

PART 1 - GENERAL

1.1 RELATED
SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.

1.2 REFERENCES

- .1 American Society for Testing and Materials (ASTM)
 - .1 ASTM C117-13, 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.

1.3 SUBMITTALS

- .1 Submit to Departmental Representative for approval, 4 weeks before blasting, details of proposed blasting operations showing types and quantities of explosives, loading charges and patterns, type of blasting caps, blasting techniques, blast protection measures, time of blasting and other pertinent details. Submit subsequent changes to Departmental Representative before proceeding.
- .2 Samples
 - .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Inform Departmental Representative of proposed source of materials at least 2 weeks prior to commencing Work.
 - .3 Submit samples representative of quarry, minimum 2 weeks prior to beginning Work.
 - .4 Ship samples to approved testing lab for testing and results.
 - .5 Contractor is responsible for the supply of rock samples, cost of transport and cost of testing for the rock being used for the project.
- .3 Submit for approval of review by Departmental Representative proposed method of handling armour stone. Submission to cover phases of handling, from removal from form to final position.

1.4 WASTE
MANAGEMENT AND
DISPOSAL

- .1 Divert unused metal materials from landfill to metal recycling facility as approved by Departmental Representative.
- .2 Divert unused concrete materials from landfill to local quarry facility as approved by Departmental Representative.

1.5 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 and 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.

1.6 REGULATORY
REQUIREMENTS

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

1.7 MEASUREMENT FOR
PAYMENT

- .1 Rock Removal: Existing armour stone protection to be removed and stored on site. Excess material to be measured in the fixed priced items.
- .2 Armour Stone (0.75 - 1.5 tonne): measured in cubic metres (m³) of material placed (CMPM) in this work within the limits specified on drawings
- .3 Armour Stone 6.0 - 8.0 tonne: measured in cubic metres (m³) of material and supplied and placed (CMPM) in this work within the limits specified on drawings.

- 1.7 MEASUREMENT FOR .4 Armour Stone (10 tonne): measured in cubic metres
PAYMENT (m³) of material and supplied and placed (CMPM) in
(Cont'd) this work within the limits specified on drawings.
- .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
200 mm of the specific elevation. Quantities will
be based on a 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
resulting from fishing operations.
- .7 There will be no additional payment for downtime.
- .8 Mobilization/demobilization of equipment to be
lump sum will not be measured for payment included
in the above pay items.
- .9 Construction and maintenance of haul roads will
not be measured for payment.

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 ARMOUR STONE .1 Hard, dense with relative density (formally
specific gravity) not less than 2.65, durable
quarry stone, free from seams, cracks or other
structural defects, to meet following size
distribution for use intended.

- 2.2 ARMOUR STONE
(Cont'd)
- .2 Stone sizes to be in the range of 6 to 8 tonnes, and 0.75 - 1.5 tonnes in categories specified, well graded within each category.
 - .3 Supply rock spalls to fill open joints.

PART 3 - EXECUTION

- 3.1 GENERAL
- .1 Contractors will not be permitted to work from the existing wharf deck. No equipment allowed on or operate from the structure.
 - .2 Contractor to sort through existing materials and sort to meet project specifications. Departmental Representative to approve sizing of rock prior to placement.

- 3.2 PREPARATION
- .1 Haul roads: construct and maintain haul roads.

- 3.3 PLACING
- .1 Place armour stone to lines, grades and dimensions indicated on the drawings. Contractor should realize the distance required to place the armour stone out into the water, 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 1.5 horizontal to 1.0 vertical unless otherwise indicated on the drawings.
 - .4 Place armour stone and rip-rap to a total layer thickness as indicated on the drawings.
 - .5 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 grade lines as indicated on the drawings.
 - .6 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.

3.3 PLACING
(Cont'd)

- .7 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. Measurement for payment for this work will be included in the cost of the supply and installing the above item.

3.4 ROCK MATERIAL
WASHED OUT OF WORK

- .1 Should during the progress of the Work, any rock material be washed out of the Work, or through neglect or carelessness of the Contractor or their employees or from any other cause, be dumped into the water near the Work or anywhere within the harbour or channel so as to interfere in the opinion of the Departmental Representative with actual depths of water and/or impede navigation, it will be removed by the Contractor when ordered to do so by the Departmental Representative. Any material washed out of the Work or displaced beyond the contract limits will be replaced by the Contractor at no cost to Canada.

3.5 TOLERANCES

- .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 as indicated:
- .1 Armour stone +/-300 mm.