the lower areas along the approach with excess gravel).
- .3 Contract limits shall be strictly adhered to and every precaution shall be taken to minimize environmental damage and disruption to existing vegetation. Contractor is to take special care to protect existing features, and shall notify Departmental Representative immediately if any historic or natural resources are located during construction. Contractor shall also take extra care during construction to ensure that finished product meets standards outlined in contract specifications and drawings.

3 PRODUCT MEASUREMENT

- 3.1 General
 - .1 Unit and lump sum prices are full compensation for the work necessary to complete each item in the contract, in combination for all work necessary to complete the Work as a whole, and provided in accordance with the Construction Schedule and

other plans indicated requiring submittal to and approval by the Departmental Representative.

3.2 Measurement .1
for Payment

Lump Sum Items: the following items, to be read in conjunction with both the contract drawings and the technical specifications are to be measured separately as Lump Sum items in the tender documents to cover all miscellaneous work activities that do not lend themselves easily to measurement and quantification:

Mobilization and Demobilization:

Mobilization and demobilization including temporary storage area, temporary navigational aids and all other contract requirements not specifically measured, will be paid as a Lump Sum item.

Removals and Disposals:

Removal and disposal of material that is not suitable for repaired shore protection (eg. undersized stone and concrete slabs), will be paid as a Lump Sum item.

.2

Unit Price Items: the following outlines the unit of measurement of the unit price items as indicated in the Contract Documents:

Geotextile:

Supply and installation of filter fabric as per plan will be measured for payment by the square metre (m²) installed. All measurements will be taken from the dimensions shown on the drawings. No payment will be made for overlap, fastenings or securing boards.

Filter Stone (400-600 kg):

Supply and installation of filter stone will be measured by the tonne (T) based on weigh scale tickets received on site from a certified and calibrated weigh scale. This item includes supply and placement of stone to the lines and elevations indicated on the drawings and confirmation survey.

Armour Stone (4-6 Tonne):

Supply and installation of armour stone will be measured by the tonne (T) based on weigh scale tickets received on site from a certified and calibrated weigh scale. This item includes supply and placement of stone to the lines and elevations indicated on the drawings and confirmation survey.

Type 2 Gravel

Supply and installation of Type 2 gravel will be measured by the tonne (T) based on weigh scale tickets received on site from a certified and calibrated weigh scale. This item includes supply

and placement of stone to the lines and elevations indicated on the drawings and confirmation survey.

3 FAMILIARIZATION WITH SITE

- .1 All bidders, before submitting their tender, are encouraged to inspect and examine the site and its surroundings and satisfy themselves as to the form and nature of the work and materials necessary for the completion of the works, the means of access to the site, the temporary facilities they may require, and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. No allowance shall be made subsequently in this connection on account of error or negligence to properly observe and determine the conditions that will apply.

- .2 OTHER CONTRACTS
 - .1 Further contracts may be let during the period that this Contract is in progress on Structure 401/402.

 - .2 Cooperate with other Contractors in carrying out their respective work and carry out all instructions from the Departmental Representative in this regard.

 - .3 Connect properly and coordinate work with that of other Contractors. Contractors are to use/work in their identified respective work area.

- .3 USE OF EXISTING STRUCTURES .1 Structures 401 and 402 will not be used or accessed with equipment for the duration of the contract.

4 CODES AND STANDARDS

- .1 Perform work in accordance with the 2015 National Building Code of Canada, National Fire Code of Canada (latest edition) and any other code of provincial or local application including all amendments up to project date provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.

5 PRE-AWARD MEETING

- .1 Within seven (7) days after the tenders have been closed, a pre-award meeting will be held with the low bidder to review his proposed method of completing the work.

- .2 At the meeting the Contractor will be required to submit the following information to the department for review and approval:
 - .1 A Tentative Schedule of Work: The schedule of work will describe the mobilization date to the site and the its duration and

completion date of each activity, specifically the work that is to be completed before and after the road closure and reopening.

- .2 Details of environmental protection measures.
- .3 Methodology of Work.

6 WORK SCHEDULE

- .1 Submit within seven (7) days of notification of acceptance of tender, a construction schedule showing commencement and completion of all work within the time stated in the accepted tender. The schedule shall be in a format acceptable to Departmental Representative and be sufficiently detailed to allow the Departmental Representative and the Contractor to plan, monitor and coordinate tasks and resources efficiently to achieve completion of the work on time.
- .2 Submit updates of the schedule when requested by Departmental Representative and as a minimum on a monthly basis. Provide an explanation of necessary changes.
- .3 The contractor is to schedule his work to meet the funding schedule.
- .4 The work must be substantially completed by March 12th, 2020.

7 DOCUMENTS

- .1 Maintain at job site, one copy each of following:
 - .1 Contract Drawings
 - .2 Specifications.
 - .3 Copy of Approved Work Schedule
 - .4 Site Specific Health and Safety Plan and Environmental Protection Plan
 - .5 Copy of all applicable safety standards (as applicable to Nova Scotia).

8 DATUM

- .1 All elevations shown on plans submitted or mentioned in the specifications are expressed in "Meters" and are referred to Chart Datum or Low Normal Tide (L.N.T.) which is taken as elevation 0.0 meter.

9 PROJECT MEETINGS

- .1 Departmental Representative will arrange project meetings and assume responsibility for setting times and recording minutes.
- .2 Contractor's Superintendent shall accompany General Contractor and be present at all project meetings.

10 PROTECTION OF EXISTING SERVICES

- .1 It will be the responsibility of the Contractor to become fully acquainted

with the existing services and Facilities and protect them during the construction.

END OF SECTION

1 GENERAL

1.01 DEFINITIONS

- .1 COSH: Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.
- .2 Competent Person: means a person who is:
 - .1 Qualified by virtue of personal knowledge, training and experience to perform assigned work in a manner that will ensure the health and safety of persons in the workplace, and;
 - .2 Knowledgeable about the provisions of occupational health and safety statutes and regulations that apply to the Work and;
 - .3 Knowledgeable about potential or actual danger to health or safety associated with the Work.
- .3 Medical Aid Injury: any minor injury for which medical treatment was provided and the cost of which is covered by Workers' Compensation Board of the province in which the injury was incurred.
- .4 PPE: personal protective equipment
- .5 Work Site: where used in this section shall mean areas, located at the premises where Work is undertaken, used by Contractor to perform all of the activities associated with the performance of the Work.

1.02 SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00.
- .2 Submit site-specific Health and Safety Plan prior to commencement of Work.
 - .1 Submit within five 5 work days of notification of Bid Acceptance. Provide 2 copies.
 - .2 Departmental Representative will review Health and Safety Plan and provide comments.
 - .3 Revise the Plan as appropriate and resubmit within 5 work days after receipt of comments.
 - .4 Departmental Representative's review and comments made of the Plan shall not be construed as an endorsement, approval or implied warranty of any kind by Canada and does not reduce Contractor's overall responsibility for Occupational Health and Safety of the Work.
 - .5 Submit revisions and updates made to the Plan during the course of Work.
- .3 Submit name of designated Health & Safety Site Representative and support documentation specified in the Safety Plan.
- .4 Submit building permit, compliance certificates and other permits obtained.
- .5 Submit copy of Letter in Good Standing from Provincial Workers Compensation or other department of labour organization.
 - .1 Submit update of Letter of Good Standing whenever expiration date

occurs during the period of Work.

- .6 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .7 Submit copies of incident reports.
- .8 Submit WHMIS MSDS - Material Safety Data Sheets.

1.03 COMPLIANCE REQUIREMENTS

- .1 Comply with Occupational Health and Safety Act for Province of Nova Scotia, and General Regulations made pursuant to the Act.
- .2 Comply with Canada Labour Code - Part II (entitled Occupational Health and Safety) and the Canada Occupational Health and Safety Regulations (COSH) as well as any other regulations made pursuant to the Act.
 - .1 The Canada Labour Code can be viewed at:
[www.http://laws.justice.gc.ca/en/L-2/](http://laws.justice.gc.ca/en/L-2/)
 - .2 COSH can be viewed at: [www.http://laws.justice.gc.ca/eng/SOR-86-304/n e .html](http://laws.justice.gc.ca/eng/SOR-86-304/n e .html)
 - .3 A copy may be obtained at: Canadian Government Publishing Public Works & Government Services Canada Ottawa, Ontario, K1A 0S9 Tel: (819) 956-4800 (1-800-635-7943) Publication No. L31-85/2000 E or F)
- .3 Observe construction safety measures of:
 - .1 Part 8 of National Building Code
 - .2 Municipal by-laws and ordinances.
- .4 In case of conflict or discrepancy between above specified requirements, the more stringent shall apply.
- .5 Maintain Workers Compensation Coverage in good standing for duration of Contract. Provide proof of clearance through submission of Letter in Good Standing.
- .6 Medical Surveillance: Where prescribed by legislation or regulation, obtain and maintain worker medical surveillance documentation.

1.04 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons and environment adjacent to the site to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by all workers, sub-contractors and other persons granted access to Work Site with safety requirements of Contract Documents, applicable federal, provincial, and local by-laws, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.05 SITE CONTROL AND ACCESS

- .1 Control the Work and entry points to Work Site. Approve and grant access only to workers and authorized persons. Immediately stop and remove

non-authorized persons.

- .1 Departmental Representative will provide names of those persons authorized by Departmental Representative to enter onto Work Site and will ensure that such authorized persons have the required knowledge and training on Health and Safety pertinent to their reason for being at the site, however, Contractor remains responsible for the health and safety of authorized persons while at the Work Site.
- .2 Isolate Work Site from other areas of the premises by use of appropriate means.
 - .1 Erect fences, hoarding, barricades and temporary lighting as required to effectively delineate the Work Site, stop non-authorized entry, and to protect pedestrians and vehicular traffic around and adjacent to the Work and create a safe environment.
 - .2 Post signage at entry points and other strategic locations indicating restricted access and conditions for access.
 - .3 Use professionally made signs with bilingual message in the 2 official languages or international known graphic symbols.
- .3 Provide safety orientation session to persons granted access to Work Site. Advise of hazards and safety rules to be observed while on site.
- .4 Ensure persons granted site access wear appropriate PPE. Supply PPE to inspection authorities who require access to conduct tests or perform inspections.
- .5 Secure Work Site against entry when inactive or unoccupied and to protect persons against harm.

1.06 PROTECTION

- .1 Give precedence to safety and health of persons and protection of environment over cost and schedule considerations for Work.
- .2 Should unforeseen or peculiar safety related hazard or condition become evident during performance of Work, immediately take measures to rectify situation and prevent damage or harm. Advise Departmental Representative verbally and in writing.

1.07 FILING OF NOTICE

- .1 File Notice of Project with pertinent provincial health and safety authorities prior to beginning of Work.
 - .1 Departmental Representative will assist in locating address if needed.

1.08 PERMITS

- .1 Post permits, licenses and compliance certificates.
- .2 Where a particular permit or compliance certificate cannot be obtained, notify Departmental Representative in writing and obtain approval to proceed before carrying out applicable portion of work.

1.09 HAZARD ASSESSMENTS

- .1 Perform site specific health and safety hazard assessment of the Work and its site(s).
- .2 Carryout initial assessment prior to commencement of Work with further assessments as needed during progress of work, including when new trades and subcontractors arrive on site.
- .3 Record results and address in Health and Safety Plan.
- .4 Keep documentation on site for entire duration of the Work.

1.10 PROJECT/SITE CONDITIONS

- .1 Following are potential health, environmental and safety hazards at the site for which Work may involve contact with:
- .2
 - .1 Existing hazardous and controlled products stored on site:
 - .1 none identified
 - .2 Existing hazardous substances or contaminated materials:
 - .1 none identified
 - .3 Known latent site and environmental conditions:
 - .1 Working near and over water.
 - .2 Cold weather and exposure.
 - .3 Public access to the site.
 - .4 Heavy Equipment.
 - .5 Working with lights.
 - .6 Load losses Roll overs.
 - .4 Facility on-going operations:
 - .1 ongoing commercial fishery operations
- .3 Above items shall not be construed as being complete and inclusive of potential health and safety hazards encountered during Work.
- .4 Include above items in the hazard assessment of the Work.
- .5 MSDS Data sheets of pertinent hazardous and controlled products stored on site can be obtained from Departmental Representative.

1.11 MEETINGS

- .1 Attend pre-construction health and safety meeting, convened and chaired by Departmental Representative, prior to commencement of Work, at time, date and location determined by Departmental Representative. Ensure attendance of:
 - .1 Superintendent of Work
 - .2 Designated Health & Safety Site Representative
 - .3 Subcontractors
- .2 Conduct regularly scheduled tool box and safety meetings during the Work in conformance with Occupational Health and Safety regulations.
- .3 Keep documents on site.

1.12 HEALTH AND SAFETY PLAN

- .1 Prior to commencement of Work, develop written Health and Safety Plan specific to the Work. Implement, maintain, and enforce Plan for entire duration of Work and until final demobilization from site.
- .2 Health and Safety Plan shall include the following components:
 - .1 List of health risks and safety hazards identified by hazard assessment.
 - .2 Control measures used to mitigate risks and hazards identified.
 - .3 On-site Contingency and Emergency Response Plan as specified below.
 - .4 On-site Communication Plan as specified below.
 - .5 Name of Contractor's designated Health & Safety Site Representative and information showing proof of his/her competence and reporting relationship in Contractor's company.
 - .6 Names, competence and reporting relationship of other supervisory personnel used in the Work for occupational health and safety purposes.
- .3 On-site Contingency and Emergency Response Plan shall include:
 - .1 Operational procedures, evacuation measures and communication process to be implemented in the event of an emergency.
 - .2 Evacuation Plan: site and floor plan layouts showing escape routes, marshalling areas. Details on alarm notification methods, fire drills, location of fire fighting equipment and other related data.
 - .3 Name, duties and responsibilities of persons designated as Emergency Warden(s) and deputies.
 - .4 Emergency Contacts: name and telephone number of officials from:
 - .1 General Contractor and subcontractors.
 - .2 Pertinent Federal and Provincial Departments and Authorities having jurisdiction.
 - .3 Local emergency resource organizations.
 - .5 Harmonize Plan with Facility's Emergency Response and Evacuation Plan. Departmental Representative will provide pertinent data including name of PWGSC and Facility Management contacts.
- .4 On-site Communication Plan:
 - .1 Procedures for sharing of work related safety information to workers and subcontractors, including emergency and evacuation measures.
 - .2 List of critical work activities to be communicated with Facility Manager which have a risk of endangering health and safety of Facility users.
- .5 Address all activities of the Work including those of subcontractors.
- .6 Review Health and Safety Plan regularly during the Work. Update as conditions warrant to address emerging risks and hazards, such as whenever new trade or subcontractor arrive at Work Site.
- .7 Departmental Representative will respond in writing, where deficiencies or concerns are noted and may request re-submission of the Plan with correction of deficiencies or concerns.
- .8 Post copy of the Plan, and updates, prominently on Work Site.

1.13 SAFETY SUPERVISION

- .1 Employ Health & Safety Site Representative responsible for daily supervision of health and safety of the Work.
- .2 Health & Safety Site Representative may be the Superintendent of the Work or other person designated by Contractor and shall be assigned the responsibility and authority to:
 - .1 Implement, monitor and enforce daily compliance with health and safety requirements of the Work
 - .2 Monitor and enforce Contractor's site-specific Health and Safety Plan.
 - .3 Conduct site safety orientation session to persons granted access to Work Site.
 - .4 Ensure that persons allowed site access are knowledgeable and trained in health and safety pertinent to their activities at the site or are escorted by a competent person while on the Work Site.
 - .5 Stop the Work as deemed necessary for reasons of health and safety.
- .3 Health & Safety Site Representative must:
 - .1 Be qualified and competent person in occupational health and safety.
 - .2 Have site-related working experience specific to activities of the Work.
 - .3 Be on Work Site at all times during execution of the Work.
- .4 All supervisory personnel assigned to the Work shall also be competent persons.
- .5 Inspections:
 - .1 Conduct regularly scheduled safety inspections of the Work on a minimum bi-weekly basis. Record deficiencies and remedial action taken.

1.14 TRAINING

- .1 Use only skilled workers on Work Site who are effectively trained in occupational health and safety procedures and practices pertinent to their assigned task.
- .2 Maintain employee records and evidence of training received. Make data available to Departmental Representative upon request.
- .3 When unforeseen or peculiar safety-related 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 Province having jurisdiction and advise Departmental Representative verbally and in writing.

1.15 MINIMUM SITE SAFETY RULES

- .1 Notwithstanding requirement to abide by federal and provincial health and safety regulations; ensure the following minimum safety rules are obeyed by persons granted access to Work Site:
 - .1 Wear appropriate PPE pertinent to the Work or assigned task; minimum

being hard hat, safety footwear, safety glasses and hearing protection.

- .2 Immediately report unsafe condition at site, near-miss accident, injury and damage.
 - .3 Maintain site and storage areas in a tidy condition free of hazards causing injury.
 - .4 Obey warning signs and safety tags.
- .2 Brief persons of disciplinary protocols to be taken for non compliance. Post rules on site.

1.16 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 will stop Work if non-compliance of health and safety regulations is not corrected in a timely manner.

1.17 INCIDENT REPORTING

- .1 Investigate and report the following incidents to Departmental Representative:
 - .1 Incidents requiring notification to Provincial Department of Occupational Safety and Health, Workers Compensation Board or to other regulatory Agency.
 - .2 Medical aid injuries.
 - .3 Property damage in excess of \$10,000.00,
 - .4 Interruptions to Facility operations resulting in an operational lost to a Federal department in excess of \$5000.00.
- .2 Submit report in writing.

1.18 HAZARDOUS PRODUCTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS).
- .2 Keep MSDS data sheets for all products delivered to site.
 - .1 Post on site.
 - .2 Submit copy to Departmental Representative.

1.19 BLASTING

- .1 Blasting or other use of explosives is not permitted on site without prior receipt of written permission and instructions from Departmental Representative.

1.20 POWDER ACTUATED DEVICES

- .1 Use powder actuated fastening devices only after receipt of written

permission from Departmental Representative.

1.21 CONFINED SPACES

- .1 Abide by occupational health and safety regulations regarding work in confined spaces.

1.22 SITE RECORDS

- .1 Maintain on Work Site copy of safety related documentation and reports stipulated to be produced in compliance with Acts and Regulations of authorities having jurisdiction and of those documents specified herein.
- .2 Upon request, make available to Departmental Representative or authorized Safety Officer for inspection.

1.23 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on Work Site in accordance with Acts and Regulations of Province having jurisdiction.
- .2 Post other documents as specified herein, including:
 - .1 Site specific Health and Safety Plan.
 - .2 WHMIS data sheets.

END OF SECTION

1 REQUIREMENTS OF REGULATORY AGENCIES

- .1 Prior to use, have weigh scales certified as meeting requirements of Statutes of Canada, Chapter 36, Weights and Measures Act 1970-71-72 and subsequent amendments. Display certificate in a prominent position.

2 MEASUREMENT FOR PAYMENT

- .1 Include cost of certification, installation, maintenance and removal of scales or use of local commercial scales in items of work to be measured by mass.

3 EQUIPMENT

- .1 Weigh scales: electronic truck scale of sufficient capacity to weigh loaded vehicles in a single operation.
- .2 Existing certified commercial scales may be utilized if available and approved by Departmental Representative.

4 SCALE HOUSE

- .1 To enclose mass indicator and in which Departmental Representative's inspector can perform work and maintain records.
- .2 To be weatherproof and have minimum 750 lx of illumination, one sliding window facing scale platform, one other window for cross ventilation, shelf desk at least 0.6 x 1.8 m, and heat to maintain inside temperature at 20°C. Entrance door not to face onto scale platform.

5 OPERATION

- .1 Departmental Representative's inspector at scales will monitor weighing of materials when available.
- .2 Provide sufficient number of weigh tickets, in triplicate, with consecutive serial numbers. Obtain Departmental Representative's approval of design.

6 MAINTENANCE

- .1 Maintain scale platform and scale mechanism clean and free from gravel, asphalt, snow, ice, and debris.
- .2 Maintain approach and exit ramps in good condition free from sags and ruts.
- .3 Have scales recertified if requested by Departmental Representative.

END OF SECTION

1 GENERAL

1.01 SECTION INCLUDES

- .1 Construction aids.
- .2 Parking.
- .3 Project identification.

1.02 MEASUREMENT FOR PAYMENT

- .1 Construction facilities is not measured for payment.

1.03 INSTALLATION AND REMOVAL

- .1 Provide construction facilities in order to execute work expeditiously.
- .2 Remove from site all such work after use.

1.04 SITE STORAGE/LOADING

- .1 Refer to SACC ID R2830, GC 3.12.
- .2 Storage of rock and equipment in the parking area is permitted provided it does not disrupt access to the wharf or buildings on the wharf, or damage any finished surfaces.
- .3 Do not load or permit to load any part of Wharf or structures with a weight or force that will endanger the Work.

1.05 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.
- .3 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractors' use of roads.

1.06 SANITARY FACILITIES

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.07 CONSTRUCTION SIGNAGE

- .1 No other signs or advertisements, other than warning signs, are permitted on site.
- .2 Signs and notices for safety and instruction shall be in both official languages Graphic symbols shall conform to CAN3-Z321.
- .3 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Departmental Representative.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

1 GENERAL

- .1 Administrative procedures preceding and acceptance of Work by Departmental Representative.
- .2 Refer to Section 01 78 00 - Closeout Submittals
- .3 Contractor's Inspection: Coordinate and perform, in concert with subcontractors, an inspection and check of all Work. Identify and correct deficiencies, defects, repairs and perform outstanding items as required to complete work in conformance with Contract Documents.
 - .1 Notify Departmental Representative in writing when deficiencies from Contractor's inspection have been rectified and that Work is deemed to be complete and ready for Departmental Representative's inspection of the completed work.
- .4 Departmental Representative's Inspection: Accompany Departmental Representative during all interim and final inspections of the Work.
 - .1 Address defects, faults and outstanding items of work identified by such inspections.
 - .2 Advise Departmental Representative when all deficiencies identified have been rectified.
- .5 Note that Departmental Representative will not issue a Certificate of Substantial Completion of the Work until such time that Contractor performs following work and turns over the specified documents:
 - .1 Project record as-built documents Section 01 78 00.
- .6 Correct all discrepancies before Departmental Representative will issue the Certificate of Completion.

END OF SECTION

1 GENERAL

- .1 Departmental Representative will provide 2 white print sets of contract drawings and 2 copies of Specifications Manual specifically for "as-built" purposes.
- .2 Maintain at site one set of the Contract Drawings and Specifications to record actual as-built site conditions.
- .3 Maintain up-to-date, real time as-built drawings and specifications in good condition and make available for inspection by the Departmental Representative upon request.
- .4 As-Built Drawings:
 - .1 Record changes in red ink on the prints. Mark only on one set of prints and at completion of work, neatly transfer notations to second set (also by use of red ink).
 - .2 Submit both sets to Departmental Representative prior to application for Certificate of Substantial Completion.
 - .3 Stamp all drawings with "As-Built Drawings". Label and place Contractor's signature and date.
 - .4 Show all modifications, substitutions and deviations from what is shown on the contract drawings or in specifications.
- .5 Record following information:
 - .1 Depths of various elements in relation to survey datum.
 - .2 Field changes of dimension and detail;
 - .3 Location of all capped or terminated services and utilities.
 - .4 All design elevations, sections and details dimensioned and marked-up to consistently report finished installation conditions;

.5 Any details produced in the course of the contract by the Departmental Representative to supplement or to change existing design drawings;

.6 All change orders issued over the course of the contract must be documented on the finished as-built documents, accurately and consistently depicting the changed condition as it applies to all affected drawing details.

.5 As-built Specifications:

legibly mark in red each item to record actual construction, including:

- .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly items substituted from that specified.
- .2 Changes made by Addenda and Change Orders.
- .3 Mark up both copies of specifications; stamp "as-built", sign and date similarly to drawings as per above clause.

- .6 Maintain As-built documents current as the contract progresses. Departmental Representative will conduct reviews and inspections of the documents on a regular basis. Failure to maintain as-builts current and complete to satisfaction of the Departmental Representative shall be subject to financial penalties in the form of progress payment reductions and holdback assessments.

END OF SECTION

1 GENERAL

- .1 This section specifies requirements for the supply and installation of synthetic non-woven filter fabric to be used as shown on drawings.
- .2 Damaged material shall be replaced at no cost to the owner.
- .3 No extra payment will be made for overlapping of fabric i.e. overlaps are measured as a single layer of fabric
- .4 REFERENCES:
 - .1 American Society for Testing and Materials International, (ASTM)
 - .1 ASTM D 4491-99a, Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
 - .2 ASTM D 4595-11, Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method.
 - .3 ASTM D 4751-12, Standard Test Method for Determining Apparent Opening Size of a Geotextile.
 - .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-4.2 No. 11.2-M89(April 1997), Textile Test Methods - Bursting Strength - Ball Burst Test (Extension of September 1989)
 - .2 AN/CGSB-148.1, Methods of Testing Geotextiles and Complete Geomembranes.
- .5 SUBMITTALS:
 - .1 Submit to the Departmental Representative the following at least 2 weeks prior to beginning of work.
 - .1 manufactures specification on the proposed material to be used.
 - .2 samples of proposed materials.

- .6 DELIVERY STORAGE AND HANDLING:
- .1 During delivery and storage, protect geotextiles from direct sunlight, ultraviolet rays, excessive heat, mud, dirt, dust, debris and rodents.

2 PRODUCT

- 2.1 Filter Fabric
- .1 Non-woven synthetic fibre fabric, rot proof, unaffected by action of oil or salt water and not subject to attack by marine life, insects or rodents to be supplied in rolls.
 - .2 Fabric to be of non woven construction supplied in rolls of minimum 3.0 metres width, minimum thickness of 4.0 mm and to the following properties or equivalent:
 - .1 Mass(g/m²) 250 to 270
 - .2 Tear (N) 500
 - .3 Tensile Strength (N) 950
 - .4 Elongation at Break(%) 70-100
 - .5 Mullen Burst Strength (kPa) 2500
 - .6 Opening Size (um) 50 to 150
 - .7 Permeability (K cm s⁻¹) 2.7x10⁻¹.
 - .3 Factory seams: sewn in accordance with manufacturer's recommendations.
 - .4 Thread for sewn seams: equal or better resistance to chemical and biological degradation than geotextile.

3 EXECUTION

- 3.1 INSTALLATION
- .1 Place geotextile material by unrolling in orientation, manner and locations indicated and retain in position with securing pins and washers or weights.
 - .1 Place geotextile material smooth and free of tension stress, folds, wrinkles and creases.
 - .2 Overlap each successive strip of geotextile 600 mm over previously laid strip.
 - .3 Pin successive strips of geotextile with securing pins as recommended by manufacturer.
 - .4 Protect installed geotextile material from displacement, damage or deterioration before, during and after placement of material.
 - .5 Replace damaged or deteriorated geotextile to approval of Departmental Representative .

END OF SECTION

1 GENERAL

1.01 DESCRIPTION

- .1 This section specifies the excavation of Toe of Armor Stone, disposal, salvage of existing materials and the supply and placement of stone materials for the construction of the 601 shore protection at Advocate Harbour.

1.02 RELATED SECTIONS

- .1 Section 01 45 01 - Weigh Scales

1.03 EXISTING HAUL ROADS

- .1 It is important that persons intending to bid on this work visits the site and ascertain what preparatory work will be required for the following:
 - .1 Access to site via Public Roads;
 - .2 Access to Site via Wharf Road and Parking lots;
- .2 The contractor will be solely responsible for construction and maintenance of haul roads, which will be incidental to the work.

1.04 MEASUREMENT PROCEDURES

- .1 Measurement for payment for Armour Stone (4-6 Tonnes) and Filter Stone (400 to 600kg) will be paid in tonnes of material supplied and placed.
- .2 Excavation, trucking and disposal of toe slope material to be removed will be incidental to the work.
- .3 Haulage of imported material will be incidental to the work.
- .4 Construction and maintenance of haul roads will not be measured for payment.
- .5 Salvaged Filter and Armour Stone to be reincorporated to the new shore protection and will be considered incidental to the work.
 - .1 including handling, double handling, stockpiling, mixing, placing, trucking and all related work.
- .6 Reshaping slope of shore protection will be considered incidental to the work.

2 PRODUCTS

2.01 MATERIALS

- .1 Filter Stone and Armour Stone:

- .1 To be granitic or basaltic rock that is of approved quality, sound, hard, dense, angular, resistant to weathering and salt water, free from overburden, spoils, and organic material. Free from cracks, seams or other defects which may impair durability; relative density (former specific gravity) minimum 2.64 t/m³; slate, shale, and sandstone not acceptable.
 - .1 The rock, when tested by the Micro Deval test method in accordance with MTO LS-618, shall a Micro Deval loss of not greater than 35%.
 - .2 When tested by the freeze Thaw test method in accordance with MTO LS-614, the rock material shall have Freeze Thaw loss not greater than 15%.
- .2 Quarried stone individual rock is to be angular, and greatest dimensions of each stone is not to exceed two times least dimension.
 - .1 Armour Stone:
 - .1 Stone sizes to be in range of 4 tonnes to 6 tonnes
 - .2 Filter Stone:
 - .1 Stone sizes to be in range of 400-600 kg.

3 EXECUTION

3.01 PREPARATION

- .1 Haul roads: construct and maintain access to the work site.
- .2 Remove ice and snow that may affect placement of core or filter rock.

3.02 FILTER AND ARMOUR LAYER

- .1 Place Filter and Armour Stone over the entire face of the shore protection to the lines and grades and dimensions shown on the plan.
- .2 Place each unit individually using a crane or other mechanical means to the lines and grades and dimensions shown on the plan. Do not dump the armour units. Commence placing at the toe of the slope, and proceed up the slope. Place each unit so that it is stable, secure on slope and supported by units below. Control placement of armour units so as to produce a uniform and continuous cover.
- .3 Place each stone in stable position.
- .4 Layer Thickness as per the plans.

3.03 PROTECTION

- .1 Take into account anticipated weather conditions and degree of exposure of site and tidal conditions in setting requirements for protection.
- .2 Schedule and carry out construction so that each phase of work is not left

longer than necessary.

- .3 Replacement of filter stone lost due to storm or tidal erosion will be the responsibility of the Contractor.

3.04 INSPECTION

- .1 Co-ordinate with the Departmental Representative prior to installation of filter stone and key stones; after installation is completed, site meeting between Contractor and Departmental Representative shall be scheduled to confirm installation covers area identified in plans.

3.05 TOLERANCES

- .1 Completed component layers to be within following tolerances of lines and grades as indicated:
 - .1 Filter Stone layer: plus or minus 300mm.

END OF SECTION