1.0 GENERAL

1.1 Scope

1.1.1 The work shall consist of the placement of sub-base course immediately following the placement of the sub-drainage sand or subgrade preparation if no drainage layer and conforming to the lines, grades and cross-sections shown on the drawings. It shall consist of a layer of screened or crushed sand or gravel with or without binder added.

1.2 Related Sections

1.2.1 Section 02130 – Subgrade Preparation

1.2.2 Section 02210 – Sub-drainage Sand

1.2.3 Section 02230 – Granular Base Course

2.0 PRODUCTS

2.1 Granular Material

2.1.1 The sub-base aggregate is to be supplied by the Contractor. The method of processing and delivery must be satisfactory to the Engineer. The sub-base material shall be weighed at the Contractor's expense on scales provided by the Contractor. The sub-base aggregate shall be composed of fragments of durable rock, free from injurious quantities of soft or flaky particles, shale, loam and organic or other deleterious material.

2.1.2 The gradation of sub-base aggregate shall be within the following limits:

SIEVE DESIGNATION	PERCENT PASSING BY WEIGHT
56 mm	100
80 μm	5 - 15
Plasticity Index	0 - 6

2.1.3 Recycled granular aggregate such as crushed concrete, crushed asphalt concrete, recycled asphalt pavement and products of milling and cold planning free of deleterious materials **may** be used as a substitute for natural aggregate where the recycled aggregate meets all gradation and property requirements included within this specification, and approved by the Engineer.

3.0 EXECUTION

3.1 Construction

3.1.1 If pneumatic tire rollers are used, the lift of sub-base course shall not exceed 120 mm in depth. The depth of lift may be increased if mechanical vibratory rollers, approved by the Engineer are used, provided that adequate compaction can be obtained.

3.1.2 The maximum lift thickness shall not exceed 300 mm unless approved by the Engineer.

3.1.3 Sub-base course shall be compacted until no further settlement is apparent. The sub-base course shall be free from any rutting or deformations before the placement of the next course.

3.1.4 Moisture content of sub-base shall be sufficient to allow proper compaction. The Contractor shall add water if required to achieve compaction.

3.1.5 Traffic over sub-base course will not be permitted except by permission of the Engineer. If hauling is permitted over sub-base course the Contractor will, at their expense, maintain and repair the sub-base course as to cross-section and compaction. The Contractor shall provide at his own expense, all necessary protection of works and the safety of the public.

3.1.6 The placement of sub-base course will be carried out in a manner such that hauling and placing operations do not deform the sub-grade or sub – drainage layer over compact the surface along defined routes, resulting in non-uniform density. In general the hauling operation should be carried out in such a manner that traffic on the sub-base is limited to unloaded vehicles.

3.1.7 Ideally the placement would involve a dump and doze operation from a working pad of sub-base, with no equipment travelling across the prepared sub-grade. The Contractor shall place and protect the sub-base in a manner such that rutting or mixing of the in place sub-drainage sand does not occur.

3.1.8 Construction shall be completed and trimmed to **±** 20 mm vertically and **±** 100 mm horizontally.

3.1.9 Deviations shall be neither consistently high nor consistently low.

3.1.10 Prior to placement of base course, the subbase surface shall be **proof rolled** with a loaded tandem truck (approximately 20 tonnes GVW) in the presence of the Engineer. The tandem truck shall travel the full length of the subbase area. If rutting or deflection in excess of **15 mm** is noted, the subbase shall be re-compacted and re-tested.

3.2 Materials Testing Requirement for Quality Control

3.2.1 A sample of subbase shall be taken every 500 tonnes and at least one per day to confirm the gradation according to ASTM D698.