

PART 1 - GENERAL

1.1 PRODUCTS IMPLEMENTED ONLY UNDER THIS SECTION .1 Granular material MG-20, 0-150 mm and 50-25 mm, in areas specified in drawings.

1.2 RELATED SECTIONS .1 Section 31 05 16 - Aggregate Materials.

1.3 REFERENCES .1 American Society for Testing and Materials International, (ASTM)

.1 ASTM C 117-03, Test Method for Materials Finer than 75- $\mu$ m (No. 200) Sieve in Mineral Aggregates by Washing.

.2 ASTM C 131-03, Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

.3 ASTM C 136-01, Method for Sieve Analysis of Fine and Coarse Aggregates.

.4 ASTM D 422-63, Standard Test Method for Particle-Size Analysis of Soils.

.5 ASTM D 698-00a, Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort 600kN-m/m<sup>3</sup>.

.6 ASTM D 1557-00, Test Method for Laboratory Compaction Characteristics for Soil Using Modified Effort 2700kN-m/m<sup>3</sup>.

.7 ASTM D 1883-99, Standard Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils.

.2 Canadian General Standards Board (CGSB).

.1 CAN/CGSB-8.1-88, Sieves Testing, Woven Wire, Inch Series.

.2 CAN/CGSB-8.2-M88, Sieves Testing, Woven Wire, Metric.

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 Excess materials are to be diverted from landfill to site approved by Department's Designated Representative.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Granular base material: to Section 31 05 16 - Aggregate Materials and following requirements:

- .1 Crushed stone or gravel consisting of hard, durable, angular particles, free from clay lumps, cementation, organic material and other deleterious materials.
- .2 Graduations within limits specified when tested to ASTM C 136 and ASTM C 117. Sieve sizes to CAN/CGSB-8.1.
- .3 Gradation table:

Table 201-2  
Grading Limits - Crushed Rock Base/Subbase

ASTM Sieve Size	Aggregate Base		Aggregate Subbase	
	25 mm % passing	31.5 mm % passing	50 mm % passing	75 mm % passing
90.0 mm				100
75.0 mm				95 - 100
63.0 mm			100	85 - 100
50.0 mm			95 - 100	73 - 95
37.5 mm		100	76 - 100	58 - 87
31.5 mm	100	95 - 100		
25.0 mm	95 - 100	81 - 100	60 - 84	
19.0 mm	71 - 100	66 - 90	50 - 76	35 - 69
12.5 mm	56 - 82	50 - 77		
9.5 mm	47 - 74	41 - 70	32 - 61	25 - 54
4.75 mm	31 - 59	27 - 54	21 - 49	17 - 43
2.36 mm	21 - 46	17 - 43	15 - 40	12 - 35
1.18 mm	13 - 34	11 - 32	10 - 32	8 - 28
300 µm	5 - 18	4 - 19	4 - 18	4 - 16
75 µm	0 - 8	0 - 8	0 - 9	0 - 9

.4 Other property as follows:

- .1 Los Angeles Degradation: ASTM C 131, maximum 50% loss by weight.

PART 3 - EXECUTION

3.1 SEQUENCE OF OPERATION

- .1 Put in place material of the granular roadbed after inspection and approval of the Department's Designated Representative.
- .2 Put in place, in indicated areas, the granular roadbed at the depth and level specified.
- .3 Not used

- .4 Ensure no frozen material is used.
- .5 Put material in place on a clean surface, non frozen and free of snow and ice.
- .6 Scarify roadbed to total width of Work, in uniform layers of maximum thickness of 150 mm after compaction. Department's Designated Representative can allow thicker layers to be put in place, if specified compaction can be obtained.
- .7 Before putting in place material for the following layer, give each layer a uniform profile and compact it until specified density is obtained.
- .8 Remove and replace any part of a layer in which there had been segregation of material during placement.

### 3.2 COMPACTION

- .1 Compaction equipment capable of obtaining required material densities.
- .2 Compact to density minimum 98% of maximum dry density in accordance with ASTM D 1557 for the 0-31,5mm, unless otherwise specified in drawings. It is possible that the Contractor must compact the bottom of excavation to achieve these levels of compaction.
- .3 Shape and roll alternately to obtain smooth, even and uniformly compacted base.
- .4 Apply water as necessary during compaction to obtain specified density.
- .5 Use mechanical tampers, approved by the Department's Designated Representative to compact areas not accessible to rolling equipment in order to achieve specified density.
- .6 Correct surface irregularities by loosening the soil and adding or removing material until the surface level is in accordance with prescribed tolerances

### 3.3 SITE TOLERANCES

- .1 Reshaped compacted surface within plus or minus 10 mm of elevation as indicated.

3.4 PROTECTION

- .1 Maintain the finished granular roadbed in a state in compliance with this section's requirements until completion of the following layer or receipt of work from the Department's Designated Representative.

PART 1 - GENERAL

1.1 RELATED SECTIONS

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

1.2 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM)
  - .1 ASTM D 698-[00a], Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)).
  - .2 Department of New Brunswick – Minister of Transportation.
    - .1 Standard Specifications Division 200

1.3 SAMPLES

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to Department’s Designated Representative, samples of material for sieve analysis at least 3 weeks before beginning Work.

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 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Aggregates to: Department of Transportation Standard Specifications.
- .2 Prime coat: RC-30 to Department of Transportation Standard Specifications.

- .3 Tack coat: SS-1, to Department of Transportation Standard Specifications.
- .4 Asphalt concrete: to Department of Transportation Standard Specifications.
- .5 Asphalt binder: PG 58-34.

PART 3 – EXECUTION

3.1 PAVEMENT THICKNESS

- .1 Pavements for roadways:
  - .1 Hot mixed conventionnal asphalt concrete surface mix – D « Seal » (115 kg/m<sup>2</sup>), thickness: 40 mm.
  - .2 Hot mixed conventionnal asphalt concrete base mix – B « Base » (175 kg/m<sup>2</sup>), thickness: 60 mm.

3.3 PAVEMENT CONSTRUCTION

- .1 Surface preparation: Department of Transportation Standard Specifications.
- .2 Application of prime coat and tack coat: Department of Transportation Standard Specifications.
- .3 Construction of asphalt concrete: Department of Transportation Standard Specifications.