ITEM 11614.01 M – TREE ROOT ZONE TREATMENT (VERTICAL MULCHING/AERATION)

DESCRIPTION

This work shall consist of treating the root zone of trees through aeration and/or fertilization of the roots with micorrhizal fungi or other amendments.

MATERIALS

Appropriate drilling tools shall be used for drilling of holes for root zone restoration. Drilling equipment shall be hand held or light weight devices (no heavy machinery) so as to avoid further impact to tree roots through compaction. All equipment shall be approved by the Engineer-in-Charge (EIC) in consultation with the Regional Landscape Architect (RLA) prior to any work.

Mycorrhizal fungi mixture: This mixture shall be a dry granular product specifically designed for vertical mulching applications supplied in 16.36-Kg resealable plastic pails with 85g scoop included. The pails shall not be stored for more than eighteen months following packaging and shall not be exposed to moisture, direct sunlight, or temperatures higher than 32 degrees Celsius (90 degrees Fahrenheit) or lower than 0 degrees Celsius (32 degrees Fahrenheit) prior to incorporation into the soil. Each 85g (one level scoop) shall contain the following:

1.A minimum of 1000 live spores of vesicular-arbuscular endomicorrhizal fungi including Entrephospora columbiana, Glomus etunicatum, Glomus clarum and Glomus sp.
2. A minimum of 60 million live spores of the ectomycorrhizal fungus, Pisolithus tinctorius.
3.Acrylamide copolymer water absorbent gel.
4.Water soluble dried Yucca schidigera extract.
5.Water soluble dried Ascophyllum nodosum (sea kelp) extract.
6.Water soluble dried leonardite humate (humic acid) extracts.

DISAPPROVED
BY EI 12-001

Coarse Sand: Sand shall consist of clean, hard, durable, uncoated stone particles, free from lumps of clay and all deleterious substances. Sand shall be so graded that when dry, one-hundred percent (100%) shall pass through a 6.3 mm square opening sieve; not more than thirty-five percent (35%) by weight shall pass a No.50 sieve and none shall pass a No.100 sieve. Electrical Conductivity shall be less than 2000 mhos/cm. A higher level would indicate excessive salt content. The testing method must be the saturated paste method.

Mulch. Mulch shall conform to Subsection 713-05 Wood Chips, unless otherwise specified in the contract documents.

CONSTRUCTION DETAILS

All Tree root zone treatment shall be done by or under the direction of a certified arborist

ITEM 11614.01 M – TREE ROOT ZONE TREATMENT (VERTICAL MULCHING/AERATION)

(International Society of Arboriculture or equivalent as approved by the EIC in consultation with RLA).

The "root zone" of trees is defined as the area beneath the furthers extension of all the tree's branches (the dripline). The purpose of treatment is to help the roots of trees recover from injury due to soil compaction or other disturbance.

A. General. Coordinate all work with the Regional Landscape Architect to verify locations and confirm extent of work. Locations of work shall include areas as shown on the contract documents or as directed by the EIC in consultation with the Regional Landscape Architect, within the dripline or wider root zone of existing trees to be preserved, typically where construction activity in the root zone is unavoidable.

B. Rates. Application rates where Mycorrhizal Fungi treatment is called for, unless otherwise specified, shall be:

Mycorrhizal Fungi - 85 g/hole

C. Layout. Layout of holes or drill locations, unless otherwise specified or directed, shall be within a zone beginning 1 meter from the trunk of the specified tree and extending to its dripline on an approximately 600mm x 600mm grid. Dimensions of holes or drill size, unless otherwise specified, shall be 50mm in diameter and 300mm to 450mm deep. Efforts should be made to minimize drilling through large tree roots (especially near the trunk). When woody roots are encountered, move the drill hole over slightly to avoid root damage. Work must be done by hand using only light equipment. Under no circumstances may heavy equipment (i.e. payloaders) be used.

DISAPPROVED BY EI 12-001

D. Application. Vertical Mulching shall be accomplished using one of the following methods. If vertical mulching is called for on the drawings but no method is specified, use Method No. 1:

Method No. 1. (Aeration). Holes shall be drilled and existing soil removed. The hole shall be completely filled to original grade with Coarse Sand.

Method No. 2. (Mycorrhizal treatment) The specified amount of Mycorrhizal Fungi Mixture shall be placed on the ground where the hole is to be drilled, forming a small pile. Then the hole is drilled directly through the pile, the intent being to drill the material into the soil. Combine the mixture and existing soil by drilling up and down 2 or 3 times to thoroughly incorporate the mycorrhizal fungi mixture into the existing soil at each location. As all existing soil remains, there should be no remaining space in any holes. If for any reason space remains, such space shall be brought to the original finish grade with coarse sand.

Method No. 3. (Combination): Holes shall be drilled half way to the specified depth and the existing soil removed. Mycorrhizal Fungi Mixture shall then be inserted into the hole, and the remaining half of the hole drilled through the top of the added material. Combine the mixture with the existing soil by drilling up and down 2 or 3 times, and fill any remaining space to the original finish grade with coarse sand.

Method No. 4. Any other combination of Aeration and Mycorrhizal treatment and/or addition of other amendments as specified in the contract documents.

E. Mulch. Unless otherwise specified or directed by the EIC in consultation with the RLA, all areas which have received vertical mulching will be covered with a continuous 75mm depth of wood chip mulch.

METHOD OF MEASUREMENT

The work will be measured for payment as the number of square meters of total area (measured to the nearest square meter) of all areas of Tree Root Zone treated.

BASIS OF PAYMENT

DISAPPROVED BY EI 12-001

The unit price bid for "TREE ROOT ZONE TREATMENT (VERTICAL MULCHING/ AERATION)" shall include the cost of all labor, materials, and equipment necessary to satisfactorily perform the work.