

ITEM 160

TOPSOIL

160.1 Description. This Item shall govern furnishing and placing topsoil to the lines, grades and depth shown on the drawings or as directed by the Engineer. Topsoil is defined as the surface layer of material containing decaying vegetable matter and roots. It is not necessary to strip the section of topsoil containing fine, hairline roots, only soil containing moderate to severe root mat.

- 160.2 References.
- ASTM D422 “Standard Test Method for Particle-Size Analysis of Soils”
  - ASTM D1140 “Standard Test Methods for Amount of Material in Soils Finer than the No. 200 (75-µm) Sieve”
  - ASTM D2974 “Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils”
  - ASTM D4972 “Standard Test Method for pH of Soils”
  - AASHTO T194 “Standard Method of Test for Determination of Organic Matter in Soils by Wet Combustion”

- 160.3 Materials.
- A. Topsoil shall be:
- capable of sustaining native plant growth
  - easily cultivated;
  - highly resistant to erosion;
  - free from objectionable material including gravel, large roots, stumps, wood, brush, debris, hard clods, clay balls, hardpan, refuse or other deleterious materials; and
  - of reasonably uniform quality.
- B. If topsoil is required for the project, it shall be provided from an onsite source, or imported as directed by the Engineer.
- C. Imported Topsoil shall conform to the following requirements:

TABLE 1

SPECIFICATION	UNIT	VALUE	APPLICABLE STANDARD
Soil Reaction	pH	5.5-8.5 <sup>(a)</sup>	ASTM D4972
Passing No. 4 Sieve	%	95-100	ASTM D422
Sand Size, 2.0-0.05 mm	%	10-70	ASTM D422
Silt Size, 0.05-0.005 mm	%	0-40	ASTM D1140
Clay Size, <0.005 mm	%	20-50	ASTM D1140
Easily Oxidizable Organic Matter	%	2.5-10 <sup>(b)</sup>	ASTM D2974 AASHTO T194

NOTE:

- (a) Determine pH by Method A for an onsite source and Methods A and B for imported topsoil. If the onsite source topsoil does not satisfy the specified pH range, achieve the desired pH by amending the soil as recommended by the certified agronomist's report of soil sample analysis.
- (b) Soil testing company shall identify test method used if different from the specified. The Engineer must approve alternate test methods.

D. Topsoil shall have Liquid Limit <50 and Plasticity Index <20

160.4 Topsoil Delivery, Storage and Handling. Deliver, stockpile and handle topsoil in such a way as to not contaminate the material with other soils or objectionable materials.

The stockpile or disposal site shall not be located within an environmentally sensitive area, floodway, wetland, or in "Waters of the United States". If the stockpile or disposal site must be located in wetland as defined in the plans, then the County shall be responsible for ensuring that the appropriate Department of the Army permit has been obtained for the activity.

160.5 Construction Methods.

- A. Strip topsoil as specified on the plans or as directed by the Engineer from area to be excavated or filled and stockpiled for use on the final grades and ditch slopes. Install and maintain proper Storm Water Pollution Prevention Best Management Practices (SWPPP BMPs) to stockpiled topsoil at no additional cost to Harris County.
- B. Prior to placing topsoil, scarify or plow the subgrade to a minimum depth of 4 inches until it is loose and uncompacted to provide bonding of topsoil layer to subgrade. Remove vegetation and foreign inorganic material. Place topsoil on loosened material and roll lightly with appropriate lawn roller to consolidate topsoil.
- C. The Contractor shall place the topsoil to the lines and grades and to the depths shown on the drawings.
- D. Remove spilled topsoil from curbs, gutters, and paved areas and dispose of excess topsoil offsite.
- E. Place topsoil to promote drainage and compact with light roller. Water topsoil after placement until saturated for minimum specified depth. Fill in and recompact any areas of settlement.
- F. Do not place topsoil when it is excessively wet or dry.

G. If the topsoil excavated from the site will be utilized for the construction of wetlands, then the Contractor shall store the material in piles less than 5 feet in height to ensure the survivability of the existing seed bank.

H. Topsoil may be used to meet the requirements of Item 132 "Embankment" for the top 4" of fill for unpaved areas of the project. When so utilized, it will be included as part of the embankment, volume and its placement will be incidental to the Item 110 "Roadway Excavation", as is the embankment itself. Compaction of topsoil shall comply with the compaction requirements of this Item, and not Item 132.

160.6 Submittals Required. Contractor shall submit certification from their supplier that their topsoil meets the material requirements of Section 160.3.

The Contractor is required to submit the location of the pit(s) and a sample from which the material is to be taken, for the Engineer's approval. The Contractor shall submit the vendor's technical description of the topsoil.

160.7 Quality Control. The Engineer may question the quality of material at any stage of work or location if changes in characteristics are apparent.

160.8 Measurement. When topsoil has to be imported from sources other than the job site, topsoil shall be measured per square yard of specified depth furnished, delivered and placed, in accordance with these Standard Specifications. Topsoil placed in accordance with Section 160.5 above is considered as Embankment.

160.9 Payment. Payment for imported topsoil when shown in the plans shall be made at the contract unit price per square yard of specified depth of topsoil, which price shall be full compensation for all labor, materials, equipment and incidentals necessary to furnish, haul and place the topsoil.

There are line code(s), description(s), and unit(s) for this Item.

NOTE: This Item does not require a drawing

NOTE: This Item requires other Standard Specifications

Item 132 "Embankment"

END OF ITEM 160