



2/11/2025

Hattie Yu  
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Re: Tree protection for proposed Alteration + Addition + ADU at 5 Callado Way, Atherton, CA 94027

Dear Hattie,

At your request, we have visited the property referenced above to evaluate the trees present with respect to the proposed project. This report contains our analysis.

## **Summary**

The client reports that one tree has been identified for protection by City of Atherton staff: a coast redwood located between the existing house and pool house. It is in reasonably good condition and should be preserved as detailed in the Recommendations, below. Less than 5% of the tree's TPZ<sup>1</sup> will likely be impacted by the project as proposed. With proper protection, it is expected to survive and thrive during and after construction, according to its existing condition.

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<sup>1</sup> Tree protection zone, defined in the Discussion section, below

## Assignment and Limits of Report

We have been asked to write a report detailing impacts to trees from the proposed Alteration + Addition + ADU on this property. This report may be used by our client and others involved in the project as needed to inform all stages of the project.

All observations were made from the ground with basic hand tools. No root collar excavations or aerial inspections were performed. No project features had been staked at the time of our site visit.

## Tree Regulations

This report addresses tree protection needs as required by the Town of Atherton. Tree protection measures will be consistent with the Heritage Tree Preservation Standards and Specifications, available here:

<https://www.ci.atherton.ca.us/DocumentCenter/View/7516/HTO-Standards-and-Specs-2021-REV?bidId=>

Per the client's instructions to us, this report addresses only the one coast redwood identified for protection. We did not evaluate any other trees on the property for protected status, potential construction impacts, or overall condition.

## Observations

### *Trees*

One tree was evaluated: a coast redwood (*Sequoia sempervirens*) located between the existing house and pool house (Image 1). Other trees are present on the property, but we did not evaluate them.

Protected status - tree #1 is a Heritage Tree.

Condition - tree #1 is in good health, with good branching structure and form.

### *Current Site Conditions*

A single-family home is currently present on the property. The driveway and other hardscape appear typical, as do the utilities and property line fences.

GRADE - the property is reasonably flat, with no major grade changes.

STRUCTURES - in addition to the main house, an existing pool house is present in the back yard.

HARDSCAPE - a pool is present in the back yard.

LANDSCAPING - the existing landscaping is a typical mix of lawn and planter beds, all irrigated.

### *Project Features*

DEMOLITION - the rear walls of the existing house that are adjacent to the proposed alterations/additions will be demolished. Some existing backyard hardscape will be demolished. The staging location for the debris box for demolition is in the driveway.

BUILDINGS - the proposed ADU is in the back yard, at the northeast corner of the property. The proposed alterations/additions to the main house are all in the back yard, and no work is proposed in the front yard.

HARDSCAPE - no proposed hardscape is shown on the plans provided to us. It appears that a walkway and landing will be necessary on the southwest and northwest sides of the ADU for the entrances.

GRADING - no grading is shown on the plans provided to us. Because the site is flat, substantial grading does not appear likely.

DRAINAGE - no drainage is shown on the plans provided to us. New drainage will be needed for the ADU, and possibly for the house additions.

UTILITIES - no utility work is shown on the plans provided to us. The utility ROWs for gas, water, and electrical are at the southwest corner of the property, with service lines running to the front southwest corner of the existing house. It appears logical for ADU utility service to tie into these lines.

FENCES - no fencing work is shown on the plans provided to us. Existing fences are shown to remain, and no additional fencing appears necessary.

LANDSCAPING/IRRIGATION - no landscaping/irrigation work is shown on the plans provided to us. As the landscape is established and does not appear to have any notable problems, substantial landscaping/irrigation work appears unlikely.

ACCESS ROUTES - the most logical access route to the back of the property where the work will occur

### *Potential Conflicts*

Part of the proposed addition to the northwest corner of the existing house lies within the TPZ<sup>2</sup> of tree #1, as does necessary construction access to it. The proposed addition occupies about 1% of the TPZ, estimated visually. The total percentage of the TPZ impacted by both the addition and construction access thereto is about 5%, also estimated visually.

## **Testing and Analysis**

Tree DBHs<sup>3</sup> were taken using a diameter tape measure if trunks were accessible. Multitemmed trees were measured below the point where the leaders diverge, if possible. The DBHs of trees with non-accessible trunks were estimated visually. All trees over four inches in DBH were inventoried, as well as street trees of all sizes. Vigor ratings are based on tree appearance and our experiential knowledge of each species' healthy appearance.

Tree location data were collected using a GPS smartphone application and processed in Quantum GIS (QGIS) to create the maps included in this report. Due to the error inherent in GPS data collection, and due also to differences between GPS data and CAD drawings, tree locations and all dimensions shown on the Tree Map are approximate. The percentages of TPZs impacted by project features were calculated in QGIS but should be considered approximate due to potential error in tree locations or feature locations.

Data were collected by Vanessa Ruiz-Fielding, ISA Certified Arborist WE-15299A <sup>▼</sup>, with basic hand tools (such as, but not limited to: hand hoe; hatchet; rubber mallet; measuring tape; etc.) at one site visit on 12/18/2024. All observations and photographs in this report were taken at that site visit.

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<sup>2</sup> Tree protection zones. See Discussion, Tree Map, and Tree Table for more detail.

<sup>3</sup> diameter at breast height (4.5 feet above grade), a standard arboricultural measurement

The tree protection analysis in this report is based on the following document(s), provided to us electronically by the project team:

- Sheets from the plan set titled “Alteration + Addition + ADU: Yu Residence”
  - A1.0, site plan (proposed), dated 12/2/2024
  - A2.1, floor plan: proposed, dated 12/2/2024

## **Discussion**

### *Tree Protection Zones (TPZs)*

Tree roots grow where conditions are favorable, and their spatial arrangement is, therefore, unpredictable. Favorable conditions vary among species, but generally include the presence of moisture, and soft soil texture with low compaction.

Contrary to popular belief, roots of all tree species grow primarily in the top two to three feet or less of soil in the clay soils typical for this geographic region, with roots occasionally occurring at greater depths when soil conditions allow. Some species have taproots when young, but these almost universally disappear with age. At maturity, a tree’s root system may extend out from the trunk farther than the tree is tall, and the tree maintains its upright position in much the same manner as a wine glass.

The optimal area around a tree that should be protected from disturbance depends on the tree’s trunk diameter, species, and vigor, as shown in the following table (adapted from *Trees & Construction*, Matheny and Clark, 1998):

<b>Species tolerance</b>	<b>Tree vitality<sup>4</sup></b>	<b>Distance from trunk (feet per inch trunk diameter)</b>
Good	High	0.5
	Moderate	0.75
	Low	1
Moderate	High	0.75
	Moderate	1
	Low	1.25
Poor	High	1
	Moderate	1.25
	Low	1.5

It is important to note that some roots will almost certainly be present outside the TPZ; however, root loss outside the TPZ is unlikely to cause tree decline.

#### *Critical Root Zones (CRZs)*

Although root loss inside the tree protection zone (TPZ) may cause a short-term decline in tree condition, trees can often recover adequately from limited disturbance in this area.

Tree stability is impacted at a shorter distance from the tree trunk. For linear cuts on one side of the tree, the minimum distance typically recommended is three times the DBH, measured from the edge of the trunk (*Best Management Practices: Root Management*, Costello, Watson, and Smiley, 2017). This is called the critical root zone, as substantial root loss closer than this increases a tree's likelihood of failure.

Note that trees sometimes have asymmetrical root systems, and if no substantial roots are present in a given area, impacts on the tree will be minimal to minor regardless of distance from the trunk.

#### *Tree Appraisal Methods*

We use the trunk formula technique with depreciation for condition and functional and external limitations, as detailed in the second printing of the 10th Edition of the *Guide for Plant Appraisal* (Council of Tree and Landscape Appraisers, 2019).

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<sup>4</sup> Matheny & Clark uses tree age, but we feel a tree's vitality more accurately reflects its ability to handle stress.

Once the basic value and the depreciation percentages have been determined, the following equation yields the appraised value:

$$\$(appraised\ value) = \$(basic\ value) \times (tree\ condition)\% \times (functional\ limitations)\% \times (external\ limitations)\%$$

For palms, we use the approximate height of clear trunk<sup>5</sup> (estimated visually) multiplied by the per-foot cost given in the Regional Plant Appraisal Committee Species Classification for California.

## Conclusions<sup>6</sup>

**Minor** impacts to redwood #1 are expected from the proposed house addition at the northwest corner of the existing house, and from necessary construction access thereto.

## Recommendations<sup>7,8</sup>

### *Preconstruction Phase*

1. Install tree protection fencing for the remaining trees approximately as shown in the Tree Map, below.
  - a. Minimum distances from trunk centers are given on the Tree Map. A larger area may be protected if desired.
  - b. All Heritage trees to be preserved shall be protected with 6-foot-high, minimum 12-gauge chain link fence. Fences are to be mounted on 2-inch diameter galvanized iron posts, driven into the ground to a depth of at least 2-feet at no more than 10-foot spacing (See detail, Appendix I). This detail shall appear on grading, demolition and building permit plans.
  - c. Heritage Tree fencing shall be erected before any demolition, grading or construction begins and remain in place until the Town Arborist approves its removal.

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<sup>5</sup> "clear trunk" refers to the portion of the trunk with no live fronds (even if dead fronds are present)

<sup>6</sup> All conclusions assume the tree protection measures recommended in this report. Without proper tree protection measures, any tree could be damaged.

<sup>7</sup> All recommendations are driven by the requirements of the jurisdiction in which the property is located, and by industry best practices.

<sup>8</sup> **Bolded items are emphasized only because in my experience they are tend to be overlooked.**

- d. Warning signs shall be prominently displayed on each fence side so that they are clearly visible.
  - e. A 4"-6" layer of coarse mulch or wood chips shall be placed beneath the TPZs of the protected Heritage trees. Mulch is to be kept 12" from the trunk.
  - f. Activities prohibited within the TPZ:
    - i. Storage or parking vehicles, building materials, refuse, excavated spoils or dumping of poisonous materials, including but not limited to, paint, petroleum products, concrete, stucco mix, dirty water, swimming pool and/or spa water, trailer, container boxes, clean up areas, debris boxes, building materials, trenching, grade changes, tree houses, and Soil Compaction.
    - ii. The use of tree trunks as a winch support, anchorage, as a temporary power pole, signposts or other similar function.
    - iii. Cutting of tree roots by utility Trenching, foundation digging, placement of curbs and trenches and other miscellaneous excavation.
    - iv. Landscaping and irrigation improvements, unless approved in accordance with Section 2.2.D below.
    - v. Soil disturbance, Soil Compaction or grade changes.
    - vi. Drainage changes, including swimming pool, spa, and/or water features discharge.
    - vii. Any other activities which cause Disturbance and/or Damage to Heritage trees as defined in Section 1.9 and or as specified in Atherton Municipal Code Section 8.10.020.
  - g. Tree protection fencing shall adhere to the requirements in the document titled "Town of Atherton: Heritage Tree Preservation Standards and Specifications," available at <https://www.ci.atherton.ca.us/DocumentCenter/View/7516/HTO-Standards-and-Specs-2021-REV?bidId=>
    - i. Note that the provisions in this document are important for all stakeholders to be aware of. Only selected sections have been included in this report.
2. Notify the Project Arborist when tree protection fencing has been installed.

### *Construction Phase*

- 1. Maintain tree protection fencing as detailed above.

2. Excavation for portion of proposed house addition foundation within the TPZ of redwood #1:
  - a. Hand-excavate nearest edge within tree protection zone to the full depth of the feature being installed.
  - b. Retain as many roots as practical.
  - c. If roots 1-2" in diameter must be cut, sever them cleanly with a sharp saw or bypass pruners.
  - d. If roots over 2" in diameter must be cut, stop work in that area and notify the Project Arborist. Onsite personnel are encouraged to text the Project Arborist at (408) 201-9607.
    - i. A letter from the Project Arborist to the City of Atherton will be required, which will include mitigation measures.
  - e. If excavation will be left open for more than 3 days:
    - i. Cover excavation wall nearest tree with several layers of burlap or other absorbent fabric.
    - ii. Install a timer and soaker hoses to irrigate with potable water twice per day, enough to wet fabric thoroughly.
3. Any Disturbance and/or Damage or Injury to Heritage trees, whether accidental or otherwise, as verified by the Town Arborist, shall be reported within 6-hours to the Project Arborist and Town Arborist so that mitigation can take place. An Arborist Report shall be required and shall include, but not be limited to, the Disturbance and/or Damage that occurred and identified mitigation. All Injury to branches, trunk or to roots over 2-inches in diameter shall be reported in the Monthly Inspection Report. Any Trenching work 10 x the diameter of the Heritage tree is required to be reported in the monthly arborist report.

#### *Post-Construction Phase*

1. Provide supplemental irrigation for tree #1 to aid in root regrowth for at least two years.
  - a. Irrigate as much of the TPZ as practical at a very slow trickle for several hours to ensure infiltration. Once per month is usually sufficient.
    - i. For trees located on neighboring properties, only the portion of the TPZ on this property shall be irrigated.
  - b. Irrigation should be paused during the rainy season if rainfall is average or above.

### **Additional Materials Submitted as Separate Documents**

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1. 5 Callado Tree Map
2. 5 Callado Tree Photographs
3. 5 Callado Tree Table

Respectfully submitted,



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