

## SECTION 20

### GRANULAR BASES AND SURFACING

#### 20.1 DESCRIPTION

**A. General:** This work consists of providing one or more courses of aggregate on a prepared surface.

**B. Related Work:**

Section 64	Under-Drains
Section 117	Aggregates for Granular Bases and Surfacing
Section 202	Geosynthetics for Roadways
Section 203	Submittals

#### 20.2 MATERIALS

Granular materials of the type specified in plans or 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. General Requirements:** 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.

Road Mix Method - Prior to placement, the Contractor shall windrow and equalize the materials, including water, to the satisfaction of the Engineer. The Contractor shall use a blade or other suitable equipment to spread the materials. The Contractor shall windrow granular materials dumped on the prepared surface prior to incorporating additives.

**B. Base Course:** The material placed shall be limited to the quantity necessary to construct a maximum of a four (4) inch compacted layer when geotextiles are not used. Each layer shall be compacted to the specified density before the next lift is placed and shall be rolled until a uniform and stable surface is obtained.

Rollers for compaction shall have pneumatic tired rollers and shall have an effective roller weight of at least 250 pounds per inch of roller width or satisfactory vibratory compaction equipment. Tires shall be uniformly inflated so their air pressures will not vary by more than 5 psi. Rollers shall be operated with tire pressures and wheel

loads within the manufacturer's recommended range for the size and ply of the tire being used.

Steel face rollers shall furnish a minimum rolling weight of 275 pounds per inch of rolling width.

- C. Testing:** 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 (Modified Proctor). Field density shall be measured with a nuclear density machine in accordance with SDDOT Test No. SD114 (AASHTO T 238). Field density tests shall be provided every 200 linear feet per compacted lift of material in each lane of roadway, or as determined by Engineer. The Engineer has the authority to determine testing locations in the sub-grade.
- D. Gravel Surfacing:** When the gravel surfacing is ready to be placed, 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.

#### **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.

Water added during laydown operations will not be measured.

#### **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**