

ITEM 501

TREE PROTECTION AND TRIMMING

501.1 Description. This item specifies the requirements for the protection and trimming of trees indicated to be preserved. Trees located a clear distance of 3-feet from proposed face of curb are to be preserved unless field conditions determine otherwise.

501.2 Quality Assurance. All tree removing, trimming and work within the tree's drip line shall be performed by or under the supervision of an arborist certified by the International Society of Arboriculture (ISA).

The arborist shall indicate the trees that need to be removed, but no removal will be done without prior approval of the Engineer.

Reference standards applicable to this section are:

- A. ASTM Designation D2665, "Specification for Poly Vinyl Chloride (PVC), Plastic Drain, Waste and Vent Pipe and Fittings".
- B. AWWA Standard U1, "Use Category System: User Specification or Treated Wood"
- C. ANSI A300 (Part 1), "Tree, Shrub and Other Woody Plant Maintenance – Standard Practices"

501.3 Job Conditions. The contractor shall protect each tree designated to be preserved with a tree protection fence, installed along the outside edge of the tree's canopy. The fencing shall be continuous between posts, shall be pulled taut prior to securing to posts, and shall be firmly attached to the posts with a minimum of 4 wire ties.

All tree protection fencing shall be installed prior to site work or construction activity. The fence shall be placed in a continuous alignment as shown on the tree protection plan or as approved by the Engineer. Tree protection fencing shall be removed by the contractor unless otherwise directed by the Engineer, at no additional costs, upon completion of all construction activity in each work zone area. Tree protection fencing materials used in the first two work zone areas shall be removed and utilized in subsequent work zone areas. Materials and labor shall be paid for each linear foot of fencing installed in first two work areas. All fencing installed in subsequent work zone areas shall be paid for labor only.

Contractor shall not allow any vehicular traffic, parking of vehicles or stockpiling of excavated material or construction materials within 3-feet of the drip line of trees indicated to be preserved.

Construction equipment may operate within 3-feet of the drip line of a tree when necessary for the performance of indicated work; such operations shall be conducted with special care to avoid damaging the tree.

Water trees indicated to be preserved, as required to maintain their healthy growth during the course of construction operations (per Arborist recommendation).

501.4 Materials. Tree pruning compound shall be waterproof, antiseptic, elastic, and free of kerosene, coal tar, creosote, and other substances harmful to trees.

Topsoil shall be material free of clay, rock or gravel larger than 2-inches in any dimension, debris, waste, vegetation, and other deleterious matter.

Drainage fill shall be selected stone or gravel, graded to pass a 3-inch sieve and retained on a 1-inch sieve.

Physical barriers, if required, shall be constructed from the following material:

- A. Wood Components: Number 2 Pine, pressure treated to prevent decay for one year in accordance with the requirements AWWA Standard U1, suitable for Use Category 4B.
- B. Fence Material: Orange fence shall be made of high density polyethylene material and shall be minimum 0.6 mm thick weighing minimum of 14 pounds per 100-foot roll and is 4 feet high. Posts shall be made of fiberglass or steel and shall be 6 feet long (minimum).
- C. Banding: Stainless steel or varnish coated carbon steel, 3/4-inch wide x 26 gauge.
- D. PVC pipe shall conform to ASTM Designation D2665 and be 4inch o.d., nominal.

501.5 Execution. The Contractor shall protect tree root systems from damage due to noxious materials in solution caused by run-off or spillage during mixing and placement of construction materials, or drainage from stored materials.

The Contractor and/or any of the Contractor's workers shall not park vehicles under trees, nor perform vehicle maintenance under trees.

If required, remove branches from trees indicated to be preserved to clear for new construction. All cuts should be made sufficiently close to the parent limb or trunk without cutting into the branch collar or leaving a protruding stub, so that closure can readily start under normal conditions. All lateral cuts shall be made back to a lateral that is at least 1/3 the diameter of the parent limb. Clean cuts shall be made at all times. Where directed by the Engineer, extend the pruning operation to restore the natural shape of the entire tree.

Cut branches and roots with sharp pruning instruments. Do not break or chop branches and roots. Paint cuts over 1/2-inch in size with tree pruning compound. Apply black latex paint to all fresh wounds on Oak (Quercus) species immediately after each cut is made.

501.6 Pruning. Pruning shall be completed by ISA (International Society of Arboriculture) certified arborist who has received training in proper pruning techniques. Prior to construction, all deciduous trees indicated to be preserved shall be pruned of new or recent growth to maintain the basic branching form of the trees. Extent of pruning shall be based upon the proximity of pavement to the trunk and the size of tree blockouts and the requirements for construction adjacent to the tree.

Trees having branches which extend to the ground at their outermost limit shall have such branches pruned to a height equal to the height of all vehicles requiring access below or around such trees. Provide minimum of 14 feet and maximum of 18 feet of vertical clearance over proposed street construction. The Contractor shall notify property owner in writing 48 hours prior to trimming or pruning any trees on private property for privately owned trees extended into City right-of-way.

Pruning shall be limited as much as possible to young branches. Care shall be taken to maintain older branches which provide the basic form of the tree.

501.7 Excavation Around Trees. Excavate within the drip line of trees only where indicated. Where trenching for utilities is required within drip line, tunnel under or around roots by hand digging. Do not cut main lateral roots or tap roots. Smaller roots which interfere with the installation of new work may be cut.

Where excavating for new construction is required within the drip line of trees, hand excavate to minimize damage to the root system. Provide sheeting at excavations if required. Use narrow spading forks and comb soil to expose roots.

Relocate roots in backfill areas wherever possible. If large main lateral roots are encountered, expose beyond excavating limits as required to bend and relocate without breaking. If roots are immediately adjacent to location of new construction and relocation is not practical, cut roots approximately 3-inches back from new construction.

Do not allow exposed roots to dry before permanent backfill is placed. Provide temporary earth cover, or pack with peat moss and wrap with burlap. Water and maintain exposed roots in moist condition and temporarily support and protect from damage until permanently relocated and covered with earth.

Prune branches to balance loss to root system caused by damage or cutting, per arborist recommendations.

501.8 Grading and Filling Around Trees. Maintain the existing grade within the drip line of trees, unless otherwise indicated.

Where the existing grade is above the new finish grade around trees, carefully hand excavate within the drip line to new finish grade. Cut roots exposed by

excavation and provide permanent protection as recommended by the tree surgeon.

Where the existing grade is 3-inches or less below new finish grade, use a topsoil fill material. Place the topsoil in a single layer and do not compact. Hand grade to the required elevation.

Where existing grade is more than 6-inches below new finish grade, provide 1-inch, schedule 40 PVC pipe, 6-feet on centers around tree perimeter, at drip line for aeration of the root system.

501.9 Repair of Trees. Remove trees damaged by construction operations as soon as possible to prevent progressive deterioration. Repair work shall be subject to the approval of the Engineer.

Remove and replace dead or damaged trees which are determined by the tree surgeon to be incapable of restoration to normal growth status.

501.10 Submittal Requirement. The contractor shall submit the qualifications of ISA certified arborist for Engineer's approval.

501.11 Measurement and Payment. Measurement and payment for tree protection and trimming shall be by the lump sum or by each in accordance with the bid proposal.

Removal of trees shall be paid for as provided in the bid proposal in accordance with Item 102, "Clearing and Grubbing."

Tree protection with barrier (orange fence) shall be measured and paid per each or per linear feet in accordance with bid proposal.

END OF ITEM 501