

PART 1 - GENERAL

1.1 REFERENCES

- .1 American Society for Testing and Materials (ASTM)
 - .1 ASTM C117-04, Standard Test Method for Material Finer than 0.075 mm Sieve in Mineral Aggregates by Washing.
 - .2 ASTM C136-06, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-8.1-88, Sieves, Testing, Woven Wire.
 - .2 CAN/CGSB-8.2-M88, Sieves, Testing, Woven Wire, Metric.

1.2 SUBMITTALS

- .1 Samples
 - .1 Submit samples as directed by Departmental Representative.
 - .2 Inform Departmental Representative of proposed source of materials and provide access for sampling at least 4 weeks prior to commencing Work.
 - .3 Submit 20 to 70 kg samples representative of quarry, minimum 3 weeks prior to beginning Work.
 - .4 Ship samples prepaid to the testing laboratory designated by the Departmental Representative for approval.
 - .5 Submit filter and armour stone quantity control plan to Departmental Representative 3 weeks before commencement of work, for review and approval.

1.3 INTERFERENCE
TO NAVIGATION

- .1 Be familiar with vessel movements and fishery activities in area affected by construction operations.
- .2 Plan and execute work, in a manner that will not impede navigation, including movement of vessels at the facility.

- .3 Plan and execute work, in a manner that will not interfere with fishing operations or access to marine structures by land or water.
- .4 Departmental Representative will not be responsible for loss of time, equipment, material or any other charges related to interference with moored vessels in the harbour or other Contractor's operations.
- .5 Keep the Marine Communications and Traffic Services' Centre, Fisheries and Oceans Canada, informed of construction operations, in order that necessary Notices to Mariners may be issued.

1.4 REGULATORY REQUIREMENTS

- .1 Comply with municipal, provincial and national codes and regulations relating to project. Refer to the attachments.
- .2 Mark floating equipment with sound and light signals in accordance with Collision Regulations made pursuant to the Canada Shipping Act and Notice to Mariners.

1.5 MEASUREMENT FOR PAYMENT

- .1 Filter Stone: Measured in cubic metres of material and supplied and placed (CMPM) in the work within the limits specified on the drawings, for Work Area 1.
- .2 Armour Stone: Measured in cubic metres of material and supplied and placed (CMPM) in the work within the limits specified on the drawings, for Work Area 1.
- .3 There will be no measurement for payment for core stone supplied and placed in work area. All work under this part will be included in the lump sum portion of the contract.
- .4 Armour stone - work area 2: There will be

no measurement of 4 tonne armour stone supplied and placed in this area. Contractor will make his own assessment of the volume of material required in the areas identified on the drawings. PSPC estimated for bidding purposes that 1500-2000m³ of armour stone will be required. Departmental Representative will confirm all locations for armour stone placement in Work Area 2, while in the field. Additional areas maybe required. All work under this section 1.5.3 will be included in the lump sum portion of the contract.

- .5 There will be no payment made for any material or stone placed beyond limits indicated on the drawings. The final contract grade must be within 100 mm of the specific elevation. Quantities will be based on an as-built survey. Any material placed outside the lines and grades as shown on the drawings will not be measured.
- .6 There will be no additional payment for delays caused by traffic or other work in the area.
- .7 There will be no additional payment for downtime.
- .8 There will be no payment for any filter stone or armour stone that is washed out, removed, missing or deteriorated by weather or wave action.
- .9 Contractor is to provide cross sections to the Departmental Representative at 10 metre stations to show that lines and grades have been achieved as shown on the drawings over each type of material. Measurement for payment for this will be considered included in the cost of the supply and installation of the materials. There will be no separate payment.

- .10 Construction, maintenance and removal of haul roads will not be measured for payment.
- .11 There will be no additional payment for the supply and installation of polypropylene geogrid as per the drawings.
- .12 There will be no payment for excavation of material associated with "toeing in of filter stone & armour stone" as noted on the drawings.
- .13 Contractor will back slope the fill area between the new armour stone and the top of the bank to a slope of 1:1. There will be no additional payment for this work.

PART 2 - PRODUCTS

2.1 ROCK MATERIAL

- .1 Hard, angular rock free from cracks, seams and other defects which may impair durability.
- .2 Relative density, 2.65 minimum.
- .3 Absorption, 1.5 to 2.0% maximum as determined by ASTM C127 test procedure.
- .4 Durability, less than 35% abrasion Wear, ASTM C535 test procedure.
- .5 Sulphate Soundness Determination maximum 12% by ASTM C88.

2.2 FILTER STONE

- .1 Material for filter stone to be blasted rock or field stones.
- .2 Stone size to be well graded between 200 kg to 400 kg, in categories specified, well graded within each category.

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| | .3 | Greatest dimension of each stone not to exceed two (2) times the least dimension. |
| <u>2.3 ARMOUR STONE</u> | .1 | Material for armour stone to be blasted rock or field stones. |
| | .2 | Stone sizes to be in the range of 2 to 4 tonnes, in categories specified, well graded within each category. |
| | .3 | Greatest dimension of each stone not to exceed two (2) times least dimension. |

PART 3 - EXECUTION

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| <u>3.1 GENERAL</u> | .1 | Take precautions not to damage existing properties during hauling of rock materials. Damage to existing roads or other private or public properties will be repaired at the Contractor's expense. |
| <u>3.2 PREPARATION</u> | .1 | Haul roads: construct and maintain haul roads. |
| <u>3.3 FILTER STONE</u> | .1 | Place filter stone layers to grades, dimensions, profiles and cross sectional elements indicated on the drawings. |
| | .2 | Place filter stone in layers as indicated on the drawings. |
| | .3 | Do not transport different categories of material in the same truckload. If rocks of markedly different sizes are present in the same load, Departmental Representative reserves the right to have each rock measured separately and sorted prior to installing in structure. |

- .4 Contractor to provide cross sections to the Departmental Representative at 10 metre stations to show that lines and grades have been achieved as shown on the drawings (in autocad format on a monthly basis). Measurement for payment for this work will be included in the cost of the supply and installing the above item.

3.4 ARMOUR STONE

- .1 Place armour stone to lines, grades and dimensions indicated on the drawings. Contractor should realize the distance required to place the armour stone, supply necessary equipment to complete as shown on drawings.
- .2 Dumping of armour stone will not be permitted. Each stone will be lifted and individually placed.
- .3 Side slopes to be as indicated on the drawings.
- .4 Choose stones and place them in such a way that the whole structure will be bonded and consolidated to as great an extent as nature or rock will allow. Rocks should vary in size so they don't create steep slopes when placing to the grade lines as indicated on the drawings.
- .5 Do not transport different categories of material in the same truckload. If rocks of markedly different sizes are present in the same load, Departmental Representative reserves the right to have each rock measured separately and sorted prior to installing in structure.
- .6 Contractor to provide cross sections to the Departmental Representative at 10 metre stations to show that lines and grades have

been achieved as shown on the drawings (in autocad format on a monthly basis).
Measurement for payment for this work will be included in the cost of the supply and installing the above item.

<u>3.5 ROCK MATERIAL WASHED OUT OF WORK</u>	.1	Should during the progress of the Work, any material washed out of the Work or displaced beyond the contract limits will be replaced by the Contractor at no cost to Canada.
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<u>3.6 TOLERANCES</u>	.1	Note: These tolerances are not to be considered pay limits but are specified to ensure contractor keeps within acceptable lines and grades.
	.2	Completed component layers to be within the following tolerances of lines and grades indicated: .1 Filter stone +/-100 mm. .2 Armour stone +/-300 mm.