

SECTION 32 9119.13

TOPSOIL PLACEMENT AND GRADING

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Furnish and Install Imported Topsoil.

1.2 REFERENCES

- A. ASTM D 1557: Method for Laboratory Compaction Characteristics of Soil using Modified Effort.
- B. WSDOT *Standard Specifications*.

1.3 DEFINITIONS

- A. Percent Compaction: The required in-place dry density of the material, expressed as a percentage of the maximum dry density of the same material determined by ASTM D1557 test procedure.
- B. Soil Subgrade: The soil surface on which topsoil is placed.
- C. Finished Grades: The final grade elevations indicated on the Drawings.
- D. Aesthetic Acceptance of Grades: Acceptance by the Owner in writing of the Aesthetic Correctness of the contours as observed by Owner. Aesthetic Acceptance does not address whether an area drains properly, whether the areas are at the correct elevation, or whether it has been compacted properly.
- E. Acceptance: Wherever the terms "acceptance" or "accepted" are used herein, they mean acceptance of the Owner in writing.
- F. Drawings: Contract Drawings, sections, and profiles showing finished surface grades.
- G. Elements with Fixed Elevations: Paths, paving, concrete pads, headers, footings, foundations, walls, and other structures with fixed-spot elevations.

1.4 SUBMITTALS

- A. Submit product data and 1-gallon zip- lock bag sample of Imported Topsoil.
- B. Submit 1-gallon sample of each type of soil amendment.

1.5 SITE CONDITIONS

A. Environmental Protection:

1. Soil Moisture Content: Do not work soil when moisture content is so great that excessive compaction will occur, nor when it is so dry that dust will form in air or that clods will not break readily.

PART 2 - PRODUCTS

2.01 MATERIALS

A. IMPORTED TOPSOIL

Provide at 8" depth at landscape areas and 4" depth at hydroseeded areas.

Imported Topsoil shall consist of a uniform mixture of organic compost (20%-30% by volume) and Sandy Loam (70%-80% by volume). Maximum clay content should be less than 5%.

2

Sand Gradation

Sieve size	Percent Passing
3/8"	100
1/4"	99-100
US No. 4	98-100
US No. 8	92-100
US No. 16	82-100
US No. 30	50-80
US No. 50	10-30
US No. 100	0-5
200 wet sieve	0-2

Compost shall Fine Compost in compliance with WSDOTSS 9-14.4(8).

Sandy Loam shall comply with USDA Soil Texture Triangle and shall comply with the following gradation:

Clay	1-5%
Silt	35-45%
Sand	50-60%

Imported Topsoil pH shall be between 5.5 to 7.5 (to be determined by a certified soil testing lab).

Imported Topsoil mixture shall be uniform and free of any contaminants (i.e. weed seed, foreign debris, root-able plant parts, etc.). Soils should also be free of any pesticide residues (to be determined by a certified soil testing lab). Contractor is informed that any evidence of root-able plant parts such as equisetum will result in the complete removal and

replacement of all Imported Topsoil. Soil mix shall be stored/covered accordingly to prevent wetting or saturation.

Imported Topsoil is to be used in all landscape planter beds with the exception of the raised planter beds and above garage and vault structures.

- B. Grading Equipment: Appropriate size and flexibility to achieve the sculptural forms, profiles, straight slopes, and slope rounding indicated on the Drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Subgrade:

1. Verification: Verify that the subgrades have been graded to within one tenth of a foot (minus the topsoil depth) of the grades shown on the Drawings.
2. Aesthetic Acceptance: Verify that Owner has given the subgrade aesthetic acceptance. Do not place topsoil or rototill subgrade until Consultant has accepted subgrade for aesthetic correctness.
3. Notification of Discrepancies: Notify the Owner in writing of any discrepancies.

3.2 SURVEY REQUIREMENTS

- A. Lines and Levels: Establish lines and levels, locate and lay out by instrumentation and similar appropriate means for all planting area finish grades.
- B. General Staking: Provide a sufficient quantity of grade stakes as required to provide minimum depth layer of topsoil.

3.3 PREPARATION

A. Protection of Existing Conditions:

1. General: Use every possible precaution to prevent damage to existing conditions to remain such as structures, utilities, irrigation systems, plant materials and paving on or adjacent to the site of the Work.

B. Surface Preparation:

1. Inspection: Inspect subgrade soil for stones over one inch in diameter, sticks, oils, chemicals, plaster, concrete, and other deleterious materials.
2. Removal: Perform all Work when necessary to remove the deleterious materials before and after subgrade preparation.

3.4 PREPARING SUBGRADE

- A. Prepare subgrade to avoid excessive compaction. If Owner determines that excessive compaction has occurred, it shall be corrected as follows:

1. Scarify with a rototiller to a depth of 4 inches minimum in one direction.

Note: This Work shall occur subsequent to Irrigation Work and immediately before Topsoil Placement.

3.5 TOPSOIL PLACEMENT

- A. Imported Topsoil at Landscape Areas

1. Place Imported Topsoil evenly over indicated compacted subgrade in landscape areas to the depths shown on Drawings.

3.6 FINISH GRADING OPERATIONS

- A. General: Grade with uniform slope between points where elevations are given or between such points and existing grades, unless indicated otherwise.
- B. Soil Surface Tolerances
1. Allowances: Make proper allowances for settlement, spoils from plant pits, etc.
- C. Surface Drainage:
1. Slope finish grades to drain surface water away from buildings, walks, paving, and other structures unless otherwise indicated.
 2. Slope finish grades to drain surface water to catch basins, area drains or swales as shown on the Drawings.
- D. Depressions and Loose Material: Fill and compact depressions, and remove all loose material to finish surface true to line and grade, presenting a smooth, compacted, and unyielding surface.
- E. Roller Compact with sod roller filled with water. Add Imported Topsoil as necessary to achieve finish grades.
- F. Excessive Compaction: Rip areas that have become compacted more than 85 percent compaction to a 12-inch depth. Roto-till and blade smooth prior to planting and irrigation.
- G. Imported Topsoil shall be installed three and half inches (3-1/2") lower than all adjacent pavement surfaces and top of walls. Grade a 12" wide @ 2%-4% transition from pavements. Transitions shall be graded uniform and smooth with no surface irregularities.

- H. Remove all visible evidence of wood debris and stones from all finish grades and dispose off-site.

3.7 PROTECTION

- A. Contractor is informed that physical and visual damage to any constructed improvement, including equipment wheel/track marks may result in the removal and replacement of damaged improvement, at the sole discretion of the Owner. Contractor shall schedule work and deploy measures to protect all constructed improvements.
- B. Erosion: Correct erosion and siltation damage at no cost to the Owner.
- C. Settlement Repair: Correct settlement within the Warranty period at no cost to the Owner.
- D. Drainage: Keep surface of topsoil in such condition that it will drain readily and effectively.
- E. Materials, Tools, and Equipment: In handling materials and operating tools and equipment, protect the topsoil from damage by laying down planks, plywood, or other accepted protective materials where required.
- F. Vehicular Traffic: Do not allow vehicles to travel in a single track. If ruts are formed, blade the topsoil smooth.
- G. Storage of Materials: Do not store or stockpile materials on topsoil.
- H. Dust Control: Use water trucks or temporary irrigation and take all precautions needed to prevent a dust nuisance to adjacent public or private properties.

3.08 CLEANUP & REMOVAL

- A. Daily: Keep all areas of Work clean, neat, and orderly at all times.
- B. Absolutely no stockpiling of any topsoil on pavement surfaces shall be permitted at any time during construction.
- C. Final: Clean up and remove all excess Imported Topsoil deleterious materials and debris from the entire Work area prior to Final Completion.

END OF SECTION