Tree Inventory, Assessment, and Protection Report

16940 Roberts Road
Los Gatos, CA 95032

Prepared for:

Town of Los Gatos

October 10, 2019

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Summary

The plans indicate the entire site will be demolished and new residences are to be constructed. Six trees originate on the adjacent sites. Twelve trees are in good condition and eight fair with five of the trees in good shape originating on the adjacent site. Five trees have fair suitability, nine poor, and six originate on the adjacent site and their suitability is not relevant. All fourteen trees originating on the site will be highly impacted and caused to be removed. Two trees going on the adjacent site #378 and #379 will be moderate to highly impacted by the construction driveway ingress/egress. The remaining trees originating on the adjacent property will not be affected. Because all fourteen trees will be removed there will be required replacements. Tree protection for this project will focus on avoiding soil impacts in the property setback. A total of 20 trees were appraised for a rounded depreciated value of $67,010.00 using the Trunk Formula Method.

Introduction

Background

The Town of Los Gatos asked me to assess the site, trees, and proposed footprint plan, and to provide a report with my findings and recommendations to help satisfy planning requirements.

Assignment

- Provide an arborist's report including an assessment of the trees within the project area and on the adjacent sites. The assessment is to include the species, size (trunk diameter), condition (health, structure, and form), and suitability for preservation ratings. Affix aluminum number tags on the trees for reference on site and on plans.
- Provide tree protection specifications, guidelines, and impact ratings for those affected by the project.
- Provide appraised values using the Cost Approach and Trunk Formula Method.

Limits of the assignment

- The information in this report is limited to the condition of the trees during my inspection on July 19, 2019. No tree risk assessments were performed.
- Tree heights and canopy diameters are estimates.
- The most recent Guide to Plant Appraisal, Tenth Edition was published in late 2018 by the ISA. The Guide is not functional at this time due to significant errors in the original printed version and gaps in information regarding regional species characteristics and nursery stock wholesale costs. Therefore the ninth edition and its supplemental publications was used for this assignment with the exception of the "condition ratings" assessment.

- The plans reviewed for this assignment were as follows (Table 1)

Table 1: Plans Reviewed Checklist

Plan	Date	Sheet	Reviewed	Source
Existing Site Topographic				
Proposed Site Plan	05/15/19	A0	Yes	Josephine Chang Architect
Demolition Plan				
Erosion Control	May 2019	C2	Yes	Westfall Engineers
Grading and Drainage	May 2020	C1	Yes	Westfall Engineers
Utility Plan and Hook-up locations				
Exterior Elevations				
Landscape Plan	05/15/19	L1	Yes	Josephine Chang Architect
Irrigation Plan				
T-1 Tree Protection Plan				

Purpose and use of the report

The report is intended to identify all the trees within the plan area that could be affected by a project. The report is to be used by the Town of Los Gatos and the property owners as a reference for existing tree conditions to help satisfy planning requirements.

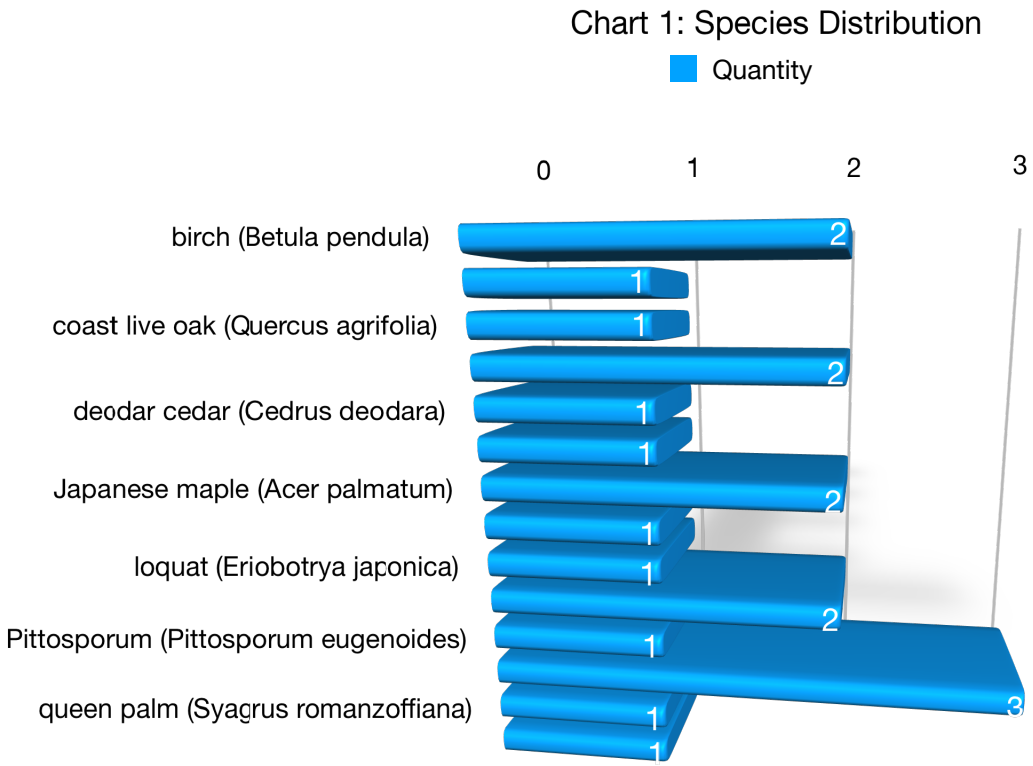
Observations

Tree Inventory

The inventory consists of trees protected by the Town of Los Gatos located on site and those in close proximity on neighboring properties. Sec. 29.10.0960. - Scope of protected trees. All trees which have a four-inch or greater diameter (twelve and one half-inch circumference) of any trunk, when removal relates to any review for which zoning approval or subdivision approval is required. (Appendix A and B). Los Gatos Town Ordinance 29.10.0970 Exceptions (1) states the following: “A fruit or nut tree that is less than eighteen (18) inches in diameter (fifty-seven-inch circumference).

The plans indicate the entire existing structures will be demolished and new residences are to be constructed. No features are to remain on the site including the existing trees.

The inventory contains 20 trees comprised of 14 different species. One oak is considered Large Protected[1] and none are Exempt[2]. The chart below list the species and their relative quantities (Chart 1).



[1] Large protected tree means any oak (*Quercus spp.*), California buckeye (*Aesculus californica*), or Pacific madrone (*Arbutus menziesii*) which has a 24-inch or greater diameter (75-inch circumference); or any other species of tree with a 48-inch or greater diameter (150-inch circumference).

[2] A fruit or nut tree that is less than eighteen (18) inches in diameter (fifty-seven-inch circumference).

Analysis

Tree appraisal was performed according to the Council of Tree & Landscape Appraisers *Guide for Plant Appraisal 9th Edition, 2000* (CLTA) along with Western Chapter International Society of Arboriculture *Species Classification and Group Assignment, 2004*. The trees were appraised using the "Cost Approach" and more specifically the "Trunk Formula Method" (Appendix B).

"Trunk Formula Method" is calculated as follows: Basic Tree Cost = (Appraised tree trunk increase X Unit tree cost + Installed tree cost) Appraised Value = (Basic tree cost X Species % X Condition % X Location %).

The trunk formula valuations are based on four tree factors; species, size (trunk cross sectional area), condition, and location. There are two steps to determine the overall value. The first step is to determine the "Basic Tree Cost" based on size and species rating which is determined by the *Species Classification and Group Assignment, 2004 Western Chapter Regional Supplement*.

The second part is to depreciate the value according to the location and condition of the trees.

The condition assessment and percentages are defined in the "Condition Rating" section of this report. The condition ratings deviate from the Guide's condition assessment numerical rating system. The reason for this deviation is the Guide's assessment criteria fails to account for significant health or structural issues creating high percentages for tree with either significant structural defects or health problems that could ultimately lead to failure or irreversible decline.

Location rating is an average of three factors; site, contribution, and placement. Site is determined by the relative property value where the trees are planted. The residential site would be classified as "very high" value with a 90 percent rating compared to similar sites in the area (ISA, 2000).

Contribution and placement is determined by the function and aesthetics the trees provide for the site and their location on the property. The percent of contribution and placement can range from 10 to 100 percent depending on the trees influence to the value of the property. These percentages ranged from 0 to 90 percent in my assessment.

A total of 20 trees were appraised for a rounded depreciated value of $67,010.00 using the Trunk Formula Method (Appendix B). Six trees originate on the adjacent sites.

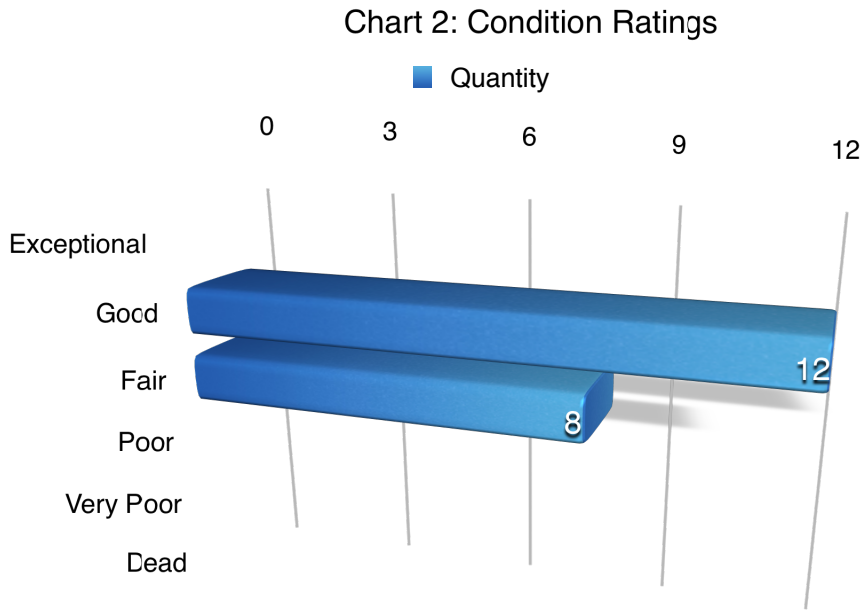
Discussion

Condition Rating

A tree's condition is a determination of its overall health, structure, and form. The assessment considered all three criteria for a combined condition rating.

- 100% - Exceptional = Good health and structure with significant size, location or quality.
- 61-80% - Good = Normal vigor, well-developed structure, function and aesthetics not compromised with good longevity for the site.
- 41-60 % - Fair = Reduced vigor, damage, dieback, or pest problems, at least one significant structural problem or multiple moderate defects requiring treatment. Major asymmetry or deviation from the species normal habit, function and aesthetics compromised.
- 21-40% - Poor = Unhealthy and declining appearance with poor vigor, abnormal foliar color, size or density with potential irreversible decline. One serious structural defect or multiple significant defects that cannot be corrected and failure may occur at any time. Significant asymmetry and compromised aesthetics and intended use.
- 6-20% - Very Poor = Poor vigor and dying with little foliage in irreversible decline. Severe defects with the likelihood of failure being probable or imminent. Aesthetically poor with little or no function in the landscape.
- 0-5% - Dead/Unstable = Dead or imminently ready to fail.

Twelve trees are in good condition and eight fair (Chart 2). Five of the trees in good shape originate on the adjacent site.



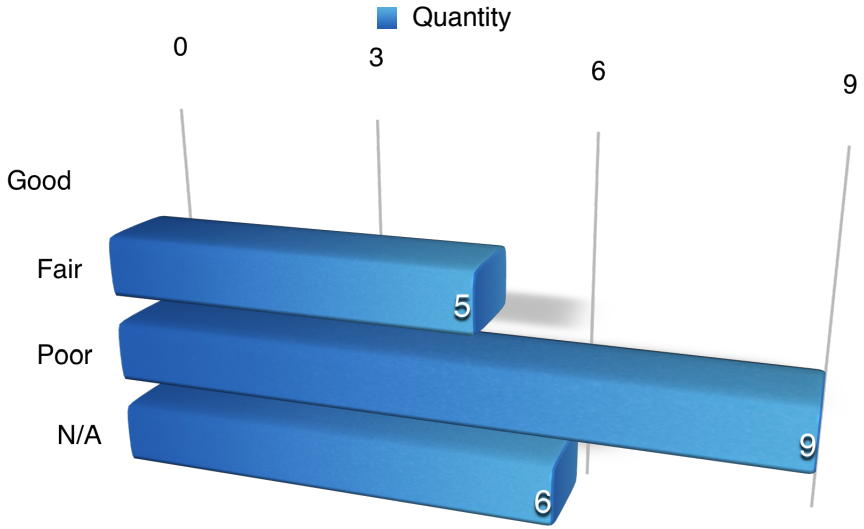
Suitability for Conservation

A tree's suitability for conservation is determined based on its health, structure, age, species and disturbance tolerances, proximity to cutting and filling, proximity to construction or demolition, and potential longevity using a scale of good, fair, or poor (Fite, K, and Smiley, E. T., 2016). Trees with good suitability have good vigor, structural stability, and potential longevity after construction.

- Good = Trees with good health, structural stability and longevity.
- Fair = Trees with fair health and/or structural defects that may be mitigated through treatment. These trees require more intense management and monitoring, and may have shorter life spans than those in the good category.
- Poor = Trees in poor health with significant structural defects that cannot be mitigated and will continue to decline regardless of treatment. The species or individual may possess characteristics that are incompatible or undesirable in landscape settings or unsuited for the intended use of the site.

Five trees have fair suitability, nine poor, and six originate on the adjacent site and their suitability is not relevant (Chart 3).

Chart 3: Suitability for Preservation

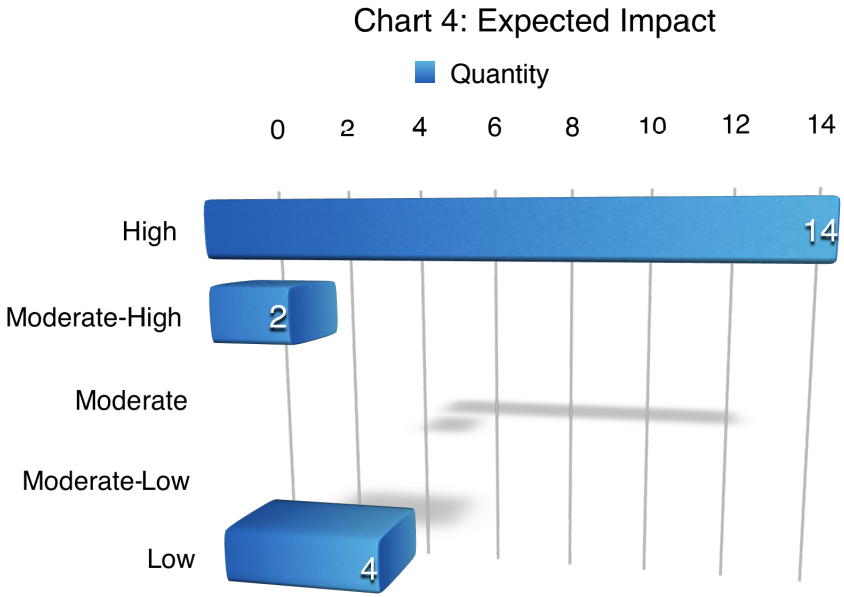


Expected Impact Level

Impact level defines how a tree may be affected by construction activity and proximity to the tree, and is described as low, moderate, or high. The following scale defines the impact rating:

- Low = The construction activity will have little influence on the tree.
- Moderate = The construction may cause future health or structural problems, and steps must be taken to protect the tree to reduce future problems.
- High = Tree structure and health will be compromised and removal is recommended, or other actions must be taken for the tree to remain. The tree is located in the building envelope.

All fourteen trees originating on the site will be highly impacted and caused to be removed. Two trees going on the adjacent site #378 and #379 will be moderate to highly impacted by the construction driveway ingress/egress. The remixing trees originating on the adjacent property will not be affected (Chart 4).



Mitigation for Removals

The table below indicates the recommended replacement values (Table 3). Alternatively it may be possible to create an approved landscape plan or provide an in-lieu payment.

Table 3: Town of Los Gatos Tree Canopy - Replacement Standard

Canopy Size of Removed Tree (1)	Replacement Requirement (2)(4)	Single Family Residential Replacement Option (3)(4)
10 feet or less	Two 24 inch box trees	Two 15 gallon trees
More than 10 feet to 25 feet	Three 24 inch box trees	Three 15 gallon trees
More than 25 feet to 40 feet	Four 24 inch box trees or two 36 inch box trees	Four 15 gallon trees
More than 40 feet to 55 feet	Six 24 inch box trees; or three 36 inch box trees	Not available
Greater than 55 feet	Ten 24 inch box trees; or five 36 inch box trees	Not available

[1]To measure an asymmetrical canopy of a tree, the widest measurement shall be used to determine canopy size.

[2]Often, it is not possible to replace a single large, older tree with an equivalent tree(s). In this case, the tree may be replaced with a combination of both the Tree Canopy Replacement Standard and in-lieu payment in an amount set forth by Town Council resolution paid to the Town Tree Replacement Fund.

[3]Single Family Residential Replacement Option is available for developed single family residential lots under 10,000 square feet that are not subject to the Town's Hillside Development Standards and Guidelines. All 15-gallon trees must be planted on-site. Any in-lieu fees for single family residential shall be based on 24" box tree rates as adopted by Town Council.

[4]Replacement Trees shall be approved by the Town Arborist and shall be of a species suited to the available planting location, proximity to structures, overhead clearances, soil type, compatibility with surrounding canopy and other relevant factors. Replacement with native species shall be strongly encouraged. Replacement requirements in the Hillsides shall comply with the Hillside Development Standards and Guidelines Appendix A and Section 29.10.0987 Special Provisions—Hillsides.

Because all fourteen trees will be removed there will be required replacements.

Tree Protection

Typically there are three different tree protection schemes which are called Type I, Type II and Type III trunk protection only. Tree protection focuses on avoiding damage to the roots, trunk, or scaffold branches (Appendix D). The most current accepted method for determining the TPZ is to use a formula based on species tolerance, tree age/vigor, and trunk diameter (Matheny, N. and Clark, J. 1998) (Fite, K, and Smiley, E. T., 2016). Preventing mechanical damage to the trunk from equipment or hand tools can be accomplished by wrapping the main stem with straw wattle or using vertical timbers (Appendix D).

Both the ISA *Best Management Practices: Root Management*, 2017 and ISA *Best Management Practices: Managing trees during construction, second edition*, 2016 indicate linear cuts should be beyond six times the trunk diameter distance when affected on only one side.

Tree protection for this project will focus on avoiding soil impacts in the property setback. It may be necessary to prune the coast live oak 395.

Conclusion

The plans indicate the entire existing structures will be demolished and new residences are to be constructed. Six trees originate on the adjacent sites. Twelve trees are in good condition and eight fair with five of the trees in good shape originating on the adjacent site. Five trees have fair suitability, nine poor, and six originate on the adjacent site and their suitability is not relevant. All fourteen trees originating on the site will be highly impacted and caused to be removed. Two trees going on the adjacent site #378 and #379 will be moderate to highly impacted by the construction driveway ingress/egress. The remaining trees originating on the adjacent property will not be affected. Because all fourteen trees will be removed there will be required replacements. Tree protection for this project will focus on avoiding soil impacts in the property setback. Tree protection for this project will focus on avoiding soil impacts in the property setback. A total of 20 trees were appraised for a rounded depreciated value of $67,010.00 using the Trunk Formula Method.

Recommendations

Pre-construction and Planning Phase

1. Place tree numbers and tree protection fence locations and guidelines on the plans including the grading, drainage, and utility plans. Create a separate plan sheet that includes all protection measures labeled "T-1 Tree Protection Plan."

2. Place tree protection fence in the setback near the adjacent trees at a radial distance of 6 to 12 times the trunk diameter distances (Table 2).

Table 2: Tree Protection Radii

Tree Species	Number	Trunk Diameter (in.)	6 x DBH (ft.)	8 x DBH (ft.)	12 x DBH (ft.)
coast redwood (*Sequoia sempervirens*)	381	20	10	13	20
coast redwood (*Sequoia sempervirens*)	382	20	10	13	20
Pittosporum (*Pittosporum eugenoides*)	386	8, 8	5	6	9
coast live oak (*Quercus agrifolia*)	395	40	20	27	40
deodar cedar (*Cedrus deodara*)	378	39	20	26	39
incense cedar (*Calocedrus decurrens*)	379	28	14	19	28

3. Provide a landscape plan that accounts for the loss in tree canopy to include in tabular form the required replacements in accordance with the Town's Tree Canopy Replacement Standard.

4. All tree maintenance and care shall be performed by a qualified arborist with a C-61/D-49 California Contractors License. Tree maintenance and care shall be specified in writing according to American National Standard for Tree Care Operations: *Tree, Shrub and Other Woody Plant Management: Standard Practices* parts 1 through 10 and adhere to ANSI Z133.1 safety standards and local regulations. All maintenance is to be performed according to ISA Best Management Practices.

5. Refer to Appendix D for general tree protection guidelines including recommendations for arborist assistance while working under trees, trenching, or excavation within a trees drip line or designated TPZ/CRZ.

6. Provide a copy of this report to all contractors and project managers, including the architect, civil engineer, and landscape designer or architect. It is the responsibility of the owner to ensure all parties are familiar with this document.

7. Arrange a pre-construction meeting with the project arborist or landscape architect to verify tree protection is in place, with the correct materials, and at the proper distances.

Driveway Construction

Both the construction and permanent driveway near Unit 1 is close to the property boundary and adjacent to #378 and #379. For the construction driveway the contractor could place steel road plate over the soil surface on top of 6 inches of wood chips or use railroad ties as a bridge, and then place any erosion control material on top of that to avoid unnecessary compaction.

The final driveway appears to be concrete. The design needs to minimize soil excavation and compaction as best as possible.

The first priority for the driveway construction is to adopt a no dig policy and incorporate a design plan that will minimize soil compaction and root disturbances under the trees. Use the thinest material possible to achieve structural compliance and use porous material that allows for water infiltration under the surface if possible. Adjust the finished grade to be above the natural grade without digging for a sub-grade treatment. In this instance the pavement will be higher up and edge treatments or curbing also need to be constructed above grade. Use paving material that does not rely on the strength of a compacted sub-base for strength. This may be accomplished by reinforcing the surface layer material like monolithic concrete slabs or reinforced concrete. Place geotextile fabric at the bottom of the sub-base to reduce displacement into the parent soil along with a reduction in compaction requirements. Use biaxial Tensar BX-1100 or equivalent to manufacturer specifications on grade.

There are other options for the driveway under the existing trees which include open form pavers such as Grasspave®, Grass-cel®, or other porous paving grids. These can be placed on grade within the TPZ or CRZ allowing water and air to move to the native soil reducing compaction and the need for sub-base treatments.

Bibliography

American National Standard for Tree Care Operations: Tree, Shrub and Other Woody Plant Management : Standard Practices (Management of Trees and Shrubs During Site Planning, Site Development, and Construction)(Part 5). Londonderry, NH: Secretariat, Tree Care Industry Association, 2012. Print.

Costello, Laurence Raleigh, Bruce W. Hagen, and Katherine S. Jones. *Oaks in the urban landscape: selection, care, and preservation*. Oakland, CA: University of California, Agriculture and Natural Resources, 2011. Print.

Fite, Kelby, and Edgar Thomas. Smiley. *Managing trees during construction*, second edition. Champaign, IL: International Society of Arboriculture, 2016.

ISA. *Guide For Plant Appraisal 9th Edition*. Savoy, IL: International Society of Arboriculture, 2000. Print.

ISA. *Guide For Plant Appraisal 10th Edition*. Savoy, IL: International Society of Arboriculture, 2018. Print.

ISA. Species Classification and Group Assignment, 2004 Western Chapter Regional Supplement. Western Chapter ISA

Matheny, Nelda P., Clark, James R. Trees and development: A technical guide to preservation of trees during land development. Bedminster, PA: International Society of Arboriculture1998.

Smiley, E, Matheny, N, Lilly, S, ISA. *Best Management Practices: Tree Risk Assessment:* International Society of Arboriculture, 2017. Print

Glossary of Terms

Basic Tree Cost: The cost of replacement for a perfect specimen of a particular species and cross sectional area prior to location and condition depreciation.

Cost Approach: An indication of value by adding the land value to the depreciated value of improvements.

Defect: An imperfection, weakness, or lack of something necessary. In trees defects are injuries, growth patterns, decay, or other conditions that reduce the tree's structural strength.

Diameter at breast height (DBH): Measures at 1.4 meters (4.5 feet) above ground in the United States, Australia (arboriculture), New Zealand, and when using the Guide for Plant Appraisal, 9th edition; at 1.3 meters (4.3 feet) above ground in Australia (forestry), Canada, the European Union, and in UK forestry; and at 1.5 meters (5 feet) above ground in UK arboriculture.

Drip Line: Imaginary line defined by the branch spread or a single plant or group of plants. The outer extent of the tree crown.

Form: describes a plant's habit, shape or silhouette defined by its genetics, environment, or management.

Health: Assessment is based on the overall appearance of the tree, its leaf and twig growth, and the presence and severity of insects or disease.

Mechanical damage: Physical damage caused by outside forces such as cutting, chopping or any mechanized device that may strike the tree trunk, roots or branches.

Scaffold branches: Permanent or structural branches that for the scaffold architecture or structure of a tree.

Straw wattle: also known as straw worms, bio-logs, straw noodles, or straw tubes are man made cylinders of compressed, weed free straw (wheat or rice), 8 to 12 inches in diameter and 20 to 25 feet long. They are encased in jute, nylon, or other photo degradable materials,
and have an average weight of 35 pounds.

Structural evaluation: focused on the crown, trunk, trunk flare, above ground roots and the site conditions contributing to conditions and/or defects that may contribute to failure.

Tree Protection Zone (TPZ): Defined area within which certain activities are prohibited or restricted to prevent or minimize potential injury to designated trees, especially during construction or development.

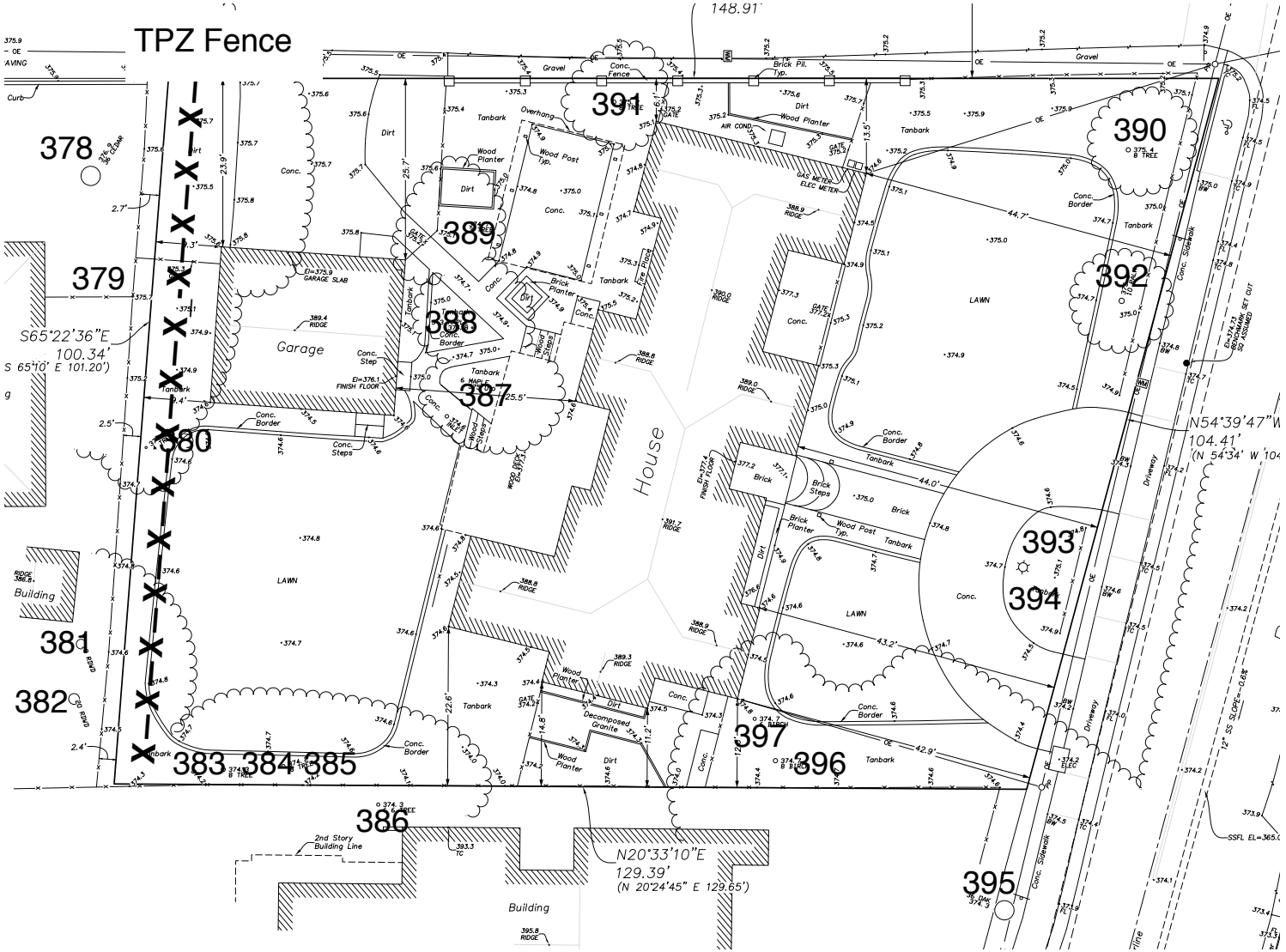
Tree Risk Assessment: Process of evaluating what unexpected things could happen, how likely it is, and what the likely outcomes are. In tree management, the systematic process to determine the level of risk posed by a tree, tree part, or group of trees.

Trunk: Stem of a tree.

Trunk Formula Method: Method to appraise the monetary value of trees considered too large to be replaced with nursery or field grown stock. Based on developing a representative unit cost for replacement with the same or comparable species of the same size and in the same place, subject to depreciation for various factors. Contrast with replacement cost method.

Volunteer: A tree, not planted by human hands, that begins to grow on residential or commercial property. Unlike trees that are brought in and installed on property, volunteer trees usually spring up on their own from seeds placed onto the ground by natural causes or accidental transport by people. Normally, volunteer trees are considered weeds and removed, but many desirable and attractive specimens have gone on to become permanent residents on many public and private grounds.

Appendix A: Tree Inventory Map and Site Plan



Appendix B: Tree Inventory and Assessment Tables

Table 3: Tree Inventory and Assessment Summary

Tree Species	Number	Trunk Diameter (in.)	~ Height (ft.)	~ Canopy Diameter (ft.)	Condition	Suitability	Expected Impact	Rounded Value	Large Protected Tree
deodar cedar (*Cedrus deodara*)	378	39	65	50	Good	N/A	Moderate-High	$16,800.00	No
incense cedar (*Calocedrus decurrens*)	379	28	65	35	Good	N/A	Moderate-High	$9,400.00	No
plum (*Prunus sp.*)	380	4	25	25	Good	Poor	High	$190.00	No
coast redwood (*Sequoia sempervirens*)	381	20	65	35	Good	N/A	Low	$3,910.00	No
coast redwood (*Sequoia sempervirens*)	382	20	65	35	Good	N/A	Low	$3,910.00	No
loquat (*Eriobotrya japonica*)	383	2, 2, 2	20	20	Good	Poor	High	$210.00	No
plum (*Prunus cerasifera*)	384	8	20	15	Good	Poor	High	$600.00	No
plum (*Prunus cerasifera*)	385	8	20	15	Good	Poor	High	$600.00	No
Pittosporum (*Pittosporum eugenoides*)	386	8, 8	35	35	Good	N/A	Low	$6,600.00	No
Japanese maple (*Acer palmatum*)	387	4, 4	20	20	Fair	Fair	High	$250.00	No
Japanese maple (*Acer palmatum*)	388	8	20	20	Fair	Fair	High	$1,200.00	No
trident maple (*Acer buergerianum*)	389	6	20	20	Fair	Fair	High	$560.00	No
Laurel (*Laurus nobilis*)	390	8	15	15	Fair	Fair	High	$940.00	No

Tree Species	Number	Trunk Diameter (in.)	~ Height (ft.)	~ Canopy Diameter (ft.)	Condition	Suitability	Expected Impact	Rounded Value	Large Protected Tree
pear (*Pyrus x calleryana*.)	391	9	35	20	Fair	Fair	High	$830.00	No
queen palm (*Syagrus romanzoffiana*)	392	10	15	15	Good	Poor	High	$2,130.00	No
camphor (*Cinnamomum camphora*)	393	2, 2, 2, 2, 2	15	15	Fair	Poor	High	$1,700.00	No
pear (*Pyrus sp.*)	394	4, 3	15	15	Fair	Poor	High	$200.00	No
coast live oak (*Quercus agrifolia*)	395	40	65	55	Fair	N/A	Low	$15,000.00	Yes
birch (*Betula pendula*)	396	8	35	20	Good	Poor	High	$1,520.00	No
birch (*Betula pendula*)	397	8, 4	35	20	Good	Poor	High	$460.00	No

Appendix C: Photographs

C1: Cedars #378, #389 on adjacent site

C2: Coast redwoods #391 and #392 on the adjacent site

C3: Coast live oak #395 on the adjacent site and birch #396 and #397

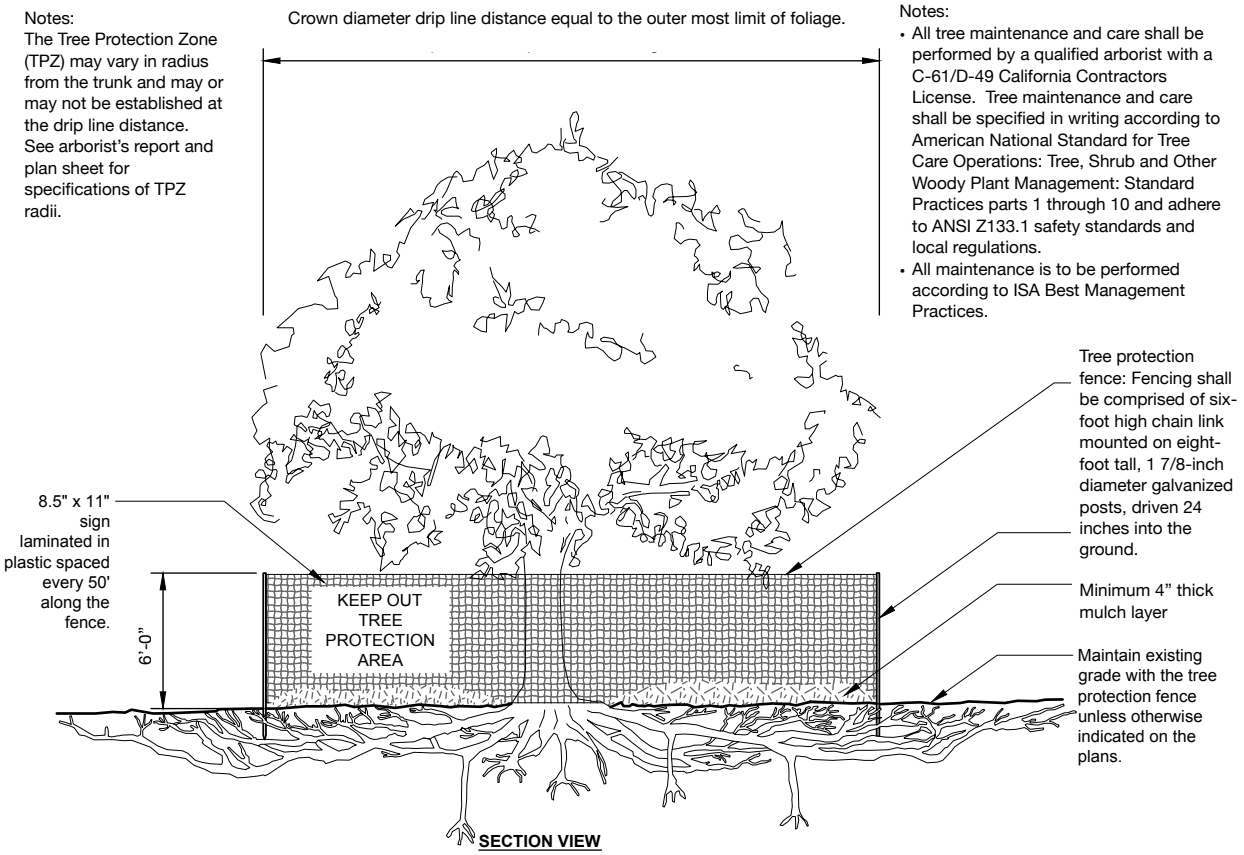
C4: Coast live oak #395 on adjacent site

C5: Trees #390, #392, #393, and #394

C6: Japanese maples #387 and #388

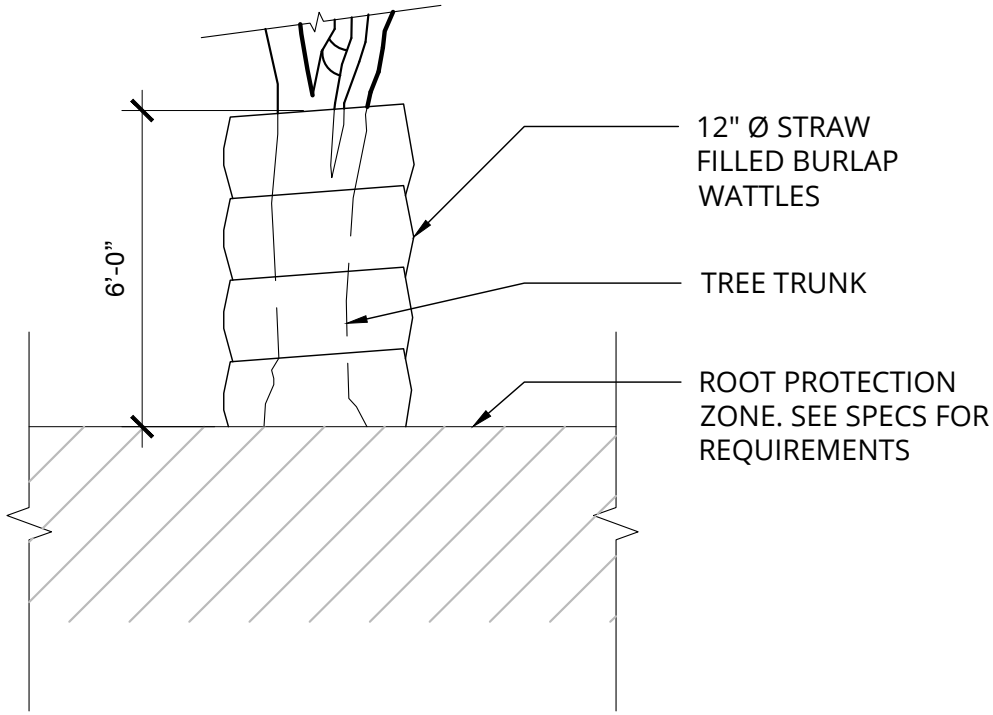
Appendix D: Tree Protection Guidelines

Plan Sheet Detail S-X (Type I)



S-X TREE PROTECTION

Plan Sheet Detail S-Y (Type III)



SECTION VIEW

S-Y TRUNK PROTECTION WITH WATTLE

Section 29.10.1005. - Protection of Trees During Construction

Tree Protection Zones and Fence Specifications

1. **Size and materials:** Six (6) foot high chain link fencing, mounted on two-inch diameter galvanized iron posts, shall be driven into the ground to a depth of at least two (2) feet at no more than ten-foot spacing. For paving area that will not be demolished and when stipulated in a tree preservation plan, posts may be supported by a concrete base.
2. **Area type to be fenced:** Type I: Enclosure with chain link fencing of either the entire dripline area or at the tree protection zone (TPZ), when specified by a certified or consulting arborist. Type II: Enclosure for street trees located in a planter strip: chain link fence around the entire planter strip to the outer branches. Type III: Protection for a tree located in a small planter cutout only (such as downtown): orange plastic fencing shall be wrapped around the trunk from the ground to the first branch with two-inch wooden boards bound securely on the outside. Caution shall be used to avoid damaging any bark or branches.
3. **Duration of Type I, II, III fencing:** Fencing shall be erected before demolition, grading or construction permits are issued and remain in place until the work is completed. Contractor shall first obtain the approval of the project arborist on record prior to removing a tree protection fence.
4. **Warning Sign:** Each tree fence shall have prominently displayed an eight and one-half-inch by eleven-inch sign stating: "Warning —Tree Protection Zone—This fence shall not be removed and is subject to penalty according to Town Code 29.10.1025." Text on the signs should be in both English and Spanish (Appendix E).

All persons, shall comply with the following precautions

1. Prior to the commencement of construction, install the fence at the dripline, or tree protection zone (TPZ) when specified in an approved arborist report, around any tree and/or vegetation to be retained which could be affected by the construction and prohibit any storage of construction materials or other materials, equipment cleaning, or parking of vehicles within the TPZ. The dripline shall not be altered in any way so as to increase the encroachment of the construction.
2. Prohibit all construction activities within the TPZ, including but not limited to: excavation, grading, drainage and leveling within the dripline of the tree unless approved by the Director.
3. Prohibit disposal or depositing of oil, gasoline, chemicals or other harmful materials within the dripline of or in drainage channels, swales or areas that may lead to the dripline of a protected tree.
4. Prohibit the attachment of wires, signs or ropes to any protected tree.
5. Design utility services and irrigation lines to be located outside of the dripline when feasible.
6. Retain the services of a certified or consulting arborist who shall serve as the project arborist for periodic monitoring of the project site and the health of those trees to be preserved. The project arborist shall be present whenever activities occur which may pose a potential threat to the health of the trees to be preserved and shall document all site visits.
7. The Director and project arborist shall be notified of any damage that occurs to a protected tree during construction so that proper treatment may be administered.

Monitoring

Any trenching, construction or demolition that is expected to damage or encounter tree roots should be monitored by the project arborist or a qualified ISA Certified Arborist and should be documented.

The site should be evaluated by the project arborist or a qualified ISA Certified Arborist after construction is complete, and any necessary remedial work that needs to be performed should be noted.

Root Pruning

Roots greater than two inches in diameter shall not be cut. When roots over two inches in diameter are encountered and are authorized to be cut or removed, they should be pruned by hand with loppers, handsaw, reciprocating saw, or chain saw rather than left crushed or torn. Roots should be cut beyond sinker roots or outside root branch junctions and be supervised by the project arborist. When completed, exposed roots should be kept moist with burlap or backfilled within one hour.

Boring or Tunneling

Boring machines should be set up outside the drip line or established Tree Protection Zone. Boring may also be performed by digging a trench on both sides of the tree until roots one inch in diameter are encountered and then hand dug or excavated with an Air Spade® or similar air or water excavation tool. Bore holes should be adjacent to the trunk and never go directly under the main stem to avoid oblique (heart) roots. Bore holes should be a minimum of three feet deep.

Tree Pruning and Removal Operations

All tree pruning or removals should be performed by a qualified arborist with a C-61/D-49 California Contractors License. Treatment, including pruning, shall be specified in writing according to the most recent ANSI A-300A Standards and Limitations and performed according to ISA Best Management Practices while adhering to ANSI Z133.1 safety standards. Trees that need to be removed or pruned should be identified in the pre-construction walk through.

Appendix E: Tree Protection Signs

E1: English

Warning
Tree Protection Zone

This Fence Shall Not Be Removed
And Is Subject To Penalty According To
Town Code 29.10.1025

E2: Spanish

Cuidado
Zona De Arbol Pretejido

Esta valla no podrán ser sacados
Y está sujeta a sanción en función de
Código Ciudad del 29.101025

Qualifications, Assumptions, and Limiting Conditions

Any legal description provided to the consultant is assumed to be correct. Any titles or ownership of properties are assumed to be good and marketable. All property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

All property is presumed to be in conformance with applicable codes, ordinances, statutes, or other regulations.

Care has been taken to obtain information from reliable sources. However, the consultant cannot be responsible for the accuracy of information provided by others.

The consultant shall not be required to give testimony or attend meetings, hearings, conferences, mediations, arbitration, or trials by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services.

This report and any appraisal value expressed herein represent the opinion of the consultant, and the consultant's fee is not contingent upon the reporting of a specified appraisal value, a stipulated result, or the occurrence of a subsequent event.

Sketches, drawings, and photographs in this report are intended for use as visual aids, are not necessarily to scale, and should not be construed as engineering or architectural reports or surveys. The reproduction of information generated by architects, engineers, or other consultants on any sketches, drawings, or photographs is only for coordination and ease of reference. Inclusion of said information with any drawings or other documents does not constitute a representation as to the sufficiency or accuracy of said information.

Unless otherwise expressed: a) this report covers only examined items and their condition at the time of inspection; and b) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that structural problems or deficiencies of plants or property may not arise in the future.

Certification of Performance

I Richard Gessner, Certify:

That I have personally inspected the tree(s) and/or the property referred to in this report, and have stated my findings accurately. The extent of the evaluation and/or appraisal is stated in the attached report and Terms of Assignment;

That I have no current or prospective interest in the vegetation or the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved;

That the analysis, opinions and conclusions stated herein are my own;

That my analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted Arboricultural practices;

That no one provided significant professional assistance to the consultant, except as indicated within the report.

That my compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party, nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any other subsequent events;

I further certify that I am a Registered Consulting Arborist® with the American Society of Consulting Arborists, and that I acknowledge, accept and adhere to the ASCA Standards of Professional Practice. I am an International Society of Arboriculture Board Certified Master Arborist®. I have been involved with the practice of Arboriculture and the care and study of trees since 1998.

Richard J. Gessner 

ASCA Registered Consulting Arborist® #496
ISA Board Certified Master Arborist® WE-4341B
ISA Tree Risk Assessor Qualified