

Section 01563**TREE AND PLANT PROTECTION****1.0 GENERAL****1.01 SECTION INCLUDES**

- A Tree and plant protection.
- B References to Technical Specifications: None

1.02 MEASUREMENT AND PAYMENT

- A Unless indicated as a Bid Item, no separate payment will be made for Work performed under this Section. Include cost in Bid Items for which this Work is a component.

1.03 PROJECT CONDITIONS

- A Preserve and protect existing trees and plants to remain from foliage, branch, trunk, or root damage that could result from construction operations.
- B Prevent following types of damage:
 1. Compaction of root zone by foot or vehicular traffic, or material storage.
 2. Trunk damage from equipment operations, material storage, or from nailing or bolting.
 3. Trunk and branch damage caused by ropes or guy wires or machine impacts.
 4. Root poisoning from spilled solvents, gasoline, paint, and other noxious materials.
 5. Branch damage due to improper pruning or trimming.
 6. Damage from lack of water due to:
 - a. Cutting or altering natural water migration patterns near root zones.
 - b. Failure to provide adequate watering.
 7. Damage from alteration of soil pH factor caused by depositing lime, concrete, plaster, or other base materials near roots.
 8. Cutting feeder of roots or roots larger than 1-1/2 inches in diameter.

1.04 DAMAGE ASSESSMENT

- A When trees, other than those designated for removal, are destroyed or badly damaged as a result of construction operations, remove and replace with same size, species, and variety up to and including 8 inches in trunk diameter. Trees larger than 8 inches in diameter shall be replaced with an 8-inch diameter tree of the same species and variety and total contract amount will be reduced by an amount determined from the following International Shade Tree Conference formula: $0.7854 \times D^2 \times \10.00 where D is diameter in inches of tree or shrub trunk measured 12 inches above grade.
- B All necessary tree replacements shall be as approved by Engineer/Urban Forester.

2.0 PRODUCTS

2.01 MATERIALS

- A Asphalt paint: Emulsified asphalt or other adhesive, elastic, antiseptic coating formulated for horticultural use on cut or injured plant tissue, free from kerosene and coal creosote.
- B Burlap: Suitable for use as tree wrapping.
- C Fertilizer: Liquid containing 20 percent nitrogen, 10 percent phosphorus, and 5 percent potash.
- D. Temporary Barrier Fence: Plastic, bright orange color for visibility, 48 inches in height, 8.5 pounds weight minimum.

3.0 EXECUTION

3.01 PROTECTION AND MAINTENANCE OF EXISTING TREES AND SHRUBS

- A Except for trees and shrubs shown on Plans to be removed, all trees and shrubs within the Project Site area are to remain and be protected from damage.
- B For designated trees to be removed, perform the following:
 - 1. Stake right-of-way limits and identify any tree of diameter greater than 4 inches which is to be removed. Mark trees prior to felling with an X in orange paint, clearly visible, on the trunk, and at eye level.
 - 2. After marking trees give a minimum of 48-hours notice in writing to the Engineer of intent to begin felling operations.
 - 3. Trees whose trunks are only partially in the right-of-way shall be protected and preserved as described below.
- C For trees or shrubs to remain, perform the following:
 - 1. Trim trees and shrubs only as necessary.
 - a. Trees and shrubs requiring pruning for construction should also be pruned for balance as well as to maintain proper form and branching habit.
 - b. Cut limbs at branch collar. No stubs should remain on trees. Branch cuts should not gouge outer layer of tree structure or trunk.
 - 2. Use extreme care to prevent excessive damage to root systems.
 - a. Roots in construction areas will be cut smoothly with a trencher before excavation begins. Do not allow ripping of roots with a backhoe or other equipment.
 - b. Temporarily cover exposed roots with wet burlap to prevent roots from drying out.
 - c. Cover exposed roots with soil as soon as possible.
 - 3. Prevent damage or compaction of root zone (area inside dripline) by construction activities.
 - a. Do not allow scarring of trunks or limbs by equipment or other means.

- b. Do not store construction materials, vehicles, or excavated material inside dripline of trees.
- c. Do not pour liquid materials inside dripline.
4. Water and fertilize trees and shrubs that will remain to maintain their health during construction period.
 - a. Supplemental watering of landscaping during construction should be done once a week in months receiving average rainfall and twice a week in months receiving below average rainfall.
 - b. This watering shall consist of saturating soils at least 6 to 8 inches beneath surface.
5. Water areas currently being served by private sprinkler systems while systems are temporarily taken out of service to maintain health of existing landscapes.
6. At option of the Contractor and with the Engineer's permission, trees and shrubs to remain may be temporarily transplanted and returned to original positions under supervision of professional horticulturist.

3.02 PROTECTIVE CONTROLS

- A Protection of trees or shrubs in open area:
 1. Install steel drive-in fence posts in protective circle, approximately 8 feet on center, at the dripline of the leaf canopy of trees or 2 ft. around shrubs.
 2. Drive steel drive-in fence posts 3 feet minimum into ground, leaving 5 feet minimum above ground.
 3. For trees or shrubs in paved areas, use moveable posts constructed from concrete-filled steel pipe 2-1/2 inches minimum in diameter mounted in rubber auto tires filled with concrete.
 4. Mount plastic temporary barrier safety fence on posts.
- B Timber-wrap protection for trees in close proximity of moving or mechanical equipment and construction work:
 1. Wrap trunk with layer of burlap.
 2. Install 2 x 4's or 2 x 6's (5-foot to 6-foot lengths) vertically, spaced 3 inches to 5 inches apart around circumference of tree trunk.
 3. Tie in place with 12 to 9 gage steel wire.

3.03 MAINTENANCE OF NEWLY PLANTED TREES

- A Water newly planted trees adequately to maintain and support healthy plants at the time of planting.
- B The Contractor guarantees that trees planted for this Work shall remain alive and healthy at least until the end of a one-year warranty period.
 1. Within four weeks of notice from Owner, Contractor shall replace, at his expense, any dead trees or any trees that in the opinion of Owner, have become unhealthy or unsightly or have lost their natural shape as a result of additional growth, improper pruning or maintenance, or weather conditions.

2. When tree must be replaced, the guarantee period for that tree shall begin on date of replacement of tree, subject to the Owner's inspection, for no less than one year.
3. Straighten leaning trees and bear entire cost.
4. Dispose of trees rejected at any time by Engineer at Contractor's expense.

END OF SECTION