

PART 1 - GENERAL

1.1 RELATED
SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

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 and provide access for sampling at least 2 weeks prior to commencing Work.
 - .3 Submit samples representative of quarry, minimum 2 weeks prior to beginning Work.
 - .4 Ship samples prepaid to Departmental Representative for approval.
- .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 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .2 Collect and separate for disposal paper, plastic, polystyrene, and corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .3 Divert unused geotextiles from landfill to plastic recycling facility as approved by Departmental Representative.
- .4 Divert unused metal materials from landfill to metal recycling facility as approved by Departmental Representative.
- .5 Divert unused concrete materials from landfill to local quarry facility as approved by Departmental Representative.
- .6 Fold up metal banding, flatten and place in designated area for recycling.

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 Filter Stone (200 kg - 450 kg): Measured in cubic metres (m³) of material and supplied and placed in the work within the limits specified on the drawings.
- .2 Rip rap Protection Rock (500 kg - 750 kg): Measured in cubic metres (m³) of material and supplied and placed in the work within the limits specified on the drawings.
- .3 Armour Stone (0.75 - 1.5 tonnes): Measured in cubic metres (m³) of material and supplied and placed in the work within the limits specified on the drawings.
- .4 Armour Stone (2 - 4 tonne): Measured in cubic metres (m³) of material and supplied and placed in the work within the limits specified on the drawings.
- .5 Protection Armour Stone (1.5 tonne) Parking Lot: Measured in cubic metres (m³) of material and supplied and placed in the work within the limits specified on the drawings.
- .6 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.
- .7 There will be no additional payment for delays resulting from fishing operations.
- .8 There will be no additional payment for downtime.
- .9 Mobilization/demobilization of equipment to be lump sum will not be measured for payment included in the above pay items.
- .10 Construction and maintenance of haul roads will not be measured for payment.
- .11 Construction and maintenance of haul roads will not be measured for payment.

PART 2 - PRODUCTS

2.1 RIP-RAP

- .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 Rip-rap stone to be well graded with maximum sizes not exceeding 800 mm on any side and minimum size of not less than 500 mm on any side.
- .3 Supply rock spalls to fill open joints.
- .4 Field stones of appropriate sizes are acceptable for hand placed rip-rap.

2.2 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.

2.3 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 Material for armour stone to be blasted rock or field stone.
- .3 Stone sizes to be in the range of 0.75 to 4 tonnes, in categories specified, well graded within each category.
- .4 Greatest dimension of each stone not to exceed two (2) times least dimension.

2.3 ARMOUR STONE .5 Supply rock spalls to fill open joints.
(Cont'd)

PART 3 - EXECUTION

3.1 GENERAL .1 Contractors will not be permitted to work the
existing wharf deck. No equipment allowed on or
operate from the structure.

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 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.

.7 Contractor to provide cross sections for the core
stone, filter stone and armour stone 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.