

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.
- .3 Section 03 20 00 - Concrete Reinforcing.
- .4 Section 03 30 00 - Cast-in-Place Concrete.

1.2 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.

1.3 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 Submit to Departmental Representative complete photographic and descriptive record of buildings, roads and structures in general area of Project Work, before blasting is

started. Describe buildings both inside and out. Record existing cracks in walls or structural components.

.3 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 20 to 70 kg samples representative of quarry, minimum 2 weeks prior to beginning Work.

.4 Ship samples prepaid to Departmental Representative for approval.

1.4 REGULATORY REQUIREMENTS

.1 Comply with municipal, provincial and national codes and regulations relating to project. Refer to the attachments.

1.5 MEASUREMENT FOR PAYMENT

.1 Rip Rap (700 - 1000kg) - Inner Basin Site: Measured in cubic metres of material and supplied and placed (CMPM) in the work within the limits specified on the drawings.

.2 Filter Stone (70 - 100 kg) - Inner Basin Site: Measured in cubic metres of material and supplied and placed (CMPM) in the work within the limits specified on the drawings.

.3 Rip Rap (1 tonne)- Plant Site: Measured in cubic metres of material and supplied and placed (CMPM) in the work within the limits specified on the drawings.

.4 Stone barricades - Plant Site: Measured in cubic metres of material and supplied and placed (CMPM) in the work within the limits specified on the drawings.

.5 There will be no payment made for any material

or stone placed beyond limits indicated on the drawings.

- .6 There will be no payment for any rip rap or filter stone that is washed out, removed, missing or deteriorated by weather or wave action.
- .7 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 RIP RAP

- .1 New rip rap to be 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, sizes as indicated on drawings.
- .3 Supply rock spalls to fill open joints.
- .4 Field stones of appropriate sizes are

acceptable for hand placed rip-rap.

2.3 FILTER STONE AND STONE BARRICADES

- .1 Material for filter stone and stone barricades to be blasted rock.
- .2 Stone size to be well graded in the ranges noted on the drawings.
- .3 Greatest dimension of each stone not to exceed two (2) times the least dimension.

PART 3 - EXECUTION

3.1 GENERAL

- .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.

3.2 PREPARATION

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

3.3 RIP RAP

- .1 Place rip-rap as directed to thickness and details indicated or as designated by Departmental Representative.
- .2 Where rip-rap is to be placed on slopes, excavate trench at toe of slope to dimensions as indicated.
- .3 All side slopes to be as shown on the drawings.
- .4 Fine grade area to be rip-rapped to uniform, even surface. Fill depressions with suitable material and compact to provide firm bed.
- .5 Place stones in manner approved by

Departmental Representative to secure surface and create a stable mass. Place larger stones at bottom of slopes.

- .6 Hand placing:
 - .1 Use larger stones for lower courses and as headers for subsequent courses.
 - .2 Stagger vertical joints and fill voids with rock spalls or cobbles.
- .7 Finish surface evenly, free of large openings and neat in appearance.

3.4 FILTER STONE

- .1 Place filter stone layers to grades, dimensions, profiles and cross sectional elements indicated on the drawings. Contractor should realize the large distance required to place the filter stone out into the water, supply necessary equipment to complete as shown on drawings.
- .2 Place filter stone in layers as indicated on the drawings.
- .3 Side slopes to be as shown on the drawings.
- .4 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 STONE BARRICADES

- .1 Place stone barricades at top of slope, as shown on the drawings.
- .2 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

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reserves the right to have each rock measured separately and sorted prior to installing in structure.