SECTION 20

GRANULAR MATERIALS

20.1 DESCRIPTION

A. General:

This work consists of furnishing and placing one or more courses of crushed rock aggregate on a prepared surface.

B. Related Work Items:

Section 64 - Under-drains
Section 111 - Crushed Aggregate for Maintenance
Section 117 - Aggregates for Granular Bases and Surfacing
~~Section 119 - Mineral Aggregate~~
Section 202 - Engineering Fabric

20.2 MATERIALS

Granular materials of the type specified on the plans or in the specifications shall conform to the requirements set forth in the appropriate Sections.

Granular additives (sand, rock, etc.) may be necessary to produce material of the type specified.

20.3 CONSTRUCTION REQUIREMENTS

A. Preparation of Roadway:

Prior to placement of granular material, required excavation and/or embankment shall be performed so that the finished lines and grades will conform to the template lines on the cross sections and in accordance with the appropriate Sections of these Specifications.

B. Processing and Mixing:

~~Unless otherwise specified, granular materials shall be processed by plant mix methods. When blending of ingredients is accomplished by a central plant, the component materials, excluding added water, shall be fed uniformly into the mixer of the plant at a predetermined rate of each material. The plant shall be equipped with control gates or devices to assure positive proportioning of separately piled or produced materials, and the mixer shall thoroughly mix the materials.~~

When granular material is laid by means other than an approved spreader, the material shall be dumped and formed into a uniformly shaped windrow. The quantity of material in the windrow will be limited to that necessary to construct a compacted layer with a maximum four (4) inch thickness. The material shall be placed in a windrow, spread uniformly, and watered and worked in a manner such that segregation of materials is minimized.

Each layer shall be compacted to the specified densities before the next lift is placed thereon.

Unless otherwise shown on the plans or in the specifications, the required density shall be ninety-five percent (95%), minimum, of the maximum dry density as determined by AASHTO T 180. When called for in the Detailed Specifications, the Contractor shall provide field density testing at the rate and frequency specified or as directed by the Engineer. Field density shall be measured with a nuclear density machine in accordance with Test No. SD114 (AASHTO T 238).

The rollers for compaction shall be pneumatic-tired, with an effective roller weight of not less than two hundred fifty (250) pounds per inch of roller width. Vibratory compacting smooth steel faced equipment may be used in lieu of the above-specified rollers.

C. Base Course or Gravel Cushion:

When the base course surface is to be primed under the base course contract, the final rolling of the top surface of the base course shall be accomplished in such a manner as will embed as many of the loose stones as possible.

D. Gravel Surfacing:

When the gravel surfacing is ready to place, the Contractor shall spread it evenly to the specified width, or as directed by the Engineer. Watering of the material shall be accomplished during the spreading operation. Rolling shall proceed simultaneously with the spreading and watering operations and continue in parallel overlapping strips until the entire area has been rolled at least twice.

Density requirements are not specified, but a uniform, stable surface shall be maintained.

E. Dirt/Dust Control:

All activities associated with this contract shall conform to Rapid City Municipal Ordinance Chapters 8.34 through 8.44 and/or Pennington County Ordinance No. 12.~~Pennington County Ordinance #12, "Fugitive Dust Regulation."~~

The Contractor shall make every reasonable effort to minimize fugitive dirt or dust because of construction activities. The Engineer may require the Contractor to water

or take other actions necessary to prevent blowing dirt and/or dust and other nuisance conditions.

20.4 METHOD OF MEASUREMENT

Granular materials will be measured to the nearest one-tenth (0.1) ton. The Contractor shall provide weigh tickets for all materials furnished, installed, and accepted, showing gross, tare & net weights, project, truck, time, and initials of the scale operator within 48 hours of placement. Weighing shall be done on a SDDOT certified scale. Weigh tickets meeting the above standards will be considered valid.

20.5 BASIS OF PAYMENT

The accepted quantities of granular material will be paid for at the contract price per ton complete in place. Tickets delivered after 48 hours will not be considered valid and will not be paid for.

In the event a separate item for ordinary roadway shaping is not provided in the Bid Proposal for use in connection with granular material construction, payment for the granular material will be full compensation for necessary shaping work.

In the event that Contractor provided field density testing is required, payment shall be at the unit bid price provided in the Bid Proposal. In the event that no unit price for field density tests is provided in the Bid Proposal, such work shall be incidental to the granular material and no separate payment will be made for field density testing.

END OF SECTION