

# CASEY & KELLER, INC.

LAND SURVEYORS + CIVIL ENGINEERS + PLANNERS

N.J. STATE BOARD OF PROFESSIONAL ENGINEERS & LAND SURVEYORS CERTIFICATE OF  
AUTHORIZATION NO. 24GA27985400

258 MAIN STREET, MILLBURN, NEW JERSEY, 07041

VOICE: 973-379-3280 FAX: 973-379-7993

## ***EXISTING TREE INVENTORY & TREE PRESERVATION PLAN***

### **THE VILLAS AT ORANGE LAWN**

**305 RIDGEWOOD ROAD NORTH  
Block 1304—Lot 6**

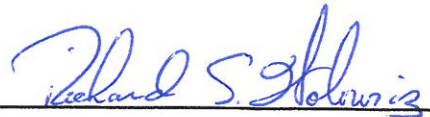
**TOWNSHIP OF SOUTH ORANGE VILLAGE  
ESSEX COUNTY, NJ**

**PROJECT # 1140108**

**DATE: September 8, 2016**



**BRIAN S. CONWAY, ASLA, LLA, PP**  
NJ LLA # AS 00661  
NJ PP # LI 05246



**RICHARD S. WOLOWICZ**  
NJ CTE #281

**TREE PRESERVATION PLAN  
ORANGE LAWN TENNIS CLUB  
SOUTH ORANGE, NJ 07079**

**INTRODUCTION:**

The Orange Lawn Tennis Club is an historic organization that was founded in 1880, the second oldest such club in New Jersey.

The actively developed and actively utilized part of the property lies to the west of the central access road. This portion of the property contains the main club building, tennis courts, swimming pool, drives, maintenance facilities, and other related uses. There are large specimen trees in this area.

The area to the east of the central access road is undeveloped and is much less actively used. This area consists of a sloped lawn area and a band of vegetation to the east and south. There are some large specimen trees immediately to the east of the central access road.

The project in question proposes the development of 10 residential duplex buildings for a total of 20 dwelling units with roadway, drives, walks, storm water management facilities and other associated uses. The townhouse development is proposed for the undeveloped area to the east of the access drive; the Orange Lawn Tennis Club to the west of the access drive is not part of this proposed work. The Orange Lawn Tennis Club is proposing various parking improvements as part of a separate site plan.

The trees in the eastern area of the property are the subject of this 'Tree Preservation Plan'.

**METHODOLOGY:**

Evaluating the existing conditions is an integral part of the site design process; site conditions such as slope, soil type, drainage, and existing vegetation are all important site conditions to consider. To that end, and in consideration of the existing trees, a tree inventory was prepared. All trees over 8" DBH (diameter at breast height) within the work area were located, measured, identified, and evaluated. The evaluation includes the overall condition (health) of the tree and any remarkable attributes. After the evaluation was completed, the trees were put into one of three categories based on the health, condition, and species of the trees. The categories are as follows:

- **HIGH VALUE TREES:** *(High Priority For Preservation)*
  - Trees in fair or better condition
  - Tree without structural defects
  - Trees without significant bark damage, cavities, or other deformities
  - Native tree species
  - Non-native species with desirable attributes
  - Trees of large sizes (20" DBH or greater)
- **MODERATE VALUE TREES:** *(To Be Preserved Where Possible/Practical)*

- Trees in poor-fair condition
- Trees with minor/correctable structural defects
- Trees that may have some bark damage, cavities, or other deformities that do not endanger the health of the tree
- Native tree species
- Non-native species with desirable attributes
- Other Non-native species in good condition
- Trees of moderate size (10-20" DBH)
- **LOW VALUE TREES: (To Be Removed When Possible and Appropriate)**
  - Dead trees/trees in very poor condition
  - Trees with major structural defects
  - Alien invasive species
  - Trees with significant bark damage, cavities, rot, or other deformities that imperil the tree
  - Hazard trees
  - Diseased trees and unhealthy tree species
  - Trees which have been disfigured by the electric utility's line clearance contractor

The site was initially designed, and subsequently revised, with an eye towards preserving the 'High Value Trees' where possible. The road layout, building layout and retaining wall configuration have been revised and refined to respect and preserve the high value trees whenever possible. The site grading, walls, patios, and other work were refined to respect and preserve the 'Moderate Value Trees' when possible. The 'Low Value Trees' were not considered for preservation and in most instances should be removed to create space for the higher values trees and to plant new desirable trees.

Notwithstanding the site plan consideration given to preserving the high value and moderate trees, this tree preservation plan outlines the means and methods for preserving and caring for the existing trees to remain.

#### **OVERVIEW:**

Based on the heretofore laid out methodology, Trees that are suitable for preservation are not in the construction footprint and are:

- Healthy trees
- Trees with no, or minor, structural defects
- Trees with no, or minimal mechanical damage or deformity
- Native, or desirable non-native species worthy of the effort.
- Larger trees, when and where possible

The goal of this tree preservation plan at the Orange Tennis Lawn Club is to protect and maintain the health and vigor of the higher value onsite trees by ensuring adequate space for

trees with the best health, structure and appearance. Another important goal is to protect and enhance the natural environment with all of the benefits that trees intrinsically provide. Another benefit of preserving these large trees is protecting the historical context of the site and neighborhood. The removal of the dead, diseased, unhealthy, hazardous, or invasive trees and others that are in the way of construction is a “best management practice”. Another objective of the tree preservation plan is that the preserved trees need adequate space for root and canopy function and growth.

Trees require three basic elements to maintain their health. These are air, water and soil nutrients. They also need a soil that is free of contamination and compaction that allows unrestricted movement of water and air. Finally, they require protection from natural enemies, including insects, disease and physical damage.

They are key components to trees that, as a whole, keep a balanced relationship in place which allows a tree to continue to be in good vigor.

- Roots are essential to tree health. They support tremendous weight; store food; and take up water and nutrients from the soil. Roots also need to be well anchored into a soil to hold a tree safely upright.
- The bark serves as a living barrier to insects, disease and water loss. It also serves as a transport system to allow food and nutrients to travel to and from the roots the leaves.
- The tree trunk supports the canopy and provides the height of the tree, an area for storing food materials and sustains branches and leaves.

#### **TREE REMOVAL:**

Trees to be removed are indicated on the plan with specific information in the existing tree inventory. Their respective locations are shown on the tree removal plan.

#### **TREE PROTECTION**

A Tree Protection Zone (TPZ) is to be established around each tree (excluding woodlots) that is to be preserved. The TPZ provides a 12” diameter of tree protection area on the ground plane for each inch of DBH (ie: a 10” DBH will have a TPZ diameter of 10 feet).

The TPZ area is to be fenced off prior and during all construction activities. Once established, the fencing is not to be removed, moved or altered without the approval of a Certified Tree Expert and the Project Manager. The TPZ areas must be in place before any clearing or any construction activity is initiated. Establishing a proper TPZ will protect tree roots from being disturbed and from soil compaction. This is critical to tree health.

Tree roots and soil compaction must be protected from traffic and construction activity, specifically in areas outside the TPZ but close to, or underneath, a tree's canopy. This is to be accomplished by laying down six inches of wood chips over a geotextile fabric where construction traffic is expected. Traffic is to maintain a fairly simple route of entry and egress in the vicinity of protected trees and TPZ.

Protected trees with low limbs need to be pruned up to minimize any damage by construction equipment and activity. This work shall be completed by a professional tree company in a manner following industry standards. Trimming is to be completed prior to the TPZ zone being established and construction activity begins.

Throughout the course of the construction, the trees need to be inspected by a Certified Tree Expert to monitor adherence to the intent of this Tree Preservation Plan.

Trees slated for protection are indicated on the tree removal plan as well as in the tree inventory that follows.

#### **POST CONSTRUCTION TREE CARE**

After construction activity ceases, post construction tree care should be implemented. These include:

- Removing TPZ fencing, woodchips and geotextile fabric that were used to protect the trees.
- Deep root feeding should be done to each of the protected trees;
- Monitor the trees for 5 years;
- Prune any dead and or broken branches in an appropriate time frame;
- Treat any tree injuries;
- Establish irrigation if needed;
- Take steps to alleviate soil compaction as required.



## EXISTING TREE INVENTORY

| No. | DBH    | Tree Type      | Condition | Comment                            | Tree Assessment | Tree Status   |
|-----|--------|----------------|-----------|------------------------------------|-----------------|---------------|
| 1   | 11 "   | Norway Maple   | Fair      | Close To building, Offsite         | Low Value       | To Remain     |
| 2   | 8 "    | Norway Maple   | Fair      | Leaning, Offsite                   | Low Value       | To Remain     |
| 3   | 60 "   | American Beech | Fair      |                                    | High Value      | To Remain     |
| 4   | 9 "    | Norway Maple   | Fair      | Split @ 15', Offsite               | Low Value       | To Remain     |
| 5   | 11 "   | Hemlock        | Very Poor | Offsite                            | Low Value       | To Remain     |
| 6   | 10 "   | Norway Maple   | Fair      | Offsite                            | Low Value       | To Remain     |
| 7   | 8 "    | Mulberry       | Poor      | Stunted, 1 Sided, Offsite          | Low Value       | To Remain     |
| 8   | Twin " | Norway Maple   | Poor      | Cavity, Leaning                    | Low Value       | To Remain     |
| 9   | 10 "   | Norway Maple   | Fair      | Leaning, @ Power Lines, Offsite    | Low Value       | To Remain     |
| 10  | 36 "   | American Beech | Good      | Specimen, With Deadwood            | High Value      | To Remain     |
| 11  | 8 "    | Norway Maple   | Poor      | Base Injury                        | Low Value       | To Be Removed |
| 12  | 8 "    | Norway Maple   | Very Poor | On Wires                           | Low Value       | To Be Removed |
| 13  | 9 "    | Norway Maple   | Very Poor | Topped, Bad Form                   | Low Value       | To Be Removed |
| 14  | 14 "   | Norway Maple   | Very Poor | Split                              | Low Value       | To Be Removed |
| 15  | 14 "   | Black Cherry   | Fair      | Heavy Poison Ivy                   | Moderate Value  | To Remain     |
| 16  | 9 "    | Norway Maple   | Poor      | Old Split, 1 Sided                 | Low Value       | To Be Removed |
| 17  | 8 "    | Norway Maple   | Fair      | Powerline Clearance, Offsite       | Low Value       | To Remain     |
| 18  | 8 "    | Norway Maple   | Fair      |                                    | Low Value       | To Be Removed |
| 19  | 11 "   | Ash            | Poor      |                                    | Low Value       | To Be Removed |
| 20  | 34 "   | White Pine     | Poor      | Powerlines, High Branched, Offsite | Moderate Value  | To Remain     |
| 21  | 19 "   | Ash            | Poor      | Leaning                            | Low Value       | To Be Removed |
| 22  | 9 "    | Norway Maple   | Poor      | Hook @ 10'                         | Low Value       | To Be Removed |
| 23  | 9 "    | Norway Maple   | Poor      | Bad Structure, Leaning             | Low Value       | To Be Removed |
| 24  | 20 "   | Black Locust   | Poor      | Severe Lean, Poison Ivy            | Low Value       | To Be Removed |
| 25  | 8 "    | Horse Chestnut | Fair      |                                    | Moderate Value  | To Remain     |
| 26  | 12 "   | Norway Maple   | Fair      |                                    | Low Value       | To Be Removed |
| 27  | Multi  | Ash            | Fair      |                                    | Low Value       | To Be Removed |
| 28  | Multi  | Ash            | Dead      |                                    | Dead            | To Be Removed |
| 29  | 14 "   | Norway Maple   | Average   |                                    | Low Value       | To Be Removed |
| 30  | 9 "    | Ash            | Dead      | Leaning On #20                     | Dead            | To Be Removed |
| 31  | 20 "   | Ash            | Dead      |                                    | Dead            | To Be Removed |
| 32  | 9 "    | Ash            | Dead      |                                    | Dead            | To Be Removed |
| 33  | 9 "    | Ash            | Fair      |                                    | Low Value       | To Be Removed |

| No. | DBH  | Tree Type    | Condition | Comment                         | Tree Assessment | Tree Status   |
|-----|------|--------------|-----------|---------------------------------|-----------------|---------------|
| 34  | 16 " | Ash          | Dead      |                                 | Dead            | To Be Removed |
| 35  | 14 " | Norway Maple | Poor      | Crooked, Dead Arm               | Low Value       | To Be Removed |
| 36  | 14 " | Norway Maple | Poor      | Powerline Issue                 | Low Value       | To Be Removed |
| 37  | 8 "  | Ash          | Poor      |                                 | Low Value       | To Be Removed |
| 38  | 9 "  | Ash          | Poor      | Thin, Spindly, No Canopy        | Low Value       | To Be Removed |
| 39  | 8 "  | Norway Maple | Fair      |                                 | Low Value       | To Be Removed |
| 40  | 8 "  | Ash          | Poor      | Thin, Spindly, No Canopy        | Low Value       | To Be Removed |
| 41  | 23 " | Ash          | Fair      |                                 | Low Value       | To Be Removed |
| 42  | 12 " | Pin Oak      | Fair      |                                 | Moderate Value  | To Be Removed |
| 43  | 24 " | Black Locust | Poor      | Leaning, Poison Ivy             | Low Value       | To Be Removed |
| 44  | 21 " | Black Locust | Fair      | Twisted, Deadwood               | Low Value       | To Be Removed |
| 45  | 8 "  | Norway Maple | Poor      | Fork @ 6'                       | Low Value       | To Be Removed |
| 46  | 8 "  | Norway Maple | Poor      |                                 | Low Value       | To Be Removed |
| 47  | 16 " | Red Maple    | Poor      | Cavity, 1 Sided, Filled Against | Low Value       | To Be Removed |
| 48  | 23 " | Black Locust | Poor      | Crooked, Bark/Trunk Damaged     | Low Value       | To Be Removed |
| 49  | 15 " | Black Locust | Dead      |                                 | Dead            | To Be Removed |
| 50  | 20 " | Black Locust | Fair      | Heavy Poison Ivy                | Low Value       | To Be Removed |
| 51  | 13 " | Norway Maple | Poor      |                                 | Low Value       | To Be Removed |
| 52  | 14 " | Norway Maple | Poor      | Cavity                          | Low Value       | To Be Removed |
| 53  | 16 " | Norway Maple | Poor      | Scar In Trunk, Leaning          | Low Value       | To Be Removed |
| 54  | 30 " | Black Locust | Poor      | Dead Wood, Broken At Top        | Low Value       | To Be Removed |
| 55  | Twin | Black Locust | Poor      | Cavity, Dead Wood               | Low Value       | To Be Removed |
| 56  | 11 " | Norway Maple | Poor      |                                 | Low Value       | To Be Removed |
| 57  | 10 " | Norway Maple | Poor      | Crook                           | Low Value       | To Be Removed |
| 58  | 14 " | Black Cherry | Dead      |                                 | Dead            | To Be Removed |
| 59  | 23 " | Black Locust | Poor      | Poison Ivy                      | Low Value       | To Be Removed |
| 60  | 30 " | Black Locust | Poor      | Cavity Twisted                  | Low Value       | To Be Removed |
| 61  | 8 "  | Norway Maple | Fair      |                                 | Low Value       | To Be Removed |
| 62  | 11 " | Red Maple    | Poor      | 1 Sided, Leaning                | Low Value       | To Be Removed |
| 63  | 17 " | Ash          | Dead      |                                 | Dead            | To Be Removed |
| 64  | 8 "  | Elm          | Poor      |                                 | Low Value       | To Be Removed |
| 65  | 25 " | Black Locust | Fair      |                                 | Low Value       | To Be Removed |
| 66  | 17 " | Norway Maple | Poor      | 1 Sided, Leaning                | Low Value       | To Be Removed |
| 67  | 20 " | Norway Maple | Fair      |                                 | Low Value       | To Be Removed |

| No. | DBH  | Tree Type      | Condition | Comment                  | Tree Assessment | Tree Status   |
|-----|------|----------------|-----------|--------------------------|-----------------|---------------|
| 68  | 13 " | Black Locust   | Fair      |                          | Low Value       | To Be Removed |
| 69  | Twin | Norway Maple   | Poor      | Grafted Twin             | Low Value       | To Be Removed |
| 70  | 18 " | Black Locust   | Fair      | At Powerlines            | Low Value       | To Be Removed |
| 71  | 21 " | Tree Of Heaven | Poor      |                          | Low Value       | To Be Removed |
| 72  | 13 " | Norway Maple   | Fair      |                          | Low Value       | To Be Removed |
| 73  | 9 "  | Norway Maple   | Fair      |                          | Low Value       | To Be Removed |
| 74  | 24 " | Linden         | Good      |                          | High Value      | To Remain     |
| 75  | 9 "  | Norway Maple   | Fair      |                          | Low Value       | To Be Removed |
| 76  | 10 " | Norway Maple   | Fair      | Leaning, 1 Sided         | Low Value       | To Be Removed |
| 77  | 39 " | Black Locust   | Poor      | Cavity, Split, Dead Wood | Low Value       | To Be Removed |
| 78  | 13 " | Norway Maple   | Fair      |                          | Low Value       | To Be Removed |
| 79  | 38 " | Black Locust   | Poor      | Cavity, Leaning          | Low Value       | To Be Removed |
| 80  | 8 "  | Ash            | Poor      |                          | Low Value       | To Be Removed |
| 81  | 20 " | Black Locust   | Poor      | Leaning                  | Low Value       | To Be Removed |
| 82  | 14 " | Norway Maple   | Poor      | Uprooted                 | Low Value       | To Be Removed |
| 83  | 30 " | Oak            | Poor      | Former Twin, Half Dead   | Low Value       | To Be Removed |
| 84  | 23 " | Pin Oak        | Fair      |                          | Moderate Value  | To Remain     |
| 85  | 20 " | Black Locust   | Poor      |                          | Low Value       | To Be Removed |
| 86  | 9 "  | Norway Maple   | Fair      | Poison Ivy               | Low Value       | To Be Removed |
| 87  | 22 " | Black Locust   | Poor      | Cavity, Poison Ivy       | Low Value       | To Be Removed |
| 88  | 19 " | Black Locust   | Poor      | Leaning                  | Low Value       | To Be Removed |
| 89  | 17 " | Black Locust   | Poor      | Leaning                  | Low Value       | To Be Removed |
| 90  | 17 " | Black Locust   | Poor      |                          | Low Value       | To Be Removed |
| 91  | 9 "  | Norway Maple   | Fair      |                          | Low Value       | To Be Removed |
| 92  | 14 " | Black Locust   | Poor      | Cavity, Leaning          | Low Value       | To Be Removed |
| 93  | 16 " | Black Walnut   | Good      |                          | Moderate Value  | To Be Removed |
| 94  | 13 " | Norway Maple   | Poor      | Cavity, Poison Ivy       | Low Value       | To Be Removed |
| 95  | 19 " | Black Locust   | Poor      | Leaning                  | Low Value       | To Be Removed |
| 96  | 21 " | Sugar Maple    | Good      |                          | High Value      | To Be Removed |
| 97  | 11 " | Norway Maple   | Fair      |                          | Low Value       | To Be Removed |
| 98  | 9 "  | Norway Maple   | Poor      | Bark Damage, Poison Ivy  | Low Value       | To Be Removed |
| 99  | 39 " | Pin Oak        | Good      |                          | High Value      | To Be Removed |
| 100 | 12 " | Ash            | Dead      |                          | Dead            | To Be Removed |
| 101 | 18 " | Black Locust   | Poor      | Leaning                  | Low Value       | To Be Removed |



Existing Tree Inventory

| No. | DBH   | Tree Type        | Condition | Comment                    | Tree Assessment | Tree Status   |
|-----|-------|------------------|-----------|----------------------------|-----------------|---------------|
| 102 | 18 "  | Black Locust     | Poor      | Leaning                    | Low Value       | To Be Removed |
| 103 | 16 "  | Norway Maple     | Fair      |                            | Low Value       | To Be Removed |
| 104 | 10 "  | Norway Maple     | Fair      |                            | Low Value       | To Be Removed |
| 105 | 9 "   | Norway Maple     | Poor      | Girdled                    | Low Value       | To Be Removed |
| 106 | 14 "  | Red Maple        | Fair      | Heavy Poison Ivy           | Moderate Value  | To Remain     |
| 107 | 14 "  | White Pine       | Poor      | Leaning, Poison Ivy        | Low Value       | To Be Removed |
| 108 | 9 "   | Black Locust     | Very Poor | Leaning                    | Low Value       | To Be Removed |
| 109 | 14 "  | Norway Maple     | Poor      | Bad Structure @ 20'        | Low Value       | To Be Removed |
| 110 | 13 "  | Pin Oak          | Fair      | Heavy Poison Ivy           | Moderate Value  | To Be Removed |
| 111 | 29 "  | Black Locust     | Poor      | Leaning, Split, Poison Ivy | Low Value       | To Be Removed |
| 112 | 16 "  | Black Locust     | Poor      | Leaning                    | Low Value       | To Be Removed |
| 113 | 28 "  | Sugar Maple      | Poor      | Cavity, Oozing, Dead Wood  | Low Value       | To Be Removed |
| 114 | 20 "  | Norway Maple     | Poor      | Bad Structure              | Low Value       | To Be Removed |
| 115 | 22 "  | Black Locust     | Poor      | Cavity                     | Low Value       | To Remain     |
| 116 | 10 "  | Black Cherry     | Fair      | Poison Ivy                 | Low Value       | To Remain     |
| 117 | 32 "  | Ash              | Dead      |                            | Dead            | To Be Removed |
| 118 | 9 "   | Sugar Maple      | Fair      |                            | Moderate Value  | To Be Removed |
| 119 | 12 "  | Black Cherry     | Poor      | Leaning                    | Low Value       | To Be Removed |
| 120 | 28 "  | Pin Oak          |           |                            |                 | To Be Removed |
| 121 | 22 "  | London Planetree | Good      | Leaning                    | High Value      | To Remain     |
| 122 | 19 "  | Norway Maple     | Good      |                            | Moderate Value  | To Remain     |
| 123 | 28 "  | London Planetree | Good      |                            | High Value      | To Remain     |
| 124 | 17 "  | Norway Maple     | Good      |                            | Moderate Value  | To Be Removed |
| 125 | 41 "  | White Oak        | Good      |                            | High Value      | To Be Removed |
| 126 | 37 "  | White Oak        | Fair      |                            | High Value      | To Be Removed |
| 127 | 48 "  | Black Oak        | Fair      |                            | High Value      | To Be Removed |
| 128 | 47 "  | Black Oak        | Good      |                            | High Value      | To Be Removed |
| 129 | 53 "  | White Oak        | Fair      |                            | High Value      | To Be Removed |
| 130 | 30 "  | Unknown          | Fair      | Cavity With Bees           | High Value      | To Be Removed |
| 131 | 6 "   | Dogwood          | Fair      |                            | Moderate Value  | To Remain     |
| 132 | 6 "   | Black Cherry     | Fair      |                            | Moderate Value  | To Remain     |
| 133 | 6 "   | Black Cherry     | Poor      |                            | Low Value       | To Remain     |
| 134 | Multi | Japanese Maple   | Good      |                            | Moderate Value  | To Remain     |
| 135 | 26 "  | Norway Maple     | Fair      | Cavity, 1 Sided, Dead Wood | Low Value       | To Be Removed |

| No. | DBH  | Tree Type        | Condition | Comment                 | Tree Assessment | Tree Status   |
|-----|------|------------------|-----------|-------------------------|-----------------|---------------|
| 136 | 28 " | False Cypress    | Good      |                         | High Value      | To Remain     |
| 137 | 40 " | Copper Beech     | Very Poor | Decay, Fungus In Roots  | Low Value       | To Be Removed |
| 138 | 48 " | Blue Atlas Cedar | Good      |                         | High Value      | To Remain     |
| 139 | 28 " | London Planetree | Good      |                         | High Value      | To Remain     |
| 140 | 21 " | Norway Maple     | Good      |                         | High Value      | To Remain     |
| 141 | 27 " | London Planetree | Good      |                         | High Value      | To Remain     |
| 142 | 27 " | Ginkgo           | Good      |                         | High Value      | To Remain     |
| 143 | 38 " | Sugar Maple      | Good      |                         | High Value      | To Remain     |
| 144 | 10 " | Norway Maple     | Good      | Lots Of Surface Roots   | High Value      | To Remain     |
| 145 | 39 " | Sugar Maple      | Poor      | CavitiesSplit To Ground | Low Value       | To Be Removed |
| 146 | 13 " | Sugar Maple      | Fair      |                         | Moderate Value  | To Remain     |
| 147 | 31 " | Sugar Maple      | Very Poor | Broken Leader, Cavities | Low Value       | To Be Removed |
| 148 | 19 " | Red Maple        | Fair      | Cavity                  | Moderate Value  | To Remain     |
| 149 | 24 " | Red Maple        | Good      |                         | High Value      | To Remain     |
| 150 | 10 " | Weeping Cherry   | Good      | Specimen                | Moderate Value  | To Be Removed |