

GENERAL

The work under this item shall conform to the relevant provisions of Section 771 of the MassDOT Standard Specifications and shall be for furnishing and installing temporary tree trunk protection and for minor limb pruning or removal of lower tree limbs to prevent injury to the tree from construction equipment and activities.

Trunk armoring is for instances where construction activity (the use of heavy equipment) comes close enough to potentially damage the tree trunk or limbs. It is to be used where shown on the Plans and as required by the Engineer.

REFERENCES

If requested, the Contractor shall provide to the Engineer one copy of the latest edition of the American National Standards Institute (ANSI) A300 Standard Practices for Tree, Shrub, and Other Woody Plant Maintenance: Part 1-Pruning and Part 5-Construction Management Standard. Provision of reference shall be incidental to this item.

MATERIALS

Trunk armoring shall be such that it prevents damage to the trunk from construction equipment. Selected material shall be such that installation and removal will not damage the trunk.

Acceptable materials include 2x4 wood cladding with wire or metal strapping, or, for instances when duration of construction activities is less than three months, corrugated plastic pipe mounted with duct tape. Height of cladding shall be from base of tree (including root flare) to the bottom of the first branch, eight feet above the ground, or as required by the Engineer. Material and methods shall be approved by the Engineer.

Other materials or methods may be acceptable if approved by the Engineer or by an Arborist (if included in the Contract).

METHODS OF WORK

Prior to construction activities, the Engineer, the Contractor, the City's Arborist / Tree Warden, and the Arborist (if item is included in the Contract), shall review trees noted on the Plans to be protected. Final decision as to trees armored and/or pruned shall be per the City's Arborist.

Care shall be taken to avoid damage to the bark during installation and removal of armoring. Trunk armoring shall be replaced and maintained such that it is effective for as long as required and shall be removed immediately upon completion of work activities adjacent to trees.

Pruning of limbs shall conform to the techniques and standards of the most recent ANSI A300 standards.

## DAMAGES & PENALTIES

If trees designated for protection under this item are damaged, including root damage from unapproved trespassing onto the root zone, the Contractor shall, at his own expense obtain an Arborist. The Arborist shall be approved by the Engineer.

If, based on the recommendations of the Arborist, the Engineer determines that damages can be remedied by corrective measures, such as repairing trunk or limb injury, soil compaction remediation, pruning, and/or watering, the damage will be repaired as soon as possible within the appropriate season for such work and according to industry standards.

If the Engineer determines that damages are irreparable, the Contractor shall pay for the damages in the amount of \$500.00 per diameter inch at breast height (DBH) per tree.

Additionally, if the Engineer determines that the damages are such that the tree is sufficiently compromised as to pose a future safety hazard, the tree shall be removed. Tree removal will include cleanup of all wood parts, grinding of the stump to a depth sufficient to plant a replacement tree or plant, removal of all chips from the stump site, and filling the resulting hole with topsoil.

## METHOD OF MEASUREMENT

Tree Protection – Armoring and Pruning will be measured for payment per each tree armored and pruned, complete in place.

## BASIS OF PAYMENT

Tree Protection – Armoring and Pruning will be paid at the Contract unit price per each, which price shall include full compensation for all labor, equipment, materials, and incidental costs required to complete the work. No separate payment will be made for the subsequent removal and satisfactory disposal of the protective materials upon completion of the Contract, but all costs in connection therewith shall be included in the Contract unit price bid.

In the event of tree damage, cost of Arborist services, of remediation measures, and/or tree removal will be borne by the Contractor.

Payment of 40 percent of value shall be paid upon installation of trunk armoring and completion of pruning work, if required. The remaining 60 percent shall be paid at the end of construction operations that would damage the tree and after protection materials have been removed and properly disposed of by the Contractor. In the event of repairable damages, payment shall be made after the completion of remediation measures.

In the event of irreparable damage due to lack of proper protective measures being take there will be no compensation in addition to the \$500.00 per diameter inch penalty.