

## **1.0 DESCRIPTION:**

### **1.1 SCOPE**

The work shall consist of furnishing and constructing a new vegetated surface composed of an organic growing medium injected with seed and placed pneumatically. This surface must be constructed with a pneumatic blower unit complete with a supplemental granular injection system capable of installing at least 15 cubic meters per hour.

## **2.0 MATERIALS**

**2.1 GROWING MEDIUM:** The growing medium shall consist of composted materials or a blend of materials including organics that meet particle size and nutritional specifications for the particular application. The organic soil component shall abide by the minimum standards required for seed establishment.

**2.1.1** All organic components within the growing medium must be derived from well composted greenwaste organic matter and meet the Canadian Council of Ministers of the Environment's (CCME) definition for Type "A" Compost.

**2.1.2** Quality Assurance – A sample of the specified growing medium and current analysis from an approved laboratory shall be submitted to the engineer/landscape architect for approval prior to installation.

## **2.2 SEED:**

### **2.2.1 Grade Standards**

All seed, supplied either as single seed species, or as a seed mix shall comply with the provisions of the Canada Seeds Act and Regulations and the grade standards for that particular seed type.

### **2.2.2 Seed Analysis Certificate**

A legible, valid Seed Analysis Certificate from a Seed Testing Laboratory approved by the Canadian Food Inspection Agency (CFIA) for all single seed species and all seed mixtures shall be provided to the Contract Administrator prior to any seeding operations. The Seed Analysis Report shall stipulate the seed supplier's lot designation numbers. Test results from the Seed Analysis Certificate shall specify germination and purity for each seed species of the mix as well as the seed mix composition expressed as a percentage of each seed species by mass for each seed mix specified in the contract. Test results shall meet or exceed the value for the various seed mixes as specified by the consultant.

### **2.2.3 Seed Packaging, Labeling and Storage**

All seed and seed mixes shall be in the original sealed package with the original legible label securely attached. Labeling shall conform to the requirements of the Canada Seeds Act and Regulations. Each package shall be labeled to show:

**2.2.3.1** The name and address of the seed supplier.

**2.2.3.2** The seed species, or the name of the seed mix and the various individual seed species that comprise the seed mix and the percentage by mass.

**2.2.3.3** The grade of the seed or seed mix.

**2.2.3.4** The supplier's lot designation number, corresponding to the Seed Analysis Certificate.

**2.2.3.5** Mass in kilograms.

**2.2.3.6** All seed shall be stored in cool, dry location until use.

#### **2.2.4 Permanent Seed Mixes**

Permanent seed mixes as per consultant.

#### **2.2.5 Annual Nurse Crop Seed**

Nurse crop seed shall be a cereal grain such as Annual Ryegrass, Fall Rye Grain or Winter Wheat Grain unless otherwise approved by the Contract Administrator.

### **2.3 Fertilizer**

Fertilizer shall comply with the provisions of the Canada Fertilizers Act and Fertilizer Regulations. Fertilizer shall be supplied in original bags bearing the manufacturer's original label indicating mass and analysis. All fertilizer shall be in granular form, dry, free flowing and free from lumps, and applied at rates specified by the Consultant.

### **3.0 SURFACE PREPARATION**

Areas must be set to grade and all large clods, rocks, stumps, roots larger than 50mm in diameter must be removed from the site to be seeded. This soil preparation step may be eliminated where approved by the Project Engineer or Landscape Architect/Designer. Where practical, the soil surface should be tracked or roughed before Terraseeding™.

### **4.0 APPLICATION**

#### **4.1 Operational Requirements:**

**4.1.1** The composted topsoil and seeding application and/or re-application shall not be carried out under adverse field conditions such as high wind, frozen soil or soil covered with snow, ice or in areas of standing water or a concentrated flow of water unless directed by the Engineer / Project Manager.

**4.1.2** The Contractor shall maintain the site and control erosion until conditions permit application or reapplication of seed and composted topsoil.

**4.1.3** The surface to be seeded shall be prepared not more than 7 calendar days before the seeding operation.

**4.1.4** No seed or composted topsoil application shall come in contact with the foliage of any trees, shrubs, or other vegetation.

**4.1.5** No seed or composted topsoil application shall come in contact with water bodies.

## **4.2 Pneumatic Blower**

The pneumatic blower shall be a custom manufactured, fully integrated, blower truck unit. The blower shall be equipped with a computer-calibrated seed injection system and shall be capable of uniformly and simultaneously applying growing medium and seed at a rate greater than 0.25 cubic meters of material per minute. The blower truck shall also be equipped with an application hose capable of extending 90 meters from the blower truck unit.

## **4.3 Blower Calibration**

**4.3.1** Prior to the application of the growing medium and seed, the Contractor shall ensure that the pneumatic blower has been properly calibrated to provide the specified amounts of seed and that the blower can adequately uniformly apply growing medium and seed at a rate greater than 0.25 cubic meters of material per minute.

**4.3.2** Once the blower has been calibrated, the Contractor shall apply composted topsoil and seeding uniformly at specified depths to all areas identified for cover in the contract drawings or as directed by the Contract Administrator.

**4.3.3** Growing medium and seed shall overlap the adjoining ground cover by 300 mm unless specified.

**4.4.** The material shall be placed as shown on the plans or as directed by the site Engineer/ Project Manager.

**4.5.** The Engineer/Landscape Architect shall specify seed.

**4.6.** Unless otherwise allowed by Engineer, seeding shall be performed within the local region's seeding deadlines.

## **5.0 APPLICATION RATES**

### **5.1 Growing Medium**

**5.1.1** Growing Medium application depth may be modified based on specific site (e.g., soil characteristics, existing vegetation) and climatic conditions, as well as particular project related requirements.

**5.1.2** Application depth of Growing Medium shall vary as per site Engineer's / Architects instructions between 12.5mm and 900mm.

### **5.2. Seed**

**5.2.1** Growing Medium and seed shall be uniformly and simultaneously applied directly to the soil surface with a pneumatic blower.

**5.2.2** At a minimum, growing medium and soil shall be applied to a depth of 12.5mm.

**5.2.3** In cases where application of growing medium exceeds 50mm, only the upper 50mm shall be TerraSeeded™ unless directed by the site Engineer or Project Manager.

## **6.0 CLEAN-UP**

**6.1** At the completion of the seeding and cover operation, materials applied to areas or objects other than those designated to grow grass shall be removed.

**6.2** Clean water shall be used to immediately wash seed or cover materials that have been applied to the foliage of trees, shrubs or other susceptible plant growth.

## **7.0 MAINTENANCE:**

**7.1.** The client shall maintain the surface in a functional condition for a period of one year. The client shall make periodic inspections of the composted surface for effectiveness and shall immediately correct all deficiencies. Where deficiencies exist, additional material shall be installed immediately as required.

### **7.2 Irrigation**

Water shall be free of any contaminants or impurities that would adversely affect the germination and growth of vegetation.

## **8.0 MEASUREMENT FOR PAYMENT**

The method for payment for Terraseeding™ shall be agreed on prior to the commencement of the work. The method of measurement will be by;

### **8.1 Area:**

Seeding and cover measurement shall be in square meters (m<sup>2</sup>) or square feet (ft<sup>2</sup>) at a pre-defined average depth (inches or mm) following the contours of the ground including required overlap into existing vegetation where applicable.

### **8.2 Volume:**

Seeding and cover measurement shall be in cubic yards (yd<sup>3</sup>) or cubic meters (m<sup>3</sup>) at a pre-defined average depth (inches or mm) following the contours of the ground including required overlap into existing vegetation where applicable. As an alternate, square meters (m<sup>2</sup>) may be used at a specified average depth.

Terraseeding Services provided by: Denbow Transport Ltd

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