

1.0 GENERAL

1.1 REFERENCE STANDARDS

ASTM D698 "Moisture Density Relationship to Soils" - Standard Compaction Tests.

1.2 SAMPLES

- .1 Submit samples of materials to testing laboratory appointed by the Project Manager if requested.
- .2 Pre-pay shipping charges.
- .3 Cooperate with testing firm in obtaining samples.
- .4 Supply and store on site one 0.84 m³ (1 yard³) of aggregates to be used.

1.3 PROTECTION

- .1 Restrict traffic over the completed or partially completed work after inclement weather or at any time when there is tendency for subgrade material to work into the base material.

2.0 PRODUCTS

2.1 MATERIALS

- .1 Crushed Gravel: Graded according to Alberta Transportation and Utilities standards 50 mm (2 inches) to meet the following:

Sieve Size	% Passing
50,000	100%
25,000	66 - 90%
16,000	54 - 81%
10,000	45 - 73%
5,000	35 - 63%
1,250	22 - 45%
630	17 - 38%
315	13 - 30%
160	9 - 20%
80	4 - 10%

- .2 Sub-base Gravel: Of sound, hard particles free from flaky particles, soft shale organic matter or foreign material. Graded according to Alberta Transportation and Utilities standards 80 mm (3 inches) to meet the following:

Sieve Size	% Passing
80,000	100%
50,000	55 -100%
25,000	38 - 100%
16,000	32 - 85%
5,000	20 - 65%
315	6 - 30%
80	2 - 10%

3.0 **EXECUTION**

3.1 **SUB-BASE GRAVEL COURSE CONSTRUCTION**

- .1 Excavate soft areas of subgrade, replace with sub-base gravel.
- .2 Compact to density not less than 97% (standard Proctor density) in accordance with ASTM D698 (Method C or D). Granular materials shall be moisture conditioned, by drying or by adding water, to obtain an in-place moisture content between the optimum moisture content and two percent below the specified optimum moisture content (-2% to optimum).
- .3 Shape and compact alternately to obtain a smooth, even and uniformly compacted base.
- .4 In areas not accessible to rolling equipment, compact to specified density with approved mechanical tampers.
- .5 Place sub-base gravel in continuous horizontal layers not exceeding 150 mm (six (6) inches) lift.
- .6 Apply water to sub-base gravel course uniformly and in sufficient quantities to obtain optimum moisture content for compaction.
- .7 Grade sub-base gravel course to within 1 cm (3/8 inch) of design grade by blading and compacting. Tolerance is 1 cm in 3 m (0.4 inch in 10 feet).

3.2 BASE GRAVEL COURSE CONSTRUCTION

- .1 Compact to density not less than 97% (standard Proctor density) in accordance with ASTM D698 (Method C or D). Granular materials shall be moisture conditioned, by drying or by adding water, to obtain an in-place moisture content between the optimum moisture content and two percent below the specified optimum moisture content (-2% to optimum).
- .2 Ensure that coarse aggregates and fine aggregates are well mixed.
- .3 Place base gravel in continuous horizontal layers not exceeding 150 mm (six 6 inches) lift.
- .4 Apply water to base gravel uniformly and in sufficient quantities to obtain optimum moisture content for compaction.
- .5 Grade base gravel course to within 1 cm (3/8 inch) of design grade by blading and compacting. Tolerance is 1 cm in 3 m (0.4 inch in 10 feet).
- .6 Do not conceal manhole covers, valve covers, catch basin rims, or other features.

3.3 COMPACTION EQUIPMENT

- .1 Use pneumatic tire roller and vibratory steel drum or pad roller for gravel compaction.
- .2 Exercise caution when compacting adjacent retaining walls and other structures - use suitable equipment.

END OF SECTION