



APPENDIX A

SELECTED SPECIAL PROVISIONS

1.0 DESCRIPTION

This item shall consist of the supply and application of approved compost material as shown on the plans or as directed by the Project Engineer.

2.0 REFERENCES

All reference standards shall be current issue or latest revision at the first date of tender advertisement. This specification makes reference to the following standards, specifications or publications:

- CCME "Guidelines for Compost Quality"
- NSDEL "Composting Facility Guidelines"
- Canada Fertilizers Act and Regulations
- TMECC: "Test Methods for the Examination of Composting and Compost"
- AASHTO Standard Specification: Compost for Erosion/Sediment Control (Compost Blankets); AASHTO Designation MP 10
- AASHTO Designation T 265-93 (2000) Laboratory Determination of Moisture Content of Soils
- AASHTO Designation T 267-86 (2000) Determination of Organic Content in Soils by Loss on Ignition

3.0 SUBMISSIONS AND DESIGN REQUIREMENTS

Prior to delivery of compost to the site, the Contractor shall provide the Project Engineer with the following information:

- A list of the feedstock by percentage used in producing the compost material
- A certification statement verifying that the compost meets NSDEL requirements for Class A Compost
- A copy of the laboratory analysis for the compost material showing major plant nutrients, pH, CEC and mineral (metal) concentrations.
- A certification statement verifying that the compost material meets the physical requirements in Table 1.

The Project Engineer may require the Contractor to provide a sample of the compost for confirmatory purposes.

4.0 MATERIALS

The compost material shall be an organic substance produced from the aerobic decomposition of organic matter. The compost material shall not contain any visible refuse material nor any material toxic to plant establishment or growth. The composted material may be derived from, but not limited to, leaves, yard trimmings, food scraps, food processing residues, manure and other agricultural residues, bark and other forest residues, soiled or un-recycled paper and biosolids.

Compost materials shall meet all applicable provincial and federal regulations and guidelines for compost production. Compost material shall meet the time and temperature requirements to control pathogens, noxious weeds and rodent attraction. Compost material shall meet the CCME Classification for Category A. Category B may be used at the discretion of the Project Engineer and approval from NSDEL. Compost material shall meet the physical requirements shown in Table 1 or meet requirements designated by the Project Engineer.

Table 1

Compost for Manufactured Topsoil	Erosion Control Compost	General Use Compost
Organic Matter Content: 30% dry mass	Organic Matter Content: 40-60% dry mass	Organic Matter Content: 40-60% dry mass
Moisture Content: 40-60%	Moisture Content: 40-60%	Moisture Content: 40-60%
Particle Size: 100% passing 28 000 µm sieve	Particle Size: 100% passing 80 000 µm and <70% passing 25 000 µm sieve	Particle Size: 100% passing 20 000 µm and 70% passing 850 µm sieve
Soluble Salts: 5.0 max. dS/m	Soluble Salts: 5.0 max. dS/m	Soluble Salts: 5.0 max. dS/m
pH: 5.5 - 8.5	pH: 5.5 - 8.5	pH: 5.5 - 8.5

5.0 CONSTRUCTION METHODS

After the designated areas have been graded according to the lines and grades approved by the Project Engineer, compost of the specified type shall be placed according to the following descriptions. Compost materials shall be loose and friable and be free of dust at the time of application. No compost materials shall be stored on site within 30 m of a watercourse.

5.1 Compost Manufactured Topsoil. Compost manufactured topsoil shall consist of soil material amended with 10 - 30% compost by volume. The soil material shall be free from trash, stumps and other objectionable materials, and shall be approved by the Project Engineer, prior to beginning the mixing process.

5.1.1 Blended On Site. Compost shall be evenly spread in a uniform layer over the previously prepared slope and thoroughly mixed to the depths shown on the plans or as directed by the Project Engineer.

5.1.2 Pre-Blended. Topsoil manufactured off-site shall be spread over the prepared slope in a uniform layer to a depth of 10 -20 cm. The topsoil shall be free of objectionable materials.

5.2 Erosion Control Compost. Compost materials shall be spread evenly over the prepared subgrade or slopes to form a uniform layer of a thickness of 50 - 75 mm or as shown on the plans. Compost shall not be used for erosion control on slopes \geq steeper than 2:1.

5.3 General Use Compost. General use compost shall be applied as a top dressing over established areas of turf, grass or other ground cover to the depth specified on the plans or as directed by the Project Engineer.

6.0 QUALITY CONTROL / QUALITY ASSURANCE

7.0 METHOD OF MEASUREMENT

Measurement for compost shall be the area in square metres where erosion control compost, general use compost, on-site blended compost, and manufactured topsoil has been acceptably applied and in place, measured along the slope of the ground.

8.0 BASIS OF PAYMENT

- Blended On-Site Compost
- Pre-Blended Compost
- Erosion Control Compost
- General Use Compost

Payment at the contract unit price for the above tender item(s) shall be full compensation for all labour, equipment and material necessary to perform the work.

Slope preparation prior to use of compost materials and removal of objectionable materials will not be measured for payment, but shall be considered as incidental to the bid items under which the excavation or embankment construction of such areas was carried out.

If hydroseeding is required, payment for hydroseeding will be made as per Division 7 Section 5.

9.0 WARRANTY

1.0 DESCRIPTION

This item shall consist of the supply and application of approved bark material as shown on the plans or as directed by the Project Engineer.

2.0 REFERENCES

- AASHTO Designation T 265-93 (2000) Laboratory Determination of Moisture Content of Soils
- AASHTO Designation T 267-86 (2000) Determination of Organic Content in Soils by Loss on Ignition

3.0 SUBMISSIONS AND DESIGN REQUIREMENTS

4.0 MATERIALS

4.1 General. The bark (wood waste) material shall be derived from weed free bark and conform to the following requirements:

- pH: 4.0-8.5
- Particle size: 100% passing a 80 000 μm sieve and 50% passing a 28 000 μm sieve
- Organic matter: no less than 70% by dry weight basis
- Moisture content: less than 60%
- The material shall not contain any visible refuse material nor any material toxic to plant establishment or growth.

4.2 Documentation. Prior to delivery of bark mulch to the site, the Contractor shall provide the Project Engineer with certification that the bark material conforms to the above requirements. The Project Engineer may also request the Contractor to provide a sample of the compost for confirmatory testing purposes.

5.0 CONSTRUCTION METHODS

After the designated areas have been graded according to the lines and grades approved by the Project Engineer, the bark shall be spread evenly over the prepared slopes to a uniform thickness as follows:

- 50 - 75 mm on slopes $\leq 3:1$,
- 75 - 100 mm on slopes between 3:1 and 2:1,
- or as shown on the tender drawings,
- or as directed by the Project Engineer.

Bark, for erosion control, shall not be used on slopes steeper than 2:1. Bark materials shall be loose and friable and be free of dust at the time of application. No bark materials shall be stored on site within 30 m of a watercourse.

6.0 QUALITY CONTROL / QUALITY ASSURANCE

7.0 METHOD OF MEASUREMENT

Measurement for bark material shall be the area in square metres where bark material has been acceptably applied and in place, measured along the slope of the ground.

8.0 BASIS OF PAYMENT

Payment for bark materials at the contract unit price shall be full compensation for all labour, equipment and material necessary to perform the work.

Slope preparation prior to the placement of bark materials and the removal of objectionable materials will not be measured for payment, but shall be considered as incidental to the bid items under which the excavation or embankment construction of such areas was carried out.

If hydroseeding is required, payment for hydroseeding will be made as per Division 7 Section 5.

9.0 WARRANTY

1.0 DESCRIPTION

This item shall consist of supplying, installing, maintaining and dispersing (if necessary) a water permeable windrow or berm of approved compost or bark material to contain soil erosion by removing suspended soil particles from water moving through or off the construction site.

2.0 REFERENCES

- AASHTO Designation MP 9; AASHTO Standard Specification: Compost for Erosion / Sediment Control (Filter Berms)
- AASHTO Designation T 265-93 (2000) Laboratory Determination of Moisture Content of Soils
- AASHTO Designation T 267-86 (2000) Determination of Organic Content in Soils by Loss on Ignition

3.0 SUBMISSIONS AND DESIGN REQUIREMENTS

Prior to delivery of the bark or compost to the site, the Contractor shall provide the Project Engineer with certification that the bark or compost conforms to the above requirements. The Project Engineer may also request the Contractor to provide a sample of the bark or compost for confirmatory testing.

4.0 MATERIALS

4.1 Bark Filter Berm. The bark material shall consist of weed free bark/wood waste that conforms to the following requirements:

- pH: 4.0 - 8.5
- Particle size: 98% passing a 28 000 µm sieve, 90% passing a 20 000 µm sieve, and not more than 30% passing a 5 000 µm sieve. Material shall not exceed ten (10) cm in length.
- Moisture content less than 60% by wet weight basis.
- Organic matter more than 70% by dry weight basis.
- No visible refuse material nor any material toxic to plant establishment or growth.

4.2 Compost Filter Berm. Compost material must be derived from aerobic decomposition of organic materials as described in *Special Provision, Supplying and Placing Compost*. It shall meet the same physical requirements as the bark filter berm. The compost filter berm material may be used on its own or in combination with the bark filter berm material to a maximum of 50%.

5.0 CONSTRUCTION METHODS

The erosion control berm shall be placed, un-compacted in a windrow at locations shown on the plans or as directed by the Project Engineer. The berms shall follow the contour or be perpendicular to the slope. Berms shall not be used on slopes steeper than 1.5:1. The minimum dimensions of the berm shall be 60 cm wide at the top, 120 cm wide at the bottom and 60 cm in height. After initial construction, the Contractor shall inspect berms to ensure they are in functioning condition and properly located for effectiveness.

Smaller berms may be used across slopes, perpendicular to the slope, to decrease the length of the slope in order to slow runoff water. The dimension of these berms will be as per the contract drawings.

Filter berms may be removed when they are no longer required. At the discretion of the Project Engineer, the berm material may be distributed over an adjacent area for use as a soil amendment or soil cover. Berms, retained as part of the landscape, may be hydroseeded.

6.0 QUALITY CONTROL/QUALITY ASSURANCE

7.0 METHOD OF MEASUREMENT

Measurement shall be by the linear metre, acceptably applied and in place, measured from end to end along the contour of the ground.

8.0 BASIS OF PAYMENT

- Bark Filter Berm
- Compost Filter Berm
- Bark/Compost Filter Berm

Payment at the contract unit price for the above tender item(s) shall be full compensation for all labour, equipment and material necessary to complete the work.

The Contractor shall, at their own expense, repair any berms damaged as a result of improper installation, as determined by the Project Engineer.

Payment will be made as per Division 7 Section 4 for berms requiring repair if the original berms had been properly installed and approved by the Project Engineer and failure was not attributable to the Contractor.

Payment will be made as per Division 7 Section 4 for the maintenance and removal and management of sediment that is accumulated by berms as directed by the Project Engineer.

If hydroseeding is required, payment for hydroseeding will be made as per Division 7 Section 5.

9.0 WARRANTY