

## 208 - LINEAR GRADING AND SUBGRADE STABILIZATION

### 208.1 DESCRIPTION

#### a. Grading

Grading and subgrade preparation shall be in accordance with Section 208 of the Standard Specifications except as otherwise modified herein or as directed by the Engineer.

#### b. Subgrade Stabilization

This work shall be done in accordance with Sections 304 of the Standard Specifications except as otherwise modified herein. It shall consist of placement of crushed stone subgrade if proper compaction can not be met at locations shown on the plans or determined by the Engineer.

### 208.2 MATERIALS

#### a. Suitable Embankment Materials

All required embankments shall be constructed using suitable materials, as herein defined, procured from excavations made on the project site and from the borrow site as required to complete the grading work. All borrow must be as approved by the Engineer.

#### b. Excess Excavated Material

Except as otherwise indicated or approved by the Engineer, all excess excavated materials shall be disposed of by the Contractor away from the site of the work. The disposal and waste and excess excavated materials, including hauling, shall be at the Contractor's expense.

#### c. Rock Excavation

Rock encountered within the full width of the roadway (back of curb to back of curb) shall be undergraded to an elevation 4 inches below finished subgrade elevation. Rock shall be removed in such a manner as to leave no undrained water pockets in the surface. Rock excavation is not anticipated for roadway work but may be required during deep storm sewer placement as indicated on the boring logs.

### 208.3 CONSTRUCTION REQUIREMENTS

#### a. Excavation, Embankment & Compaction of Earthwork

Work shall be performed in accordance with Sections 205 and 207 of the City of Overland Park Standard Specifications.

#### b. Protection and Maintenance of Subgrade

The Contractor shall protect the subgrade by not allowing delivery vehicles of excess weight thereon and by varying the path of delivery vehicles so as to not cause excessive rutting. Wherever considered necessary, in the opinion of the Engineer, gross weights of vehicles shall be reduced as required to protect the subgrade. Heaving or rutting damage to subgrade caused by delivery vehicles during base laying operations shall be immediately repaired just prior to placing base. This may involve use of a flat wheel roller just ahead of the paver. Workmen with shovels shall be in readiness at all times to remove heaved and flaky sub-grade earth between the delivery truck and paver.

#### c. Subgrade Stabilization

It is recognized that, in some areas, efforts to compact sub-grade stipulated to the moisture and density requirements may result in "pumping" subsurface water to the surface and in possible damage to shallow utility conduits or cables. In such areas, where initial compaction efforts clearly indicate, in the opinion of the Engineer, that further compacting effort, including scarification and aeration, would be useless and detrimental, then such compacting efforts shall be halted.

Unsuitable earth may be encountered in areas where it may or may not be practicable to replace with suitable materials from excavation on the work site.

For conditions described in the paragraphs immediately above, the Contractor shall stabilize the sub-grade to a depth of 12 inches below the top of the finished subgrade. The sub-grade shall be stabilized to at least the extent necessary to support paving equipment and delivery vehicles to be operated thereon without undue deformation of the sub-grade and so that the paving can be constructed in accordance with the requirements of the Specifications. Methods used may be any of those described in item 5 below,

subject to the concurrence of the Engineer, which will provide adequate support and not be detrimental to existing utility conduits and cables.

The provisions of these construction requirements for subgrade stabilization shall not be construed to relieve the Contractor of his responsibility for any necessary aeration and compaction of suitable earth at sub-grade level. Any damage to sub-grade caused by rainfall or by the Contractor's operations shall be repaired to the satisfaction of the Engineer at the Contractor's expense.

Contractor may mix or place rock materials such as 5" crusher run as specified below as deemed necessary by the Engineer in accordance with the requirements of Division 300 of the Standard Specifications.

Sieve Size	Sieve Analysis Square Mesh	
	Percent Retained	
	Lower Limits	Upper Limits
5 inch	0	20
3 inch	15	50
2 inch	30	70
3/8 inch	70	95
No. 200	90	100

**208.1 MEASUREMENT AND PAYMENT**

**a. Linear Grading**

The Engineer will measure linear grading by the linear foot. Approximate earthwork quantities, unclassified excavation and embankment (Grading) are shown on the Plans for contractor information. The plan quantity of "Linear Grading" listed in the Bid will be the pay quantity unless an authorized change in street length is made.

No other measurement or payment will be made for grading of drives, side street intersection grading to curb returns (side street grading beyond curb returns included in main line street quantity), incidental grading, excavation for pipe or structures, subgrade preparation or compaction of earthwork.

Payment for "Linear Grading" at the contract unit price bid is full compensation for the specified work, including unclassified excavation, and embankment and compaction, furnishing and placing any required borrow material, foundation treatment, and disposal of the existing subgrade and excess excavation off the job site.

No direct payment shall be made for borrow as it shall be considered subsidiary to "Linear Grading".

**b. Subgrade Stabilization**

The Engineer will measure subgrade stabilization by the cubic yard immediately following pavement removal.

Payment for "Subgrade Stabilization" at the contract unit price bid is full compensation for the specified work. The Contractor shall smooth the subgrade and test it with a loaded truck or motor grader.