

PART 1 - GENERAL

1.1 DESCRIPTION

- .1 This section includes, but is not necessarily limited to, the following:
 - .1 Removal, salvage and reinstallation of approved existing filter stone and armour stone units, as required, to be incorporated into the new erosion protection.
 - .2 Production, transportation and installation of new filter stone and armour stone as required to complete the new erosion protection structure to the slopes, lines, elevations and grades indicated on the drawings.
 - .3 Restoration of all embankment ground surface between the armour stone and undisturbed road embankment to conditions similar to those that existed prior to the work, and to the approval of Parks Canada and the Departmental Representative.

1.2 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 02 41 16 - Sitework, Demolition and Removal

1.3 REFERENCES

- .1 American Society for Testing and Materials (ASTM)
- .2 Canadian General Standards Board (CGSB)

1.4 DEFINITIONS

- .1 Tonne: Metric Tonne or 1000 kilograms
 - .2 Cleared: Finally accepted or complying with plans and specifications.
 - .3 Estimated Quantity:
 - .1 Mass in Tonne of material calculated to be within specified slopes, lines and elevations unless otherwise specified.
 - .4 Side Slopes: inclined surface or plane from the crest elevation to the original ground line outside.
 - .5 Chart Datum: Datum used for this project is the Lowest Normal Tide (L.N.T) which is assumed to be 6.332 metres below the Bench Mark - Geodetic BM 89F193 - Brass Plaque in Rock.
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1.5 SUBMITTALS

- .1 Submit to Departmental Representative for approval, two (2) weeks before blasting, a Blasting Plan that includes 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 Ensure all work is completed in accordance with Appendix "A" - Cod Knotts Quarry - Rock Extraction Plan.
- .3 The Contractor will ensure the benching and rock face slopes are to the approval of Parks Canada and the Departmental Representative.

1.6 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 in the area.
- .3 Plan and execute work, in a manner that will not interfere with fishing operations in the area.
- .4 Departmental Representative will not be responsible for loss of time, equipment, material or any other charges related to interference with marine vessels in the harbor 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.

1.7 REGULATORY REQUIREMENTS

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

1.8 MEASUREMENT
FOR PAYMENT

- .1 Filter Stone (200 - 600 kg): Measured in metric tonne (Tonne) of material produced, transported and placed in the work within the limits specified on the drawings. This also includes salvage of existing filter stone from the immediate area of the project site, as approved by the Departmental Representative, and placement within the limits of the structure.
 - .2 Armour Stone (2 - 4 tonne): Measured in metric tonne (Tonne) of material produced, transported and placed in the work within the limits specified on the drawings. This also includes salvage of existing armour stone from the immediate area of the project site, as approved by the Departmental Representative, and placement within the limits of the structure.
 - .3 There will be no additional payment made for salvage of existing filter stone or armour stone for incorporation into the structure. The Contractor is to make an assessment of the suitable material that is available, Include these costs incidental to the work.
 - .4 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 an As-built survey upon completion of the project.
 - .5 There will be no additional payment made for restoration of embankment ground surface between armour stone and undisturbed road embankment. Include these costs incidental to the work.
 - .6 There will be no additional payment for delays caused by traffic. Include these costs incidental to the work.
 - .7 There will be no additional payment for traffic control or any associated downtime during the project. Include these costs incidental to the work.
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- .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 five (5) metre stations to show that lines and grades have been achieved as shown on the drawings over each type of material. There will be no separate payment. Include these costs incidental to the work.
- .10 Construction, maintenance and removal of haul roads or access anywhere required will not be measured for payment. Include these costs incidental to the work.

PART 2 - PRODUCTS

2.1 ROCK SOURCE

- .1 All rock will be produced by the Contractor at the Cod Knotts Quarry. The access road to the quarry is approximately 6.7 kilometres Northwest of the Gull Rocks Lookout. The access road to the quarry is approximately 0.8 kilometres East of the access road to the Gros Morne National Park Visitor Centre. The quarry access road is approximately 0.5 kilometres long.
- .2 All blasting must be carried out to ensure continuation of the benching and sloping indicated in the Rock Extraction Plan. See Appendix "A".

2.2 ROCK MATERIAL

- .1 Hard, angular rock free from cracks, seams and other defects which may impair durability.
 - .2 Relative density, 2.66.
 - .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.
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- 2.3 FILTER STONE .1 Material for filter stone to be blasted rock.
- .2 Stone size to be well graded between 200 kg to 600 kg, in categories specified, well graded within each category.
- .3 Greatest dimension of each stone not to exceed two (2) times the least dimension.

- 2.4 ARMOUR STONE .1 Material for armour stone to be blasted rock.
- .2 Stone size 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 the least dimension.

PART 3 - EXECUTION

- 3.1 GENERAL .1 Contractors will not be permitted to work from any existing pavement unless it is protected to the satisfaction of the Departmental Representative. Any damage will be the responsibility of the contractor to repair.

- 3.2 PREPARATION .1 The Contractor is solely responsible for the construction and maintenance of haul roads or site access. Haul roads and/or site access are to be removed after completion of work and sites returned to their original condition.

- 3.3 FILTER STONE .1 Place filter stone layers to grades, dimensions, profiles and cross sectional elements indicated on the drawings.
- .2 Side slopes to be 1.5 horizontal to 1.0 vertical unless otherwise 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
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prior to installing in structure.

3.4 ARMOUR STONE

- .1 Place armour stone layers to grades, dimensions, profiles and cross sectional elements indicated on the drawings.
- .2 Dumping of armour stone will not be permitted. Each stone will be lifted and placed individually.
- .3 Side slopes to be 1.5 horizontal to 1.0 vertical unless otherwise indicated on the drawings.
- .4 Choose stones and place them in such a way that whole structure will be bonded and consolidated to as great an extent as nature or rock will allow. Rock 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.

3.5 SALVAGE MATERIAL

- .1 The Contractor will salvage all existing suitable filter stone and armour stone within the footprint of the new structure and adjacent to the new structure as approved by the Departmental Representative.
- .2 All salvaged material will be incorporated into the new Rubble Mound Erosion Protection structure.

3.6 ROCK MATERIAL WASHED OUT OF WORK

Should during the progress of the Work, any rock material be washed out the Work, or through neglect of carelessness of the Contractor or their employees or from any other cause, be dumped into the water near the Work so as to interfere in the option of the Departmental Representative with actual depths of water and/or impede navigation, it will be removed by the Contractor at no cost to Canada.

3.7 RESTORATION OF EMBANKMENT

- .1 Restore all embankment ground surface between the toe of the new armour stone erosion protection structure and the undisturbed road embankment to
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conditions similar to those that existed prior to the work.

- .2 The material used for this restoration will be that salvaged to provide access to the work site.
- .3 Top layer will be salvaged top soil as much as possible.
- .4 Ensure a raked finish.
- .5 All work to the approval of Parks Canada and the Departmental Representative.

3.8 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 indicated:
 - .1 Filter stone +/-150 mm.
 - .2 Armour stone +/-200 mm