

DIVISION 2 – SITEWORK

Section 02920 –Tree Salvage

Introduction

This section contains standards for the identification, removal, storage and replanting of existing trees on site.

Part 1 - General

- Create a Reference Sheet for identification of trees to be salvaged.
- Provide backflow prevention devices for the temporary irrigation system
 - Holding Yard: The holding yard for this project will be on or adjacent to the project site with an available water source. Water shall be provided by the Contractor.
- Identification of salvage material
 - The Contractor, Architect and Owner's representatives will determine the final selection of salvage specimens based on specimens already identified, current health, accessibility, viability and appearance.
 - These trees shall be final-tagged with colored tape in conspicuous locations and fenced with temporary construction fence and irrigated to avoid construction damage until they are removed.
 - Contractor is not to remove or work on any salvage material until after the Owner, or designated agent, has determined the limits of the salvage and work area, and has given the Contractor written consent to proceed.
- Removal of salvage material
 - Description of Work: The Contractor shall provide all labor, tools and materials necessary to remove salvage plants from the ground, box them (when required) and transport them to the holding yard.
 - If it is determined that any of the trees to be transplanted can be immediately installed in their new location within the project, the Contractor may do so, but must water, maintain and protect the trees during construction.
 - If any trees are to be transplanted directly onto UA property, the final site will need to be Blue Staked. Allow time for approval.
 - Access: Access shall be entirely within the Owner's property. Damage to surrounding areas not within the property, including but not limited to buildings, curbs, paving, vegetation and utilities, shall be the Contractor's responsibility.
 - The Architect will also identify areas within the property that are not to be disturbed. Any damage within these areas will also be the Contractor's responsibility. If designation of these areas makes access impossible, Contractor shall notify the Architect.
- Protection
 - Contractor shall provide barrier protection to warn pedestrians about the plant excavations, and reasonably prevent someone from falling into one. Protection shall be selected by the Contractor and suitable for the purpose intended and approved by the Architect and Owner.
 - Protection shall be provided during sidebox operations and following removal of the boxed tree, and shall remain in place until the excavation is filled under grading operations.
- Warranty
 - The Contractor shall warranty plants from damage caused by his own operations including boxing, holding and replanting. This warranty includes breakage of major limbs (after trimming), destruction of major root systems, excessive scarring to the trunk, and death from stress or severe insect damage.
 - The Value of the trees to be salvaged shall be determined by a qualified Arborist, and shall be based in whole or in part on the following factors: 1) suitability of the species for the site 2) tree health and vigor prior to start of construction 3) replacement cost for a comparable tree at a local supplier 4) increase in

value of the UA tree based on increase in size beyond that of saleable size 5) rarity within the UA campus tree collection 6) dollar contribution of tree as modeled in USFS i-Tree Suite of software programs

- Should replacement material be required under this warranty, Contractor is responsible for the procurement and transportation of the replacement material.
- Plant materials shall be guaranteed for one year following final acceptance of planting operations under this section.

Part 2 - Products

- **Box Materials**
 - Boxes shall be of wood strong enough to allow transport of trees both to and from the storage facility.
 - Boxes shall be of wood, resistant to rot and fungus, and capable of lasting at least three years.
 - Should the box require replacement, or damage occur to the tree as a result of poor box material, the tree shall be replaced as a warranty item at no additional cost to the Owner.
- **Nutrients**
 - Contractor shall apply chemical nutrients to the tree, as needed, to maintain tree in good health. Balanced fertilizer at ½ strength and Vitamin B-1 shall be used per manufacturer's recommendations with the first watering.
 - Loss of tree from lack of nutrients or over-fertilizing shall be considered a warranty item and the tree shall be replaced at no additional cost to the Owner.
 - Contractor should use an anti-transpiration agent such as Vapor Guard, or approved equal, as needed to prevent excessive wilting and wind damage.

Part 3 - Execution

- **Trimming and Pruning**
 - The Contractor shall prune off all dead limbs from the salvage material.
 - Contractor consult with the Owner's Certified Arborist before removing canopy branching from the tree only, as needed, to reduce stress on tree during the moving operation.
 - Pruning cuts shall be clean and outside the branch collar. Techniques shall follow current ANSI 300 Standards for Pruning. Pruning shall be done in such a manner as to retain the original character and structure of the trees.
 - Any tree which is found to be diseased at this stage may be removed from the salvage list with the approval of the Architect.
 - Contractor is responsible for protection of cuts after pruning. No pruning paint shall be applied to wounds.
 - Architect and Owner's Arborist shall inspect tree pruning prior to sideboxing. Trees which, in their opinions, are of unacceptable shape, size or canopy may be removed from the salvage list at this time.
- **Boxing**
 - Contractor shall identify the size (caliper) of the tree and the corresponding box size. The chart below gives the approximate relationship between box size and caliper size. Contractor may, at his discretion, increase the box size, but should not decrease the box sizes from those listed below. Caliper sizes indicated on the tree inventory plan may vary some from actual conditions. Contractor is responsible for determining actual caliper size for each tree identified for salvage.

Trunk Diameter in inches	Box Size in Inches
Under 4"	42
7-1/2"	45
8-1/2"	48
10"	51
13"	54
14"	57
Over 14"	60 - 120"
 - The Contractor shall sidebox the trees a minimum of 35 days prior to removing the trees.
 - During the sideboxed holding period, the Contractor shall provide water, nutrients and herbicides to the

salvaged material, as needed. Failure to provide proper care during this stage, which results in the loss of the material, shall be treated as a warranty item.

- Removal: As the tree is removed from the ground, the Contractor shall provide reasonable care during this operation to avoid breaking of limbs and scarring of the trunk.
- Transportation:
 - The Contractor shall transport the trees from their location in the field to the designated holding yard.
 - This transportation includes the loading and unloading of the trees from the truck or other transporting vehicle.
- Maintenance of plants during holding period
 - The Contractor shall provide all labor, tools and materials necessary for the maintenance of the salvage materials in the holding yard during a holding period as previously specified.
 - The Contractor shall be responsible for the replacement of salvage material which dies or is seriously damaged during the holding period. See the warranty section for complete specifics of this warranty.
 - Holding Yard:
 - The Contractor shall store or make arrangements for the storage of all salvaged material in the secure yard during construction. This yard shall be located as designated by the Architect and Owner's Representative.
 - The holding yard shall be open for prearranged inspections on a regular basis by the Architect and Owner's Representative.
 - All salvage material shall be clearly labeled and stored in one specific location if other plant material is stored onsite.
 - Time Limitation: The Contractor shall be responsible for maintenance of the material as previously after delivery of the material to the holding yard.
 - Water: The Contractor shall be responsible for provision of a temporary drip irrigation system sufficient to provide water to the salvage material. Contractor shall be responsible for making new connection and removing temporary lines at end of holding period.
 - Fertilizer: The Contractor shall be responsible for provision of nutrients needed to maintain the material in a healthy condition.
 - Other: The Contractor shall be responsible for the provision of any other materials necessary for the maintenance of the salvage material in a healthy condition and secure location.
 - The Contractor shall provide qualified manpower on a regular basis to inspect the trees for health and vigor.
 - The Contractor shall participate with the Architect and Owner's Representative on a monthly basis for inspection.
- Monthly operations
 - The planting of the salvaged material will be done in the same general area as the salvage operations. Exact location will be per the landscape plans.
 - Plant hole sizes and planting mixtures will be as shown on the plans.
 - Contractor shall coordinate planting and new irrigation with the general landscape contractor. The general landscape contractor will install the permanent irrigation system. The irrigation system must be functional within a week of tree installation.
- Cleanup
 - Contractor shall maintain the area of his work free from debris and extraneous material throughout the course of this work.

End of Section 02920