Arborist Report & Requirements

Submitted by Paul Dubois VII, ISA WE-9034A

3/3/2010
OF THE WOODS COMPLETE TREE CARE
Calistoga CA.

Highlands Christian Fellowship, new construction, AP# 11-360-30, Calistoga

(See Contractor for site map)

Arborist Report & Tree Protection Requirements

The tree protection plans described herein are designed to keep all protected trees on and around this building site healthy and alive during, and after, this project is completed.

Agreement & Notification

(A) It is recommended that all parties, (owner, architect, general contractor, and all subcontractors) receive a copy of the "Tree Protection Requirements".

(B) Tree protection requirements will be strictly followed by all persons or firms during project.

(C) It is understood that any violations will be mitigated prior to final permit sign off. (See part 7).

Part 1: Scope of Report

The site was inspected on March 3, 2010. This report is being submitted for *Paul Coates Construction* and only covers the construction area of the building site planed for the *Highlands Christian Fellowship* (AP# 11-360-30). My findings and recommendations are as follows.

Upon inspection of the proposed site there are four trees, numbered #1- #4 below, that have been identified as "protected trees" by Calistoga City ordinance. (See site plan) The trees will be marked on the site and are described as follows:

#1— 36" DBH (*Diameter Breast Height*), Valley Oak (*Quercus lobata*), located on the East side of project next to the highway (Calistoga Road) and next to tree #2. This tree stands in native compacted clay soil and grassland. There are no noticeable signs of chemical use or disking within the drip line. This tree has a canopy spread of approximately 70 feet and is approximately 60 feet at its tallest point. The tree's upper canopy has been affected by maintained pruning due to its proximity to high voltage lines. While one section of the tree has been pruned for maintenance, the other does not appear to have been pruned which has left it much fuller than the side under the lines. Because the tree over hangs the highway (Calistoga Rd) the root zone may be affected. On a scale of 1 to 10, the overall health and vigor of this tree would be 6.5 due in part to the effect of compaction of the root zone near the highway and the high-voltage maintenance pruning. Removal of this tree would greatly impact tree #2.

#2—32" DBH, Valley Oak (*Quercus lobata*), located on the East side of project next to the highway and next to tree #1. Tree #2 is closer to the highway by approximately 3 feet and the trunk shows signs of old damage from traffic collisions that it appears to have recovered from. Though the tree is partially under the high voltage lines, the maintenance pruning is much less significant than in tree #1. It has a canopy spread of approximately 70 feet and is the same height as tree #1. The majority of this canopy over hangs the highway, so I recommend pruning for weight reduction. Because this tree is closer to the highway the impact to the root zone is more significant than tree #1. Using the same scale from 1 to 10, this tree's overall heath is 6.5. Removal of this tree would impact tree #1.

#3—26', 24", 48" DBH, Multi-stemmed Big Leaf Maple, (*Acer macrophyllum*), located Southeast side of project, up the highway from trees #1 & #2. Tree #3 stands approximately 1.5 feet from the highway and under a utility pole. The tree is co-dominate and has a canopy spread of approximately 50 feet and is approximately 40 feet tall. The canopy appears thin and dead wood is apparent, most likely from utility pruning and the impact of the highway. The tree appears to have sustained damage on the trunk from traffic collisions and the tree has included bark between the stems indicating weak attachments. This tree should be considered for removal and replacement. Overall heath and vigor is 4.5.

#4 21" DBH Valley Oak, (*Quercus lobata*), located Southeast side of project, next to tree #3. Tree #4 is the smallest of all the trees, and is as close to the highway as tree #3. This tree stands approximately 30 feet and has a canopy spread of approximately 30 feet and over hangs the highway. This tree has also been pruned for utility lines. Overall health is 5, due in part to utility pruning and highway proximity.

Again, trees #1- #4 are located next to the highway and are under high voltage lines. Pruning for the high voltage line maintenance can cause severe wounds to the canopy scaffolding limbs that can lead to possible decay. The trees all stand in native California compacted clay soil and there are no signs of chemical spray or disking in root zones. Annual pruning for high voltage line maintenance is noticeable, however the canopy away from the power lines do not appear to have been pruned which has made the trees heavy. Dead wood is apparent and it is my recommendation that they be pruned for weight reduction and hazardous dead wood. The trees should have mulch spread under the canopy and mycorrhizial spores injected into the root systems.

RPZ's should be placed out side of all the drip lines of the trees canopy, other than the highway side

The trees outlined in this report are not to be disturbed or damaged in any manner (see part 3). If it is necessary to remove any tree (see part 5) or if any tree is damaged, its loss shall be mitigated. Mitigation and/or tree replacement shall be determined upon completion by the city of Calistoga prior to final approval and sign off of building permit (see part 7).

PART 2: DEFINITIONS

(A) **TREE**: A highly compartmented, perennial, woody, shedding plant that is usually tall, single stemmed, and long lived.

(B) **ARBORIST**: Any Arborist certified by the Western Chapter of the International Society of Arboriculture or the American Society of Consulting Arborists.

(C) **CONTRACTOR**: Person or Firm engaged in the business of building, constructing or consulting.

(D) **DISTURBANCE**: Any action witch is likely to damage or to produce a negative effect on the life, health, value, or attractiveness of a tree.

(E) **DRIP LINE**: The projection to the ground of the outer most edge of a trees canopy

(E) **PRUNING:** Removing of any tree part, living or dead.

(F) **DBH:** Diameter Breast Height, or 4.5 feet (1.5 meters) above the base of the tree.

(G) **REMOVAL:** Cutting to the ground, felling, complete extraction, destroying, or killing by root disturbance or any other means.

(H) **ROOTS:** An organ of a tree that serves to maintain mechanical support, and provide water and essential elements from the soil

(I) **ROOT PROTECTION ZONE (RPZ):** A circle around the trunk of a tree, the radius of witch is equal to the largest radius of the trees drip line plus or minus any percentage determined by location, size and species.

(J) **TEMPORARY PROTECTIVE FENCING:** An enclosure placed at the outer margin of the root protection zone of the tree, sufficient to warn and stop persons and/or equipment from entering.

(K) **MULCH**: Any beneficial material that covers and protects the soil without harming the tree or plant usually chipped tree parts.

(L) **MYCORRHIZIA**: A symbiotic, non-pathogenic, or weakly pathogenic association of fungi and the non-woody absorbing roots of trees and plants.

PART 3: REQUIREMENTS

(A) PROTECTED TREES.

Any tree designated by the property owner, law or Arborist as a protected tree. Tree designation and adequate space must be planned for during the design phase; it cannot wait until construction. Protected trees and RPZ's will be shown clearly on blueprint plans for all phases of construction including landscape. All contractors are responsible for maintaining RPZ's and following tree protection guidelines.

Prior to beginning of work, the contractors are required to meet with the Arborist at the site to review all work procedures, access routes, storage areas, and tree protection measures.

(B) TEMPORARY PROTECTIVE FENCING.

Before the start of any on site work, every protected tree within or immediately adjacent to the area of on site work, shall have installed around it a protective fencing (unless otherwise specified, chain link). The fencing shall be installed by or under the supervision of the Arborist, at a location determined by the Arborist to protect the tree as well as allowing the contractor to complete his/her work. It shall be properly maintained and remain in place for the duration of the work. Wood chip mulch will be included and maintained within the tree protection zones.

PART 4: RESTRICTIONS

(A) No persons shall enter Root Protection Zone (RPZ) without permission from the Arborist. Any persons entering the RPZ must first give 48 hours prior notice to the Arborist.

(B) When any work is being done within the RPZ the Arborist or his/her representative shall be present.

(C) Any disturbances including, but not limited to, the following that may harm a protected tree are **STRICTLY PROHIBITED** within the root protection zone of the tree:

1. Removal of protected tree.
2. Removal or relocation of temporary fencing prior to completion of work.
3. Parking or use of vehicles, equipment, or other devices that might compact or harm the soil
4. Storage or use of construction materials or tools, including soils and sands.
5. Storage or use of chemicals.
6. Pruning. See part (5.0)
7. Trenching, grading, cutting, filling, compacting or changing the natural grade in any way.
8. Attaching signs, posters, wires, or any device of any sort to any part of a tree.
9. Chemical toilets.
10. Cleaning or washing any tools or equipment

PART 5: PRUNING, TRENCHING, AND REMOVING TREES

(A) All pruning and removal of any tree necessary for contractor to complete work shall be done by or under the supervision of the Arborist.

(B) Trenching within the RP.Z will be done under the supervision of the Arborist or his/her representative. Roots under 2" in diameter will be pruned to the edge of the trench on both sides, and the final cut shall be free of shattered material. Roots over 2" in diameter will be tunneled under or bridged over and left un-damaged.

PART 6: ENFORCEMENT

(A) The property owner or City representative shall enforce the provisions of these specifications in response to the Arborist's reports of violations. Should any protected tree be disturbed, damaged or destroyed or removed without authorization, the Arborist may issue a stop work order. The order will remain in affect until satisfactory mitigations have been completed.

(B) If any protected tree is damaged, disturbed or removed without authorization as a result of on site work, and if such a tree cannot be preserved in a healthy state, it's loss shall be mitigated.

PART 7: MITIGATION

Satisfactory mitigation shall consist of but not limited to the following:

(A) Replacement, restoration, or monetary reimbursement equal to the cost of repair or replacement, including the cost of removal of the dead or damaged tree.

(B) Mitigation shall be completed and approved by the project Arborist, and the property
owner or agent prior to finial project completion and sign off, and payment to contractor.

(C) The value of removed or damaged trees shall be as determined by the use of the methods described within the manual entitled "GUIDE FOR ESTABLISHING VALUES OF TREES AND OTHER PLANTS" published by the International Society of Arboriculture.

(D) All new trees shall be planted on the property described in Part 1, or on an approved site.

(E) All new tree planting shall be done in accordance with standards set by the International Society of Arboriculture.

(E) All new trees shall be considered "protected trees", and will be maintained and cannot be removed or disturbed.