

SECTION 21
TREE TRIMMING AND REMOVAL

21-1 GENERAL - All work under this contract shall be performed in accordance with the Contract Special Provisions and as specified herein.

- 1) When the Engineer determines that the specified work has impacts on an adjacent property, Contractor shall notify the affected resident(s) and property owner(s) in writing at least 48 hours prior to commencing work.
- 2) Unless arrangements are made otherwise with the affected resident(s) and property owner(s), access to driveways shall be maintained.
- 3) Contractor shall furnish water as required for the job at no cost to the City, except as provided in the contract items of work. Use of water from a private property shall be only upon written consent of the property owner.
- 4) The Contractor shall furnish, at all times, a certified arborist to supervise the work. The Contractor shall submit the arborist's resume to the Engineer at least 48 hours in advance of work.
- 5) Trees to be removed shall not be "felled". The tree shall be removed by cutting in sections and lowering by rope.
- 6) Tree stumps shall be removed by grinding to a depth of 18" below finish grade or as necessary to clear other improvements. Climbing spurs will be used only with the approval of the Engineer.

Quantities of work are shown for estimating purposes only. The City reserves the right to increase or decrease any quantity or to eliminate any item of work. No adjustment will be made in unit prices for any such increase, decrease, or deletion regardless of the percentage of such adjustment. Final payment will be made on the basis of contract unit prices for work actually accomplished.

21-2 ARBORICULTURAL TREE PRUNING - Trees shall be trimmed to accomplish the following: to select and develop permanent scaffold branches that are smaller in diameter than the trunk or branch to which they are attached, which have vertical spacing from 18 to 48 inches and radial orientation so as not to overlay one another; to eliminate narrow V shaped branch forks that lack strength; to reduce toppling and wind damage by thinning out crowns; to maintain growth within space limitation; to maintain a natural appearance; to balance crown with roots; all pruning cuts should be made to lateral branches or flush with the trunk. Under no circumstances should "stubbing" be performed.

The Contractor shall perform the following services in a professional workman-like manner consistent with all applicable laws and regulations.

- 1) Follow the shape suggested by the natural growth habits of each tree species.
- 2) Per WC/ISA standards, no "topping" will be allowed.
- 3) Cut to laterals to preserve the natural form of the tree, leaving the head open enough for the branching system to show and permit dead material to be easily cleaned out and light to show through the head. Tree foliage shall not be reduced by more than 30%.
- 4) All limbs one inch in diameter or over shall be undercut to avoid splitting. Where there is a chance of the bark tearing at the crotch, remove large limbs with the crotch.
- 5) Final cuts shall be made just beyond the growth collar.
- 6) All water sprouts shall be removed except as needed to prevent sun scalding.
- 7) All deadwood within the outer 2/3^{ds} of the tree canopy over 3/8" by 12-inches in length shall be removed.
- 8) **Thinning** of trees shall be as recommended by the arborist and approved by the Engineer and as follows:
 - a. Thinning shall be uniform through out the tree.
 - b. Thinning shall include the ends of limbs as well as the interior.
 - c. The pruning shall not leave a "stripped" look.
 - d. Thinning should not remove more than 25% to 30% of the foliage.
 - e. Thinning of trees in need of "light reduction" shall be by the "drop crotch" method. Drop crotching shall be to the strong lateral branch (i.e., not less than 1/2 the size of the leader being removed). The lateral, or new dominant leader, shall be reduced to prevent rapid elongation or future breakage.
- 9) All deadwood within the inner 1/3rd of the tree canopy over 3/8" by 4-inches in length shall be removed
- 10) Trim to clear electric lines by a minimum of two (2) feet, remove dead wood, hazardous branches, weak, diseased, insect infested, broken, low or crossing limbs and all suckers, shoots and ivy. Branches with an extremely narrow angle of attachment shall be removed. Any structural weakness, decayed trunk, or branches shall be reported to the Engineer.

- 11) The Contractor shall provide for proper vehicle clearance at curb, both in height of lower branches and extension of branches into the street. Height clearance at the curb shall be fourteen (14) feet from street level, unless otherwise approved by the Engineer.
- 12) The Contractor shall allow adequate clearance for pedestrians to walk under the tree without concern for personal injury. Final head clearance shall be nine-(9) feet (minimum), unless otherwise approved by the Engineer, as to balance pruning at the curb as much as possible.
- 13) On trees known to be diseased, pruning tools as well as cut surfaces shall be disinfected with a ten percent (10%) chlorine bleach solution or sterilant after each cut and between trees where there is danger of transmitting the disease on tools.
- 14) Pruning with hand pruners is permitted. Small limbs, including suckers and water spouts, shall be cut close to the trunk or branch from which they arise.
- 15) Trees with dense foliage surrounding streetlights shall be opened to allow light to penetrate through the head. A certified and qualified line clearance tree trimmer shall do pruning around high voltage transmission lines.
- 16) Where pruning paint is needed, a lightweight paint shall be used. The use of tar based paint is not allowed.

The Contractor should avoid any encroachment on adjacent properties, and shall repair any damage caused to public or private property as a result of the work described in this contract. The Contractor shall leave the entire work area in a safe and clean condition satisfactory to the Engineer.

21-3 TREE TRIMMING FOR CONSTRUCTION CLEARANCE - When it is necessary for Contractor to trim trees and other vegetation to provide adequate clearance for construction equipment and operations as required by Contract Work, Contractor may selectively trim the area in conflict after obtaining approval from the Engineer at least two (2) working days in advance. In such cases, work shall be performed under the direction of a certified arborist and in accordance with *Best Management Practices- Utility Pruning of Trees*, published by the International Society of Arboriculture. All work shall be done in the presence of the Engineer. Failure to comply with these provisions shall constitute ground for the Engineer to require the Contractor to replace the affected tree in kind at his sole expense, or in the case of mature trees greater than six (6) inches in trunk diameter measured at three (3) feet above the ground surface, to deduct the market value of an in-kind replacement tree from any monies due to Contractor under the Contract.

21-4 MEASUREMENT - Measurement shall be as indicated in the bid proposal. In general, trees shall be measured:

- 1) Per Each, or
- 2) Zone
- 3) Street
- 4) Lump Sum

When measured per each trimming shall be designated by address or plan stationing.

When measurement by zone the zone shall include all City-owned trees within the zones, including parks and medians indicated on the Contract Plans.

When measured by street the bid price per street shall include all trees on both sides of the designated street.

When no limit is specified for the beginning and end of work on the street specified, it shall mean city limit to city limit on that designated street.

21-5 PAYMENT - The Contract unit or lump sum prices shall be considered as including full compensation for furnishing all labor, materials, tools, equipment and incidentals required to complete the contract items of work, including but not limited to removals, hauling, disposal costs and clean up. When no bid item is specified in the Contract, tree trimming and removal work shall be considered incidental to other work in Contract, and compensation shall be considered to be included in the payment for those items of work, and no additional compensation shall be allowed therefor.