

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS .1 Section 31 05 16 - Aggregate Materials.

1.2 REFERENCES .1 ASTM International  
.1 ASTM D 698-07e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft<sup>3</sup>) (600kN-m/m<sup>3</sup>).  
.2 Canada Green Building Council (CaGBC)  
.1 LEED Canada-NC-2009, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.  
.3 Washington State Department of Ecology.  
.1 Stormwater Management Manual for Western Washington, Volume II, Construction Pollution Prevention (2015 edition).  
.4 Newfoundland and Labrador Department of Municipal Affairs.  
.1 Municipal Water, Sewer and Roads Master Construction Specifications, latest revision.

1.3 ACTION AND INFORMATIONAL SUBMITTALS .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.  
.2 Sustainable Design Submittals:  
.1 LEED Canada Submittals: in accordance with Section 01 35 21 - LEED Requirements.  
.2 Erosion and Sedimentation Control: submit copy of erosion and sedimentation control plan in accordance with EPA 832/R-92-2005, authorities having jurisdiction and Section 01 35 21 - LEED Requirements.  
.3 Construction Waste Management:  
.1 Submit project Waste Management Plan highlighting recycling and salvage requirements.  
.2 Submit calculations on end-of-project recycling rates, salvage

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1.3 ACTION AND  
INFORMATIONAL  
SUBMITTALS  
(Cont'd)

- .2 Sustainable Design Submittals: (Cont'd)
- .3 Construction Waste Management: (Cont'd)
  - .2 (Cont'd)  
rates, and landfill rates demonstrating  
that 75% of construction wastes were  
recycled or salvaged.
  - .4 Regional Materials: submit evidence that  
project incorporates required percentage 20%  
of regional materials and products, showing  
their cost, distance from project to furthest  
site of extraction or manufacture, and total  
cost of materials for project.

1.4 DELIVERY,  
STORAGE AND  
HANDLING

- .1 Deliver, store and handle materials in  
accordance with Section 01 61 00 - Common  
Product Requirements, Section 31 05 16 -  
Aggregate Materials and with manufacturer's  
written instructions.
- .2 Storage and Handling Requirements:
  - .1 Stockpile minimum 50% of total aggregate  
required prior to beginning operation.
  - .2 Store materials and in accordance with  
manufacturer's recommendations in clean, dry,  
well-ventilated area.
  - .3 Replace defective or damaged materials  
with new.
  - .4 Store cement in weathertight bins or  
silos that provide protection from dampness  
and easy access for inspection and  
identification of each shipment.
- .3 Develop Construction Waste Management Plan  
related to Work of this Section and in  
accordance with Section 01 35 21 - LEED  
Requirements.
- .4 Packaging Waste Management: remove for reuse  
or return of pallets, crates, padding,  
banding, and packaging materials as specified  
in Construction Waste Management Plan in  
accordance with Section 01 74 21 -  
Construction/Demolition Waste Management and  
Disposal and Section 01 35 21 - LEED  
Requirements.

PART 2 - PRODUCTS

- 2.1 MATERIALS .1 Granular "A" base material: in accordance with Class A material of Section 02233 of the Newfoundland and Labrador Municipal Water, Sewer and Roads, Master Construction Specifications.

PART 3 - EXECUTION

- 3.1 PREPARATION .1 Temporary Erosion and Sedimentation Control:  
.1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to sediment and erosion control drawings  
.2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.  
.3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

- 3.2 PLACEMENT AND INSTALLATION .1 Place granular base after sub-base surface is inspected and approved in writing by Departmental Representative.
- .2 Placing:  
.1 Construct granular base to depth and grade in areas indicated.  
.2 Ensure no frozen material is placed.  
.3 Place material only on clean unfrozen surface, free from snow and ice.  
.4 Begin spreading base material on crown line or on high side of one-way slope.  
.5 Place material using methods which do not lead to segregation or degradation of aggregate.  
.6 For spreading and shaping material, use spreader boxes having adjustable templates or

3.2 PLACEMENT AND  
INSTALLATION  
(Cont'd)

- .2 Placing: (Cont'd)
  - .6 (Cont'd)  
screeds which will place material in uniform layers of required thickness.
  - .7 Place material to full width in uniform layers not exceeding 150 mm compacted thickness.
    - .1 Departmental Representative may authorize thicker lifts (layers) if specified compaction can be achieved.
  - .8 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.
  - .9 Remove and replace that portion of layer in which material becomes segregated during spreading.
- .3 Compaction Equipment:
  - .1 Ensure compaction equipment is capable of obtaining required material densities.
- .4 Compacting:
  - .1 Compact to density not less than 100% maximum dry density to ASTM D 698.
  - .2 Shape and roll alternately to obtain smooth, even and uniformly compacted base.
  - .3 Apply water as necessary during compacting to obtain specified density.
  - .4 In areas not accessible to rolling equipment, compact to specified density with mechanical tampers approved in writing by Departmental Representative.
  - .5 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.

3.3 SITE TOLERANCES

- .1 Finished base surface to be within plus or minus 10 mm of established grade and cross section but not uniformly high or low.

3.4 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.

3.4 CLEANING  
(Cont'd)

- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Section 01 35 21 - LEED Requirements.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.
  - .2 Divert unused granular material from landfill to local facility approved by Departmental Representative.

3.5 TESTING

- .1 Inspection and testing of soil compaction will be carried out by independent inspection and testing agency designated by Departmental Representative. Costs of these tests will be paid by Contractor in accordance with Section 01 29 83 - Payment Procedures for Testing Laboratory Services and Section 01 45 00 - Quality Control.

3.6 PROTECTION

- .1 Maintain finished base in condition conforming to this Section until succeeding material is applied or until acceptance by Departmental Representative.