

## **PART 1 - GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 35 29 - Health and Safety Requirements.
- .3 Section 01 74 11 - Cleaning.
- .4 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .5 Section 31 23 16 - Rock Removal.

### **1.2 REFERENCES**

- .1 U.S. Environmental Protection Agency (EPA)/Office of Water
  - .1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

### **1.3 DEFINITIONS**

- .1 Clearing consists of cutting off trees and brush vegetative growth to not more than specified height above ground and disposing of felled trees, previously uprooted trees and stumps, and surface debris.
- .2 Clearing isolated trees consists of cutting off to not more than specified height above ground of designated trees, and disposing of felled trees and debris.
- .3 Underbrush clearing consists of removal from treed areas of undergrowth, deadwood, and trees smaller than 50 mm trunk diameter and disposing of fallen timber and surface debris.
- .4 Grubbing consists of excavation and disposal of stumps and roots to not less than specified depth below existing ground surface.

### **1.4 SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Samples:
    - .1 Submit 3 samples of each material listed below for approval prior to delivery of materials to project site.
    - .2 Tree wound paint: one liter can with manufacturer's label.
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- .3 Submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
- .4 Submit manufacturer's installation instructions to Departmental Representative.

## **1.5 QUALITY ASSURANCE**

- .1 Do construction occupational health and safety in accordance with Section 01 35 29 - Health and Safety Requirements.

## **1.6 STORAGE AND PROTECTION**

- .1 Prevent damage to fencing, trees, landscaping, natural features, bench marks, existing buildings, existing pavement, utility lines, site appurtenances, water courses and root systems of trees which are to remain.
  - .1 Repair damaged items to approval of Departmental Representative.
  - .2 Replace trees designated to remain, if damaged, as directed by Departmental Representative.

## **1.7 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Consider felled timber from which saw logs, pulpwood, posts, poles, ties, or fuel wood can be produced as saleable timber.
  - .1 Trim limbs and tops, and saw into saleable lengths.
  - .2 Stockpile adjacent to site.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- .1 Bituminous based paint of standard manufacture specially formulated for tree wounds.
  - .2 Soil material for fill:
    - .1 Excavated soil material: free of debris, roots, wood, scrap material, vegetable matter, refuse, soft unsound particles, deleterious, or objectionable materials.
    - .2 Remove and store soil material for reuse if sufficient space is available as directed by Departmental Representative.
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### **PART 3 - EXECUTION**

#### **3.1 PREPARATION**

- .1 Inspect site and verify with Departmental Representative, items designated to remain.
- .2 Locate and protect utility lines: preserve in operating condition active utilities traversing site.
  - .1 Notify Departmental Representative immediately of damage to or when unknown existing utility lines are encountered.
  - .2 When utility lines which are to be removed are encountered within area of operations, notify Departmental Representative in ample time to minimize interruption of service.
- .3 Notify utility authorities before starting clearing and grubbing.
- .4 Keep roads and walks free of dirt and debris.

#### **3.2 APPLICATION**

- .1 Manufacturer's instructions: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

#### **3.3 CLEARING**

- .1 Clearing includes felling, trimming, and cutting of trees into sections and satisfactory disposal of trees and other vegetation designated for removal, including downed timber, snags, brush, and rubbish occurring within cleared areas.
  - .2 Clear as indicated on drawings, by cutting at height of not more than 300 mm above ground. In areas to be subsequently grubbed, height of stumps left from clearing operations to be not more than 1000 mm above ground surface.
  - .3 Cut off branches and cut down trees overhanging area cleared as directed by Departmental Representative.
  - .4 Cut off unsound branches on trees designated to remain as directed by Departmental Representative.
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### **3.4 ISOLATED TREES**

- .1 Cut off isolated trees as directed by Departmental Representative at height of not more than 300 mm above ground surface.
- .2 Grub out isolated tree stumps.
- .3 Prune individual trees as indicated.
- .4 Trim trees designated to be left standing within cleared areas of dead branches 4 cm or more in diameter; and trim branches to heights as indicated.
- .5 Cut limbs and branches to be trimmed close to bole of tree or main branches.
- .6 Paint cuts more than 3 cm in diameter with approved tree wound paint.

### **3.5 UNDERBRUSH CLEARING**

- .1 Clear underbrush from areas as indicated at ground level.

### **3.6 GRUBBING**

- .1 Remove and dispose of roots larger than 7.5 cm in diameter, matted roots, and designated stumps from indicated grubbing areas.
- .2 Grub out stumps and roots to not less than 200 mm below ground surface.
- .3 Grub out visible rock fragments and boulders in accordance with Section 31 23 16 - Rock Removal.
- .4 Fill depressions made by grubbing with suitable material and to make new surface conform with existing adjacent surface of ground.

### **3.7 REMOVAL AND DISPOSAL**

- .1 Remove cleared and grubbed materials off site at location approved by Departmental Representative.
  - .2 Cut timber greater than 125 mm diameter to lengths not exceeding 2.5 m and stockpile as indicated. Stockpiled timber becomes property of Contractor.
  - .3 Chip or mulch and stockpile spread cleared and grubbed vegetative material on site as directed by Departmental Representative.
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- .4 Remove diseased trees identified by Departmental Representative and dispose of this material to approval of Departmental Representative.

### **3.8 FINISHED SURFACE**

- .1 Leave ground surface in condition suitable for immediate grading operations and stripping of topsoil to approval of Departmental Representative.

### **3.9 CLEANING**

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.