

SECTION 31 11 01 – TEMPORARY TREE PROTECTION

PART 1 - GENERAL

1.1 Scope of Standards

- A. This standard provides general guidance concerning the specific preferences of the University of Texas at Dallas for Temporary Tree Protection.
- B. UT Dallas recognizes that project conditions and requirements vary, thus precluding the absolute adherence to the items identified herein in all cases. However, unless there is adequate written justification, it is expected that these guidelines will govern the design and specifications for the projects.

1.2 Related Documents

- A. Drawings and general provisions of the Construction Contract, including General and Supplementary Conditions and Division 00 Specification Sections, apply to this Section.

1.3 Summary

- A. This Section tree includes preservation procedures including:
 - 1. Establishing adequate tree protection fencing.
 - 2. Raising low limbs by cabling, trimming or tying to allow access through existing roads and to allow access around the proposed building.
 - 3. Containing concrete and other chemicals to specific washout areas away from root zones.
 - 4. Limiting liming of soil to a maximum distance of 10' from any tree drip line.

1.4 Quality Assurance

- A. The work of this section shall be performed by a company which specializes in the type of tree preservation work required for this Project, with a minimum of 5 years of documented successful experience and shall be performed by skilled workmen thoroughly experienced in the necessary crafts.
 - 1. Work shall be performed in compliance with UT Dallas insurance underwriters' requirements.
- B. Manufacturer shall specialize in manufacturing the type of materials for tree preservation work specified in this section, with a minimum of 5 years of documented successful experience, and have the facilities capable of meeting all requirements of Contract Documents.

1.5 Submittals

- A. Submit the following according to Conditions of the Construction Contract and Division 1 Specification Sections.
- B. Hazardous Materials Notification: In the event no product or material is available that does not contain asbestos, PCB or other hazardous materials as determined by UT Dallas, a "Material Safety Data Sheet" (MSDS) equivalent to OSHA Form 20 shall be submitted for that proposed product or material prior to installation.
- C. PCB Certification: After completion of installation, but prior to Substantial Completion, Contractor shall certify in writing that products and materials installed, and processes used, do not contain polychlorinated biphenyls (PCB), using format in Section 01 77 00/Closeout Procedures.

1.6 Warranty

- A. Comply with General Conditions and Section 01 78 36/Warranties.

PART 2 - PRODUCTS

2.1 Unauthorized Materials

- A. Materials and products required for work of this section shall not contain polychlorinated biphenyls (PCB) or other hazardous materials identified by UT Dallas.

2.2 Acceptable Manufacturers

- A. Products of the manufacturers specified in this section establish the minimum aesthetic, functional and quality standards required for the work of this section.
- B. Substitutions: Comply with Section 01 25 13.

PART 3 - EXECUTION

3.1 Tree Preservation Guidelines

- A. Damaging Conditions not allowed:
 - 1. All trees to be preserved should be identified on plans before construction begins. Diameter Breast High (DBH) and extent of canopy should be shown on plans. Once trees to be preserved are identified, the Critical Root Zone (CRZ) of each should be determined by the Director, Grounds Operations, or delegate. Tree protection fencing shall be placed at the extent of the CRZ and shall not be moved for the duration of the project. CRZ shall also be shown on plans with dimensions from trunk of tree.

If Critical Root Zone (CRZ) cannot be used, then the variance from these standards has to be approved by the Director of Grounds Operation.
 - 2. It should be determined by the Director of Grounds Operations and the Project Manager what pruning will be required to accommodate equipment. Pruning shall be done by an ISA Certified Arborist at the Contractor's expense.
 - 3. Prevent compaction of root zone areas by foot and vehicular traffic and material storage.
 - a. Soil compaction, one of the leading contributors to tree decline and death associated with construction, can be controlled with the use of adequate tree protection fencing and mulching.
 - b. Minimum tree protection fencing should include the area from the tree trunk out to the canopy drip line or CRZ.
 - 4. Prevent poisoning by pouring or spilling chemicals including gasoline, oil, paint, concrete and other injurious materials on or near root zone areas.
 - 5. Prevent damage by improper pruning techniques or contact from equipment such as backhoes.
 - 6. Prevent damage from lack of moisture during periods without adequate natural rainfall, or from changing the natural drainage patterns. Supplemental irrigation may be required as determined by Director, Grounds Operations, or delegate.
 - 7. Prevent change in soil pH caused by the addition of lime in root zones by direct application or concrete waste. After protection fences are removed, no soil or fill should be added within root zone without approval of Director, Grounds Operations, or delegate.

8. Prevent change in grade. No change in grade with CRZ should occur. Grade change outside of CRZ should be limited to a maximum of 3" cut or fill.
9. If damage occurs to protected trees or trees become stressed as a result of the construction process, remediation measures shall be recommended by ISA Certified Arborist and implemented at the Contractor's expense. If pruning is required, this shall be done only by or under the oversight of an ISA Certified Arborist.

B. Protection Procedures:

1. Limit construction access by placing temporary tree protection fencing around trees to be preserved (See A1 above). Fence location should be inspected regularly to maintain integrity of protection. Trees should be mulched to a depth of at least 6 inches within fence and not be against trunk.
 - a. Fencing should be placed as far out from the tree trunk as possible, a minimum distance to include the branch drip line or CRZ. And should be installed and removed by hand.
 - b. In areas where construction access is required, the natural grade can be protected from compaction by placing a blanket of mulch 6 – 12" deep over ¾" plywood over natural grade. This should be removed after the project is completed by hand, using no equipment.
2. Any work, excavation or grading required within the protected root zone areas should be limited to 3" cut or fill, with no roots over ¾" in diameter being cut.
 - a. Work in root zone areas where roots exceed ¾" diameter should be done by hand, including grading, landscaping and irrigation installation. An air spade should be used in areas where a trench is required across or through CRZ.
3. Route underground utility lines around root zone areas as a first priority; second priority, air spade; third priority, bore at a minimum depth of 3' to eliminate open cuts through root zones.
 - a. When it is not possible to re-route, air spade, or to bore under the root system, hand dig to preserve roots ¾" or larger. Air spade is required where applicable.
4. Place drives, walks, etc., on or above grade to eliminate altering the root system.
 - a. Feeder roots of most trees are within 12 - 18" of the soil surface.
5. When, excavating with a backhoe in tree root zone areas is unavoidable, cut roots along the edge of the required excavation point using a conventional trenching machine. (Depth of trench should be limited to the depth of the required excavation for installation of the utility or 3', whichever is less.). This helps reduce the number of roots damaged by the ripping and tearing of the backhoe.
 - a. Make a clean, smooth cut on roots using a saw or pruning shears and apply tree paint to roots immediately after damage has occurred.
6. Cover exposed roots within 48 hours during hot dry periods to protect the roots from drying out.
 - a. Deep root fertilize.
 - (1) Recommended fertilizers – 3-1-1 or 2-1-1 ratio; the nitrogen content should be no more than 50% water soluble.
 - (2) Remove any mulch by hand without using machinery.
 - (3) Apply approximately one (1) pound nitrogen per 1,000 square foot.
 - (4) Broadcast uniformly under the drip line of the tree and extend out approximately 10' beyond the drip line.

- (5) Replace the mulch.
- (6) Irrigate sufficiently to activate the fertilizer; approximately 1" should be applied in the absence in the absence of rain for three consecutive days.
- b. Trees affected by construction should have CRZ covered with compost to a 3" depth and then mulched immediately after any construction damage. And then be fertilized yearly until the trees have become reestablished the first beginning a year after damage occurrence. The cost of this shall be the responsibility of the Contractor.
- 7. During periods of minimal rainfall, supply supplemental moisture to damaged trees to help eliminate additional stress.
- 8. Due to threat of Oak Wilt, the pruning of any Oak trees should be done only at the hottest and coldest times of the year, July-August or December-January. Again, pruning should be done by ISA Certified Arborist and can be performed outside of these times if performed by such.
 - a. Beetles and fungus mats are active during this period and could transmit the disease.
- 9. Wound dressing must be applied to pruning cuts or damage to trunks or limbs, on all oak trees at all times of the year within 15 minutes of damage.
- C. Cautions:
 - 1. The area of soil from the branch drip line to the tree trunk is considered the most important part of the tree feeder root zone area that should be protected from disturbance.
 - a. When possible, 10' beyond the drip line should also be protected.
 - 2. Request consultation with the Owner before any disruption to the campus landscape.
 - a. Work Order should be generated by the Project Manager or Supervisor in charge of the job.
 - b. This will help Owner track down protection procedures and provide a history on the care of trees.

3.2 Tree Preservation Procedures

- A. Tree Protection Fencing:
 - 1. Tree protection fencing should be installed to protect all tree root zone areas adjacent to areas of construction activity as designated on the site plan.
 - a. Tree protection fences should be installed to protect root zones as well as low growing limbs which exist adjacent to the construction and materials storage areas.
 - b. Locations for tree protection fencing should be designated on the construction documents.
 - 2. The tree protection fence should be constructed of galvanized chain-link 6' in height. Signage should be placed on all fences to clearly indicate to all on site that fences shall not be moved by construction personnel without authorization which has been cleared by Owner, or delegate.
 - 3. Tree protection fencing should be installed prior to any site activity and should remain in place in its original location until construction is complete and as authorized by the Owner.
 - 4. Access into protected root zone areas should be prohibited.
 - a. Any necessary access into protected root zone areas should be approved by the Owner.
- B. Demolition of Existing Buildings and Parking Lots with Tree in proximity:

1. Demolition should be accomplished working from the limits of the existing parking lot and building.
 - a. Caution should be used when removing the parking lot surface and base material in order to keep from disturbing roots growing below the base material.
 2. Test dig under the parking lot, in proximity of trees, to determine if roots are growing below the paved surface.
 - a. Should a significant number of roots be found within the base material by the project urban forester, the roots should be pruned prior to removing the base material, in a way indicated in 3.01 B.5 above.
 - (1) Pruning the roots at the limit of the demolition area will minimize damage to roots outside of the area to be excavated.
 - b. Soil below the base material should not be disturbed by excavating into the soil or by compaction caused by driving trucks and equipment over it.
- C. Construction:
1. Designate limited areas for concrete washout.
 - a. Locate concrete washout areas away from root zones to eliminate the chance of concrete or contaminated water from running into the root zone areas.
 2. Stabilizing soils with lime or related products should be limited to a minimum distance of 10' from the drip line of any tree.

3.3 Tree Services

- A. Tree Limb Trimming:
1. Trees located adjacent to the construction access route to the construction site should be pruned by ISA Certified Arborist to allow access of vehicles hauling construction materials.
 - a. Raising low limbs temporarily by using ropes to tie limbs up may be an alternative to trimming.

END OF 31 11 01