

PART 1 - GENERAL

1.1 DESCRIPTION

- .1 This section specifies requirements for supply and placing stone rip-rap at locations indicated.

1.2 RELATED SECTIONS

- .1 Section 31 23 25 - Rock and Gravel Fill.
- .2 Section 31 32 21 - Geotextiles.

1.3 MEASUREMENT  
FOR PAYMENT

- .1 Rip-Rap: Costs for the supply and placement of stone\_rip-rap, including all plant, labour, equipment, and materials required to complete the work will be included in the lump sum price.

PART 2 - PRODUCTS

2.1 RIP-RAP

- .1 Hard, dense with relative density (specific gravity) not less than 2.65, durable quarry stone, free from seams, cracks or other structural defects.
- .2 Rip-rap stone to be 1 tonne in size. +/-300kg
- .3 Supply rock spalls to fill open joints.

PART 3 - EXECUTION

3.1 PLACING

- .1 Place rip rap in locations as shown on the drawings, and in a manner approved by the Departmental Representative.
  - .1 Dumping of stone will not be permitted. Each stone will be lifted and individually placed.
  - .2 Side slopes as indicated on the drawings or matching existing slopes.
  - .3 Contractor will choose and place stones to ensure they are bonded and consolidated to as great an extent as nature or rock will allow.
- .2 Where rip-rap is to be placed on slopes, excavate trench at toe of slope to dimensions as indicated.

- .3 Fine grade area to be rip-rapped to uniform, even surface. Fill depressions with suitable material and compact to provide firm bed.
- .4 Install geotextile material as indicated
- .5 Place larger stones at bottom of slopes.
- .6 Stagger vertical joints and fill voids with rock spalls or cobbles.
- .7 Finish surface evenly, free of large openings and neat in appearance.

### 3.2 TESTING

- .1 Submit rock samples for testing to testing laboratory approved by the Departmental Representative prior to quarry production.
- .2 Contractor will be responsible for procurement of samples for testing and arrange and pay for shipment of samples to testing laboratory.
- .3 Departmental Representative will pay for costs associated with laboratory testing of proposed rock materials.
- .4 Only materials approved by the Departmental Representative will be placed in the work.

**END OF SECTION 31 37 10**