

SECTION 2610

AGGREGATE BASE COURSE

PART 1 - GENERAL

1.1 Description

A. Description of Work

The work to be performed in accordance with this section includes furnishing and placing an aggregate base course to plan grades and cross sections.

This work shall include the furnishing of all labor, tools, equipment, materials and performing all operations required to provide a complete item in accordance with the project plans and specifications.

B. Related Work Specified Elsewhere

Earthwork	Section 2200
Subgrade Preparation	Section 2600

C. Definitions

1. Crushed Rock

Crushed rock shall consist of the product obtained by crushing rock, stone, or gravel so that at least 50 percent by weight of aggregate is retained on the No. 4 sieve for 3/4 inch or larger maximum sizes, and 50 percent is retained on the No. 8 for maximum sizes less than 3/4 inch. All crushed rock particles shall have at least one rough, angular surface produced by crushing.

2. Gravel

Material designated herein as gravel shall be composed entirely of particles that are either fully or partially rounded and water-worn. The quality and gradation requirements shall be as specified herein.

3. Sand

Sand shall consist of fine granular material produced by the crushing of rock or gravel or naturally produced by disintegration of rock and shall be sufficiently free of organic material, mica, loam, clay, and other deleterious substances to be thoroughly suitable for the purpose for which it is intended.

1.2 Quality Assurance

A. Reference Test Standards and Specifications

ASTM C117, Test Method for Material Finer Than 75-um (No. 200) Sieve in Mineral Aggregates by Washing.

ASTM C131, Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

ASTM C136, Method for Sieve Analysis of Fine and Coarse Aggregates

ASTM D1556, Density of Soil in Place by the Sand-Cone Method.

ASTM D1557, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.

ASTM D6938-08a, Density of Soil and Soil-Aggregate in Place by Nuclear Methods.

ASTM D6938-08a, Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods.

ASTM D4318, Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

Rock Correction Procedure for Maximum Density Determination, ARIZ 227.

B. Frequency of Testing

1. Maximum Dry Density and Optimum Moisture Content, ASTM D1557.

- a. One test for each different class to type of material shall be provided by the **CONTRACTOR** prior to placing aggregate base.
- b. **CONTRACTOR** shall provide additional test when previous test is suspect, due to subtle changes in the material, as determined by the **OWNER**.

2. Density of Soil In-Place by the Sand Cone or by Nuclear Methods, ASTM D1556 or D6938-08a.

- a. **CONTRACTOR** will perform a minimum of one test per lift per 2,000 square yards per type of material.
- b. **CONTRACTOR** will perform additional test as required to ensure proper compaction.

3. Method for Sieve Analysis of Fine and Coarse Aggregates, ASTM C136.

- a. **OWNER** may perform sampling of Aggregate Base in place to check conformance with gradation requirements.

C. Testing Tolerances

1. Percent Relative Compaction

Not less than as specified on plans or in these specifications.

2. In-Place Moisture Content

As required to achieve minimum relative compaction.

3. Soft or Yielding Surfaces

Regardless of the percent compaction obtained by test, areas which are soft or yield under the load of construction equipment are to be removed and replaced at no additional cost.

1.3 Submittals

A. Materials Test Report

Report on maximum dry density and optimum moisture content, as well as gradation prior to beginning of construction.

1.4 Job Conditions

A. Soils Report

This section does not apply to this project.

PART 2 - MATERIALS

2.1 Aggregate Base

Crushed aggregate or processed natural mineral shall be clean, hard, sound and free of any detrimental quantity of soft, friable elongated or laminated pieces, organic matter or other deleterious substances. Aggregate base shall meet the following requirements:

A. Grading

ASTM C136 and ASTM C117

Sieve Size	Percent by Weight Passing
1-1/8"	100
No. 4	38-65
No. 8	25-60
No. 30	10-40
No. 200	3-12

B. Percentage of Wear

ASTM C131, maximum percentage of wear of 40 after 500

revolutions.

C. Plasticity Index and Liquid Limit

ASTM D4318, maximum plasticity index of 5, maximum liquid limit of 25 percent.

D. Fractured Faces

1. Maximum aggregate size of 3/4 inch or greater, at least 50 percent of aggregate retained on the No. 4 sieve, at least one fractured face.
2. Maximum aggregate size less than 3/4 inch, at least 50 percent of aggregate retained on the No.8 sieve, at least one fractured face.

PART 3 - EXECUTION

3.1 Preliminary Investigation of the Work

Verify that all of the preliminary work including clearing, grubbing, subgrade preparation and staking has been performed in accordance with the plans and specifications prior to placing aggregate base.

3.2 Base Course Placement and Compaction

A. Moisture Conditioning

Condition the base by aerating or wetting to the moisture content required to obtain the minimum percent compaction. Mix the soil such that the moisture content is uniform throughout the lift. Take care so as not to damage the subgrade below.

B. Lift Thickness

Place and compact base course lifts, 6 inches or less, in a single lift. For lifts in excess of 6 inches thick, place and compact in successive equal layers not to exceed a maximum of 6 inches.

C. Compaction

Construct base course to achieve a uniform soil structure. Compact the base course to a relative density of not less than 100 percent.

D. Base Course Tolerances

Place and compact the base course to the grade and cross sections indicated. The base course shall not vary from plan grade and cross sections by more than 1/4 inch.

E. Deficiencies

Remove and replace deficiencies prior to placement of the pavement. Deficiencies in the base course, covered by paving will be removed and replaced at no additional to the **OWNER**.

PART 4 - MEASUREMENT AND PAYMENT

4.1 Measurement

The quantity of aggregate base course to be paid for will be determined by measurement of the number of square yards of each thickness placed and accepted by the **OWNER** as complying with the drawings and specifications. The quantity shall be based on plan dimensions.

4.2 Payment

Payment will be made at the contract unit price per square yard for each thickness of aggregate base course. This price shall be full compensation for furnishing all materials, for preparing and placing these materials, and for all the labor, equipment, tools and incidentals necessary to complete the item.

See Section 00310 Bid Schedule for Bid Items.