

SECTION 02923

LANDSCAPE GRADING

1. PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Landscape Grading.
- B. Topsoil.
- C. Wetland Topsoil.
- D. Sand Beach Construction with Filter Fabric.

1.2 RELATED SECTIONS

- A. Section 01400 - Quality Control: Compaction requirements of backfill.
- B. Section 02211 - Rough Grading.
- C. Section 02223 - Backfilling.
- D. Section 02722 – Storm Sewerage Systems.
- E. Section 02936 – Seeding.
- F. Section 02950 – Trees, Plants, and Groundcovers.
- G. Section 02960 – Wetland Mitigation.

1.3 SAMPLES

- A. Submit samples under provisions of Section 01400 - Quality Control.
- B. Submit 5 gallon bucket of sample of imported fill to testing laboratory, in air-tight containers.
- C. Disregard sample submission if recent test results are available for type of fill.

1.4 PROTECTION

- A. Protect landscaping and other features remaining as final Work.
- B. Protect existing structures, fences, roads, sidewalks, paving, mailboxes, and curbs.

1.5 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Topsoil, 4 inches – Division I Only:
 - 1. Basis of Measurement: Included in the unit price bid per acre for topsoil as stated in the proposal.

2. Basis of Payment: Includes all labor, material, and equipment necessary to place, grade, and lightly compact topsoil to the depth and grades as shown on the plans. On site topsoil may be reused as shown on the plans and as directed by the Engineer. Topsoil imported from off site is included in this pay item.
- B. Wetland Topsoil:
 1. Basis of Measurement: At the unit price bid per acre as stated in the proposal.
 2. Basis of Payment: Includes all labor, material, and equipment necessary to place, grade and lightly compact wetland topsoil to the grades as shown on the plans.
- C. Sand Beach Construction with Filter Fabric:
 1. Basis of Measurement: At the unit price bid per square yard as stated in the proposal.
 2. Basis of Payment: Includes all labor, material, and equipment necessary to place and grade beach sand 24 inches deep over fabric to the contours and elevations as shown on the plans.

2. PART 2 PRODUCTS

2.1 MATERIALS

- A. Topsoil: Min. 6 inches compacted depth, unless otherwise stated.
- B. Topsoil: Friable loam; free of subsoil, roots, grass, excessive amount of weeds, stone, and foreign matter; acidity range (pH) of 5.5 to 7.5; containing a minimum of 4 percent and a maximum of 25 percent organic matter. Topsoil shall be imported as specified on the plans.
- C. Contractor shall conduct fertility and calcium tests on all topsoil to be used in lawn and planting areas to assure that soil conditions are ready to receive plantings.
- D. Wetland Topsoil/Muck: Fertile, friable, natural loam; surface soil containing a minimum of 5 percent and maximum 100 percent organic matter, excluding peat; acidity range (pH) of 5.5 to 7.5; capable of sustaining vigorous plant growth, free of any admixture of subsoil, clods of hard earth, plants or roots, sticks, or other extraneous material harmful to plant growth.
 1. Peat may not be used as an acceptable organic material. Peat is defined in MDOT standard specifications as organic matter consisting of under-composed or slightly decomposed plant material accumulated under conditions of excessive moisture. If the organic remains are sufficiently fresh to identify plant form, the material is classified as peat; if decomposition has gone so far as to make recognition of the plant form impossible, it is classified as muck.
 2. Muck shall not be imported or reused from wetlands dominated by invasive plant species such as reed canary grass (*Phalaris arundinacea*). Contractor shall provide Engineer with a list of organic soil sources and a certification that these areas have been inspected by a professional wetland biologist, botanist, and/or landscape professional, and have been determined to be visibly free of invasive species.

3. Existing topsoil/muck within wetlands shown to be disturbed on the plans may be stripped and stockpiled for reuse within proposed wetlands, providing it meets the requirements of Section 2.1. Have the wetlands areas inspected by a professional wetland biologist, botanist, and/or landscape professional prior to stripping or cleaning for certification that these areas are visibly free of invasive species.

E. Submit lab results or samples for testing as requested by the Owner or Engineer if imported topsoil is used.

3. PART 3 EXECUTION

3.1 INSPECTION

A. Verify Site conditions and note irregularities affecting Work of this Section.

B. Beginning Work of this Section means acceptance of existing conditions.

3.2 SUBSOIL PREPARATION

A. Eliminate uneven areas and low spots. Remove debris, roots, branches, and stones, in excess of 1/2 inch in size. Remove and dispose of off site subsoil contaminated with petroleum products.

B. Scarify subgrade to minimum depth of 8 inches where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

3.3 PLACING TOPSOIL AND WETLAND TOPSOIL

A. Place topsoil to a minimum 6 inches compacted depth in areas where seeding, sodding and planting is scheduled. Place to a minimum 18 inches in wetland areas.

B. Place a minimum 18 inches organic muck or wetland topsoil in all wetland areas. The topsoil shall be placed and graded as shown on the plans with a minimum of 12 inches in all areas after grading.

C. The bottom of emergent wetland areas should not be graded flat and should be left rough graded.

D. Use topsoil in relatively dry state. Do not place topsoil when weather conditions are excessively windy.

E. Handle and place topsoil only when weather and soil moisture permits.

F. Placement of topsoil in frozen or muddy conditions shall not be permitted.

G. Fine grade topsoil eliminating rough or low areas. Maintain levels, profiles, and contours of subgrade.

H. Remove stone, roots, grass, weeds, debris, and foreign material while spreading.

I. Manually spread topsoil around trees and plants to prevent damage.

- J. Lightly compact placed topsoil in preparation for seeding, fertilizing, and mulching.
- K. Fertilizer and lime shall be applied at the minimum rates indicated by tests and shall be raked into the top 2 inches of the topsoil.
- L. Remove surplus subsoil and topsoil from Site.
- M. Import topsoil as necessary to match the depths as specified on the plans.
- N. Leave stockpile area and site clean and raked, ready to receive landscaping.
- O. Place required trees, shrubs, fences, and mail boxes in their proper locations.
- P. Reconstruct and place guard rails in proper locations to meet MDOT and local Road Commission specifications.

3.4 TOLERANCES

- A. Top of Topsoil: Plus or minus 1/2 inch.

END OF SECTION