

SECTION 02813
FURNISHED TOPSOIL

02813.01 GENERAL

A. Description

Furnished topsoil shall include, but not necessarily be limited to, preparation of surfaces to be covered with topsoil, furnishing, excavating, loading, and hauling of loamy topsoil from an approved source, placing and spreading of this topsoil over the prepared surfaces, and the application of lime and soil amendments in accordance with the Contract Documents.

B. Related Work Included Elsewhere

1. Protection of the environment; Section 01500.
2. Salvaged topsoil; Section 02811.
3. Placing salvaged topsoil; Section 02812.
4. Turf establishment; Section 02820.

C. Quality Assurance

1. The Engineer may inspect the material prior to and/or as it is being placed to determine that the material meets the requirements specified herein.
2. The Contractor shall furnish a 50 pound sample of topsoil from each intended topsoil source to the Engineer for inspection. No topsoil shall be placed without prior approval of the material sample by the Engineer.

D. Submittals

The Contractor shall submit a certified grading analysis to the Engineer for each topsoil source.

02813.02 MATERIALS

A. Materials Furnished by the County

The County will not furnish any topsoil other than that which is available within the excavation and grading limits of the project site as designated on the Plans by sections, guidelines, spot elevations, and/or contours lines, or as specified.

B. Detailed Material Requirements

1. Lime and other soil amendments shall be as specified in Section 02820.02.
2. Natural Topsoil
 - a. Furnished topsoil shall consist of natural surface soil from well drained areas from which no topsoil has previously been stripped.
 - b. The area or areas from which topsoil is to be taken shall possess such uniformity of soil, depth, color, and other characteristics to offer assurance that when removed in commercial quantities that the soil shall be homogeneous in nature and meet the requirements of these Specifications. The soil shall be free from material harmful to plant growth and any parts (seed, rhizomes, roots, etc.) of Johnsongrass, Canada Thistle, or other noxious weeds.
 - c. The topsoil shall have an organic content of not less than 1.5% by weight when determined in accordance with MSMT 603. Furnished topsoil shall have a pH value not less than 6.0. Lime shall be applied and incorporated with the furnished topsoil as specified. Other soil amendments shall be applied as directed by the Engineer.
 - d. Grading analysis shall conform to the following:

<u>Sieve Sizes</u> <u>U.S. Standard</u>	<u>Minimum Percent Passing</u> <u>by Weight</u>
2 inch	100
No. 4	90
No. 10	80

Topsoil shall meet the analysis of sand, silt and clay when determined in accordance with AASHTO T 88 with the following exceptions:

<u>Fraction Sizes</u>	<u>Percent Passing by Weight</u>
Sand (2.0-0.050 mm)	20-75
Silt (0.050-0.002 mm)	10-60
Clay (less than 0.002 mm)	5-18

02813.03 EXECUTION

A. General

1. Equipment and methods of operation shall avoid lifting the subsoil or other unsuitable material with the topsoil. The Contractor shall mow or otherwise remove

all heavy grass, weeds or other vegetation over areas to be stripped before lifting or removing topsoil. If topsoil is removed in excess of the amount required to complete this item, it shall be disposed of by the Contractor. Stripped topsoil containing subsoil or foreign material, including stumps, roots, brush, etc., will be rejected by the Engineer. No payment will be made for excess material removed or rejected material.

2. The Contractor shall make all arrangements and assume all responsibility for consents, agreements, payments, etc. with owners of property involved in topsoil stripping operations.
3. During hauling operations, roadway surfaces shall be kept clean. Any topsoil or other material brought upon any roadway surface shall be removed promptly and thoroughly before it becomes compacted by traffic.

B. Surface Preparation

The Contractor shall prepare the surfaces of all areas to be covered with topsoil under this item and finish them to the lines indicated on the Plans, and parallel to the proposed finished grade. The surfaces shall be free from rock or other foreign material which is 1-1/2 inches or greater in any dimension. Immediately before being covered with topsoil, the prepared surface shall be raked or otherwise loosened. Before the placing of the topsoil, all construction work in the immediate area shall have been completed.

C. Placing and Spreading

1. Topsoil shall be placed and spread over the areas designated to a depth that, after natural settlement, the completed work shall be in accordance with the thickness, lines, grades and elevations shown on the Plans.
2. After spreading the topsoil, all large stiff clods, hard lumps, large rocks, roots, stumps, litter, or other foreign materials shall be raked up, removed from the topsoiled area, and disposed of by the Contractor. Spreading shall be completed in a manner that will permit seeding or planting without additional soil preparation. Lime and soil amendments shall be added as specified.
3. When topsoil is placed on slopes on which the characteristics of the subsoil are such that it will blend with the topsoil, the Contractor shall work the topsoil into the subsoil by means approved by the Engineer to eliminate any semblance of a slip-plane between the two materials and leave a sufficient cover of topsoil to insure germination of the seed.
4. Where subsoils on slopes are of a character that will not blend with the topsoil, the Contractor shall roughen, ridge or serrate the subsoil to provide a bond for the topsoil until the seeds can germinate and develop roots into the subsoil.

5. At the written direction of the Engineer, topsoil may be omitted from slopes where its use is not necessary or advantageous.
6. The Contractor shall maintain the specified depth of topsoil from the time it is placed until seeding and securing of mulch are completed.

D. Temporary Shutdown

If soil or weather conditions are unsuitable, as determined by the Engineer, the Contractor shall cease placing topsoil until permission to resume topsoil operations is obtained from the Engineer.

E. Stockpiling

If topsoil is stockpiled for future use on the project, the stockpiling shall be done as outlined in Section 02811.03.

02813.04 METHOD OF MEASUREMENT

Measurement for furnished topsoil will be made on the basis of volume by one of the following methods as determined by the Engineer to be appropriate.

A. Pit Average End Area

Measurement for furnished topsoil will be made in its original position by the method of initial and final cross sections and the volume computed by the Method of Average End Areas. All measurement will exclude objectionable material such as: weeds, roots, or other unsuitable spoil material.

B. Stockpiled Average End Area

If the Contractor elects to stockpile furnished topsoil before use on the Project, it will be measured in its original stockpiled position by the method of initial and final cross sections and the volume computed by the Method of Average End Areas. All measurement will exclude objectionable material such as: weeds, roots, or other unsuitable spoil material as indicated under Section 02812.03.

C. Struck Load

Measurement for furnished topsoil will be made by the volume of struck loads of known volume. All vehicles shall be loaded to at least their water level capacity. Heaping will be permitted providing the minimum volume is obtained.

02813.05 BASIS OF PAYMENT

Payment for furnished topsoil will be made for the number of cubic yards of topsoil provided, as determined in Section 02813.04 and placed in accordance with these Specifications. The price bid shall include all labor, materials, equipment, and incidentals necessary to complete the work as specified.

In the distribution of topsoil and related materials, the Contractor shall take into consideration the characteristics of the subsoils and/or slopes. No extra compensation will be made for preparing sloped surfaces for topsoil.

Any increase or decrease in the amount of this item as a result of characteristics of the subsoil and/or slopes will not be considered a justifiable basis for a claim for additional compensation.