Request for Qualifications

Prepared for:

Jennifer Armer
and
The Town of Los Gatos

March 28, 2022

Monarch Consulting Arborists

Richard Gessner
P.O. Box 1010 – Felton, CA 95018
1 831 331 8982
www.monarcharborists.com

Prepared By: Richard Gessner

ASCA - Registered Consulting Arborist ® #496
ISA - Board Certified Master Arborist® WE-4341B

Table of Contents

March 28, 2022

Town of Los Gatos
Community Development Department
Planning Division
Attn: Jennifer Armer
110 E. Main Street
Los Gatos, CA 95030

Monarch Consulting Arborists

Richard Gessner
P.O. Box 1010 – Felton, CA 95018
1 831 331 8982
www.monarcharborists.com

Regarding: Request for qualifications to serve as a Consulting Arborist for the Town of Los Gatos.

Statement of Interest

I have been contracted by the Town since 2017 to provide the requested consulting services. I am interested in providing arboricultural consulting services for the Town of Los Gatos to provide reports, peer review, and to make recommendations for the preservation, safety, and health of trees in the town's urban forest.

Introduction

My name is Richard Gessner and I have been an ISA (International Society of Arboriculture) Certified Arborist since 1999, ISA Board Certified Master Arborist® since 2008, and an ASCA (American Society of Consulting Arborists) Registered Consulting Arborist® since 2010. For more than twenty years I have worked as an arborist for two national tree care companies, the electric utility, and have operated my own consulting business since 2010. My broad experience provides me with insight into the many challenges in various roles as a professional arborist. Amongst other assignments since 2010 I have provided more than hundreds of arborist's reports and tree protection plans related to development projects around the Silicon Valley and beyond.

Aside from my professional experience I am a past President of the Western Chapter ISA, on the Board of Directors of the Britton Fund, Inc. nonprofit organization that provides research and educational opportunities in the field of arboriculture in California, Arizona, Nevada and Hawaii. For the past five years I have been the voting representative for ASCA on the Accredited Standards Committee (A300) whose mission is to develop consensus performance standards based on current research and sound practice for writing specifications to manage trees, shrubs, and other woody plants, the tree care industry's ANSI A300 Standards and Limitations.

Executive Summary

Situation Appraisal

The Town of Los Gatos protects all trees with a trunk diameter greater than (4) four inches at (54) fifty-four inches above grade on vacant or underdeveloped lots and those requiring planning/zoning review. Because trees are of significant value to the Town of Los Gatos and the surrounding communities it is important to obtain accurate and relevant information regarding the preservation, safety, and protection of the existing urban forest.

Objectives:

- Evaluate tree resources with regard to planning, design, and impact though construction and post construction activity.
- Provide advice regarding tree removal, retention, mitigation, and preservation.
- Identify trees suitable for preservation while addressing the need to remove and provide mitigation for those unsuitable to retain.

Measures of success:

- Long term urban forest preservation with minimal impact on valuable trees within the community.
- Maintaining the environmental and aesthetic benefits derived from trees retained during site development.
- Growing an urban forest for the future with proper tree selection regarding desired contribution, placement, and species selection.

Value to the Town of Los Gatos and Community:

- Long term tree preservation solutions to help ensure desired aesthetic and functional contributions the trees will provide to the community.
- Reduced safety and financial risk to property owners and the community from appropriate tree retention and removal.
- Reduced delays in the planning process by providing adequate information regarding tree preservation in a timely manner.
- Increased property values.

Experience

As the incumbent consultant I have been involved with more than fifty different projects solely for the Town of Los Gatos since 2017. I am familiar with the needs of planning and the hillside design guidelines regarding trees and screening of proposed properties.

Qualifications

Listed below are three references familiar with my work product regarding pre-development assessments and municipal planning, tree protection type reports, and urban forest initiative assignments. The Town's planning department including Erin Walter, Sean Mullin, Ryan Safty, and Jocelyn Shoopman along with Arborist Rob Moulden are also familiar with my work and expertise.

Ed Lambing - Director of Engineering San Jose Water Company 1265 S. Bascom Avenue San Jose, CA 95128 408.279.7889	Various projects over the past five years. Evans Right of Way, Bainter Ave Right of Way, Saratoga Hills Tank Replacement, Vickery in ground reservoir renovation, Overlook Road Tank and Pump replacement.
Matthew Fried Managing Arborist City of San Mateo mfried@cityofsanmateo.org (650) 522-7422	Mr. Fried has both contracted me to help with city urban forest initiatives and reviewed many of my reports over the years.
Robert Siudzinski City Arborist City of Campbell | Public Works Department 70 N. First Street Campbell, CA 95008	Mr. Siudzonski has also contracted me to help with city urban forest initiatives and reviewed many of my reports over the years.

Neither I nor my organization have been the subject of a lawsuit or any type of legal action other than participating in cases as an expert witness.

Curriculum Vitae for Richard Gessner

Education

Attended the University of Oregon from 1995 to 1997
Major coursework focussed on Environmental Studies and Anthropology

Current Professional Licenses and Certifications

- Registered Consulting Arborist® #496 American Society of Consulting Arborists - current
- Board Certified Master Arborist® WE-4341B International Society of Arboriculture - current

Professional Development

- Past President of the Western Chapter International Society of Arboriculture 2018
- The Britton Fund, Inc. Director on the Board of Directors 2015-2022 (Current)
- ASCA Representative for ANSI A300 Standards Committee ASC A300 Member - Current 2016- 2022 TCIA.
- International Society of Arboriculture annual leadership conference - October 2014.
- Coach at the 2013 ASCA Consulting Academy
- Graduated from ASCA Consulting Academy 2010
- Graduated from Dale Carnegie Sales Advantage Course 2005
- Attended various local tree care and pest management workshops over the past 20 years
- Speaker for Pesticide Applicators Professional Association (PAPA) various topics.

Professional Experience

Owner/Consulting Arborist for Monarch Consulting Arborists LLC
Monarch Consulting Arborists LLC, P.O. Box 1010, Felton, CA 95018
Owner and founder of Monarch Consulting Arborists LLC - November 2010 to present

- Provide expert assessments regarding the care and management of trees and our urban forest.

Awards

Western Chapter ISA Lifetime Membership, 2018
Western Chapter ISA Presidents Award, 2020

Business Developer for Tree Care Services
ValleyCrest Landscape Companies, Inc, California, San Jose, CA April 2007 - November 2010

- Manage day to day operations including sales and account management
- Sell and Estimate tree care services in a designated territory for primarily commercial clients
- Prospect for new clients using sales techniques and arboricultural consultation
- Build lasting relationships with existing clients and market services to new prospects
- Schedule crews and field support to ensure profitable outcome
- Draft work orders to instruct crew to perform key elements of each job to insure complete customer satisfaction
- Customer follow up and dispute resolution as needed
- Assist with crew training and safety

Arborist Representative/Selling Arborist
The F.A. Bartlett Tree Expert Company, Stamford Connecticut, San Jose, CA January 2001- April 2007

- In charge of day to day operations including sales, marketing, safety and regulatory responsibilities.
- Act as a consultant for clients and allied businesses
- Develop and implement tree management programs and plant health care (IPM) programs using the safest and most up to date techniques
- Supervise work performed ensuring jobs are performed and completed per the contract
- Responsible for crews' adherence to all safety regulations including OSHA and ANSI Standards

Consulting Utility Forester to Pacific Gas and Electric Co.
Western Environmental Consultants Inc. Oakland CA, January 1998 to August 1999

- Survey properties to determine fire hazards and secure permission for tree work
- Document information for vegetation management program to mitigate fire danger
- Support relationships with public and private agencies and obtain necessary permits
- Resolve customer complaints and concerns

Memberships

- American Society of Consulting Arborists (ASCA)
- International Society of Arboriculture (ISA)
- Western Chapter International Society of Arboriculture (WCISA)

Publications

Limitations of Root Pruning, Western Arborist, Spring 2018

Organization

I, Richard Gessner, am the sole staff that would perform the services requested and am the only employee of my business. I can typically perform the required services with some advanced notice. Site visits and on-site assessments can be performed with 72 hours notice and written reports can be expected within 14 days after the initial assessment. Time constraints would consist of required expert witness testimony or planned vacations. Time is always of the essence and projects can be expedited within reason if necessary.

Project Approach

Below is the typical project approach for pre-development assessments including three phases which are as follows: planning, protection, and construction. Listed below is the typical assignment for such a project:

Phase 1: Provide an arborist's report that includes an assessment of the trees within the project area. The assessment is to include the species, size (trunk diameter/circumference), condition (health and structure), and suitability for preservation.

The report will contain findings and recommendations, tables with tree information, photographs, and locations placed on a map if required. Trees will have aluminum number tags affixed to them for on site identification and report reference.

Provide construction influence ratings for the trees that will be affected by the project.

Phase 2: Provide a tree protection plan for trees to be retained. Establish tree protection zone distances and critical root zone distances along with requirements for preservation during pre-construction, construction, and post construction care.

Tree protection fencing and distances can be placed on a map provided if necessary.

Phase 3: Monitor construction activity to provide observations and recommendations for care as on-site conditions change and unexpected impacts that may occur. Provide construction monitoring field forms and photos as required.

Project issues: Changes in design that create greater conflict than first anticipated. Grading, drainage, utility, and landscape changes. Unanticipated basement over-excavations. Water to site cut off. Tree protection fence removed.

Resolutions: Contact the project manager and authority of jurisdiction regarding the changes or violations of conditions of approval. Provide appropriate mitigation measures to rectify the issues in a timely manner.

Public Meetings

Peer Review: Site visit would be approximately one hour, review of report and plans one hour, and formal response to review one hour. Three to four hours total for a peer review.

Fee estimate: $825.00 to $1650,00

Site investigation and reports: A typical residential site visit and report would be one to three hours for the site visit, inventory, and assessment. Plan review and report generation can be between three and eight hours depending on the complexity of the assignment.

Fee estimate: $1,100 to $4,400.00

Special studies: Special studies would need to be investigated with no reference to plan scope or time and cannot be estimated from a time standpoint.

Fee estimate: unknown

Tree Inventory, Assessment, and Protection Report

32 Walnut Avenue
Los Gatos, CA 95032

Prepared for:

Town of Los Gatos

January 26, 2021

Prepared By:

Richard Gessner

ASCA - Registered Consulting Arborist ® #496
ISA - Board Certified Master Arborist® WE-4341B

Monarch Consulting Arborists

Richard Gessner
P.O. Box 1010 – Felton, CA 95018
1 831 331 8982
www.monarcharborists.com

Table of Content

Summary

The plans are to tear down the existing structure and build a new residence with a garage in the back. Three coast redwoods are indicated as to be retained and preserved. The inventory contains 18 trees comprised of 9 different species. One coast redwood (*Sequoia sempervirens*) is considered Large Protected and nine trees fruit are Exempt. Four trees are in good condition, nine fair, and five poor. There are some large trees on the site that are in fair or poor shape including Douglas-firs (*Pseudotsuga menziesii*) #286, #287, #293, and #294. These large specimens have some defects that could pose safety issues under new site occupancy. Three coast redwoods are indicated to be retained and preserved #290, #291, and #292 but only #290 could realistically be preserved based on the plans. The issues impacting the two trees to be preserved are the basement and required over-excavation along with the detention basin adjacent to the trees. Tree protection fence and irrigation will need to be placed around coast redwood #290. The plans indicate a Type III (trunk protection only) protection scheme around trees #291 and #292, but the grading and excavation around these trees may be detrimental without more detail.

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 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 Trunk Formula Technique.

Limits of the assignment

- The information in this report is limited to the condition of the trees during my inspection on January 8, 2021. No tree risk assessments were performed.
- Tree heights and canopy diameters are estimates.

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

Table 1: Plans Reviewed Checklist

Plan	Date	Sheet	Reviewed	Source
Existing Site Topographic	June 2020	C-2.0	Yes	Wilson Land Surveyors
Proposed Site Plan	10/23/20	C4.0	Yes	Metro Design Group
Erosion Control			N/A	
Grading and Drainage	10/23/20	C4.0	Yes	Metro Design Group
Utility Plan and Hook-up locations				
Exterior Elevations				
Landscape Plan			No	
Irrigation Plan			No	
T-1 Tree Protection Plan	10/23/20	T-1	Yes	Metro Design Group

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.

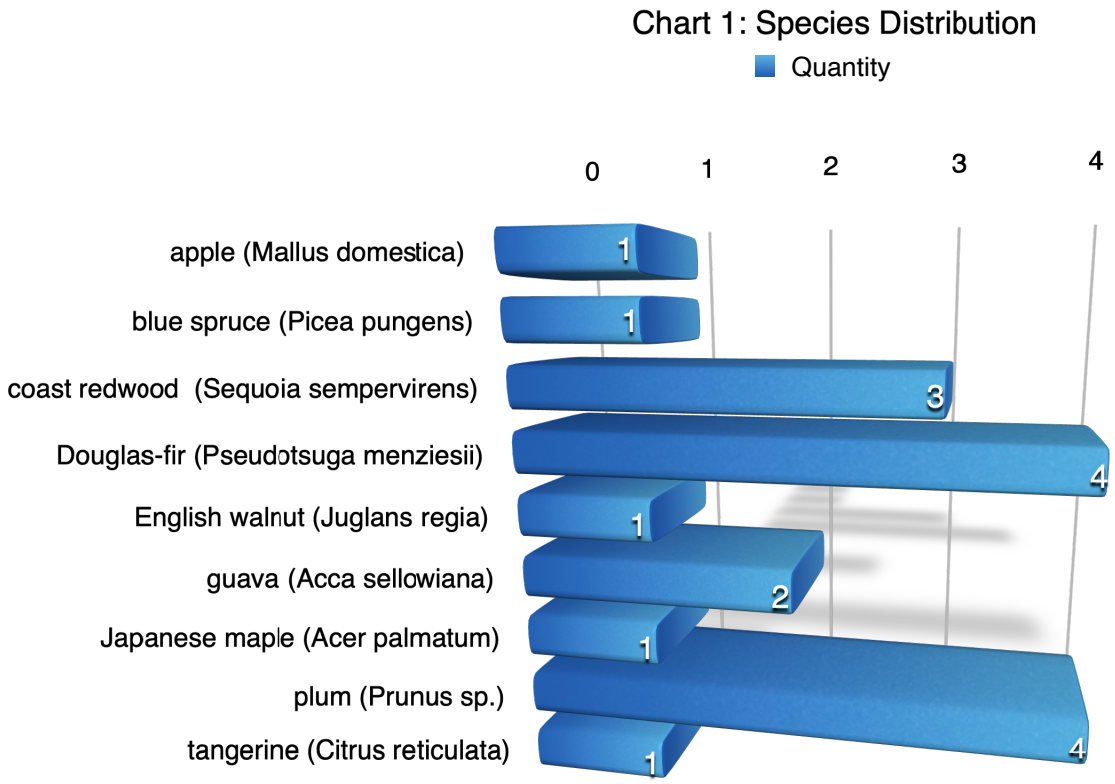
Observations

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 are to tear down the existing structure and build a new residence with a garage in the back of the site. Three coast redwoods are indicated as to be retained and preserved. There is an arborist’s report pasted to the T-1 sheet but it does not meet the required criteria to be accepted by the Town for the purposes of the project.

The inventory contains 18 trees comprised of 9 different species (Chart 1). One coast redwood is considered Large Protected[1] and nine fruit trees are Exempt[2].



[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 10th Edition, 2019* (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 Technique" (Appendix B).

"Trunk Formula Technique" is calculated as follows: Basic Tree Cost = (Unit tree cost x Appraised trunk area), Appraised Value = (Basic tree cost X functional Limitations (percentage) X Condition (percentage) X External Limitations (percentage)).

The trunk formula valuations are based on four tree factors; size (trunk cross sectional area), condition, functional limitations, and external limitations. There are two steps to determine the overall value. The first step is to determine the "Basic Tree Cost" based on size and unit tree cost. Unit tree cost is calculated by dividing the nursery wholesale cost of a 24 inch box specimen and its replacement size (cost per square inch trunk caliper) which is determined by the *Species Classification and Group Assignment, 2004 Western Chapter Regional Supplement*. The cost of the 24 inch box wholesale specimen was determined through personal communications with BrightView and Normans nurseries in Farmington and Central Wholesale in San Jose for an average of $214.00.

The second part is to depreciate the tree's Basic Cost through an assessment of condition, functional limitations, and external limitations. The condition assessment guidelines and percentages are defined in the "Condition Rating" section of this report. Functional limitations are based on factors associated with the tree's interaction to its planting site that would affect condition, limit development, or reduce the utility in the future and include genetics, placement, and site conditions for the individual tree. External limitations are outside the property, out of control of the owner and also affect condition, limit development, or reduce the utility in the future (i.e power lines, municipal restrictions, drought adaptations, or species susceptibility to pests).

There were 18 trees appraised for a rounded depreciated value of $57,770.00.

Appraisal worksheets are available upon request

Discussion

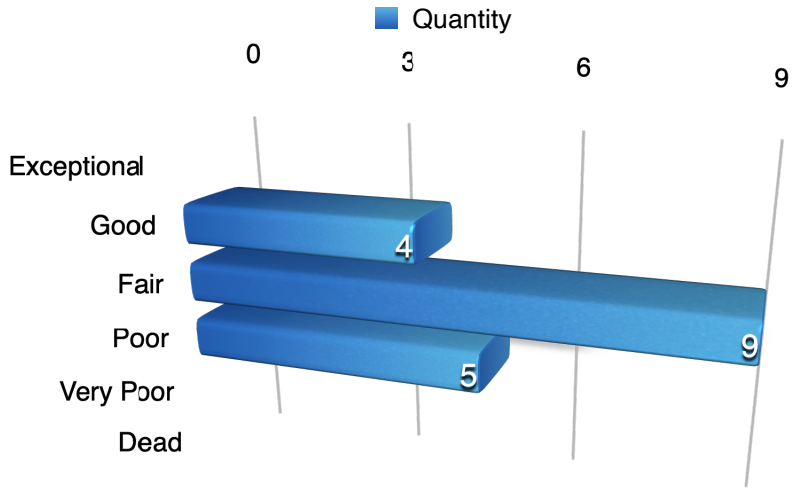
Condition Rating

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.

Four trees are in good condition, nine fair, and five poor (Chart 1). There are some large trees on the site that are in fair or poor shape including Douglas-firs #286, #287, #293, and #294. These large specimens have some defects that could pose safety issues under new site occupancy.

Chart 2: Condition Ratings



Suitability for Conservation

A tree's suitability for preservation is determined based on Functional and External Limitations[3] (ISA, 2019).

- 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.

Three trees have good suitability for preservation while fifteen are poorly suited for retention. Trees with good suitability include coast redwoods #290, #291, and #292 along the north side. The most significant tree on the lot is the centrally located Douglas-fir #286 with fair suitability due to size, location, and longevity in an urban setting. The other Douglas-fir are not suitable for retention but one of those trees may originate on the adjacent site (#294).

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.

Three coast redwoods are indicated to be retained and preserved #290, #291, and #292 but only #290 could realistically be preserved based on the plans. The issues impacting the two trees to be preserved are the basement excavation and required over-excavation along with the detention basin adjacent to the trees.

[3] Functional Limitations are based on factors associated with the tree's interaction to its planting site affecting plant condition, limiting plant development, or reducing the utility in the future and include genetics, placement, and site conditions for the individual tree (ISA, 2019). External Limitations are outside the property, out of control of the owner and also affect plant condition, limit plant development, or reduce the utility in the future (i.e power lines, municipal restrictions, drought adaptations, or species susceptibility to pests) (ISA, 2019).

Tree Protection

Typically there are three different tree protection schemes which are called Type I (Appendix D1), Type II and Type III (Appendix D2) 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).

Tree protection fence and irrigation will need to be placed around coast redwood #290 at a radius of 6 to 8 times the trunk diameter. The plans indicate a Type III (trunk protection only) protection scheme around trees #291 and #292 but the grading and excavation around these trees may be detrimental. This type of protection and retention of these trees will need to be further explored.

Conclusion

The plans are to tear down the existing structure and build a new residence with a garage in the back. Three coast redwoods are indicated as to be retained and preserved. There is an arborist's report pasted to the T-1 sheet but it does not meet the required criteria to be accepted by the Town for the purposes of the project. The inventory contains 18 trees comprised of 9 different species. One coast redwood is considered Large Protected and nine trees are Exempt. Four trees are in good condition, nine fair, and five poor. There are some large trees on the site that are in fair or poor shape including Douglas-firs #286, #287, #293, and #294. These large specimens have some defects that could pose safety issues under new site occupancy. Three coast redwoods are indicated to be retained and preserved #290, #291, and #292 but only #290 could realistically be preserved based on the plans. The issues impacting the two trees to be preserved are the basement and required over-excavation along with the detention basin adjacent to the trees. Tree protection fence and irrigation will need to be placed around coast redwood #290 at a radius of 6 to 8 times the trunk diameter distance. The plans indicate a Type III (trunk protection only) protection scheme around trees #291 and #292, but the grading and excavation around these trees may be detrimental without more detail.

Recommendations

1. Place tree numbers and tree protection fence locations and guidelines on the plans including the grading, drainage, and utility plans. Update the T-1 plan sheet to reflect the tree numbers provided in Appendix A and B of this report. The report by Urban Tree Management should be removed from this plan sheet as it does not contain any protection specifications or Town requirements.

2. Provide the extent of excavation for the basement, light well, and the stormwater detention pond to obtain a better understanding or feasibility of retaining coast redwoods #291 and #292.

3. Verify ownership of #294 which appears off property.

4. Place tree protection fence around coast redwood #290 at a radius of 25 to 33 feet (6x to 8x the trunk diameter). Install temporary irrigation or soaker hoses in the tree protection zone and provide supplemental watering during construction. Monitor watering times or amounts to ensure adequate soil saturation. (A 5/8" soaker hose requires about 200 minutes to deliver one inch of water to a garden. This number is affected by the length of the hose and the overall rate of flow from the faucet. A good rule of thumb is to expect about ½ GPM as a standard faucet flow rate.). Infrequent deeper watering is preferred and could be as much as 500 gallons per soaking.

5. 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.

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.

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, 2019. 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 Arboriculture 1998.

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.

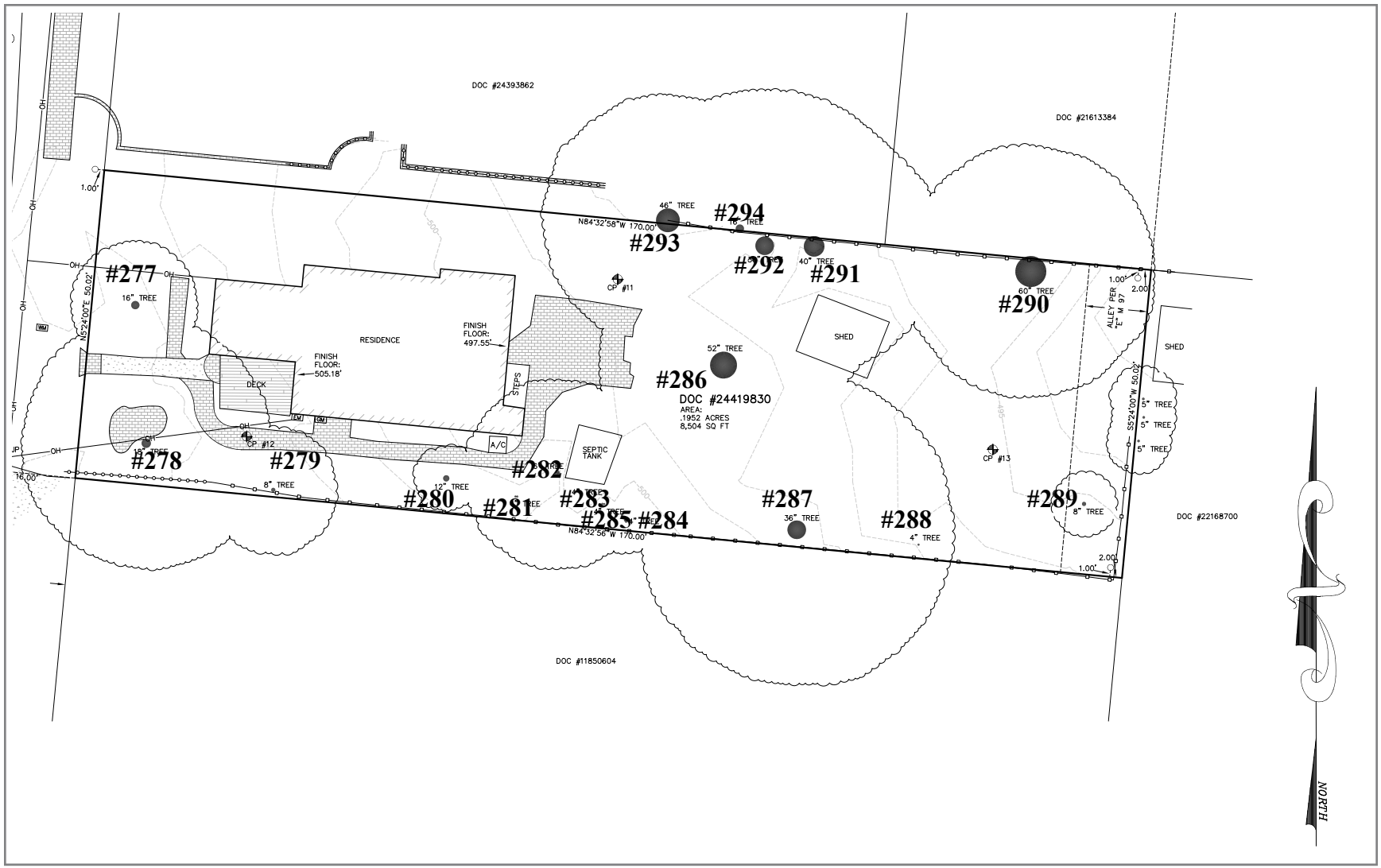
Trunk: Stem of a tree.

Trunk Formula Technique: 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.

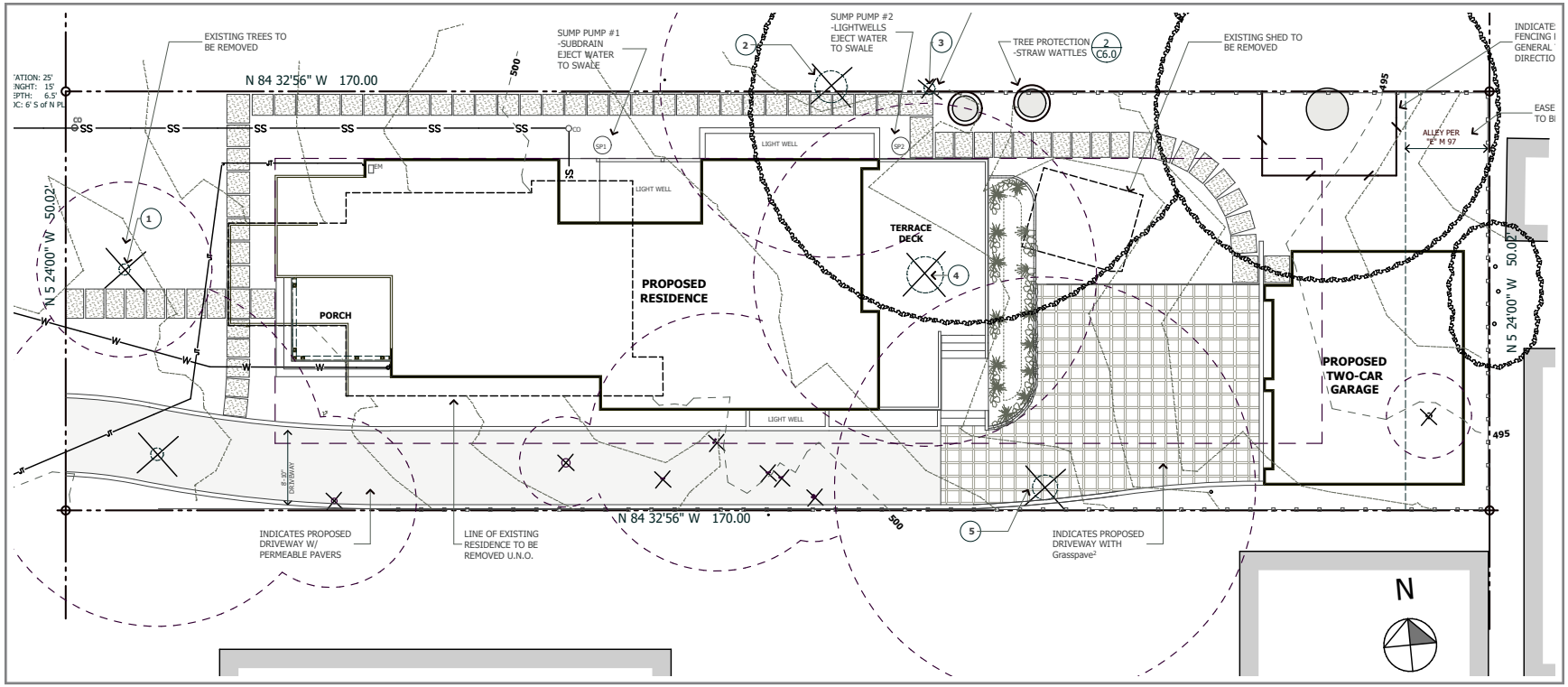
Volunteer: A tree, not planted by human hands, that begins to grow on residential or commercial property. Unlike trees that are brought in and installed on property, volunteer trees usually spring up on their own from seeds placed onto the ground by natural causes or accidental transport by people. Normally, 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

Inventory map with number locations taken from the existing topographic survey.



A2: Site Plan


EXISTING TREES TO BE REMOVED
SUMP PUMP #1 -SUBDRAIN EJECT WATER TO SWALE
SUMP PUMP #2 -LIGHTWELLS EJECT WATER TO SWALE
TREE PROTECTION -STRAW WATTLES
EXISTING SHED TO BE REMOVED
N 84 32'56" W 170.00
N 5 24'00" W 50.02'
PROPOSED RESIDENCE
PORCH
TERRACE DECK
PROPOSED TWO-CAR GARAGE
LIGHT WELL
ALLEY PER "E" M 97
INDICATES PROPOSED DRIVEWAY W/ PERMEABLE PAVERS
LINE OF EXISTING RESIDENCE TO BE REMOVED U.N.O.
INDICATES PROPOSED DRIVEWAY WITH Grasspave²
N

Appendix B: Tree Inventory and Assessment Tables

Table 3: Inventory and Assessment Summary

Tree Species	I.D. #	Trunk Diameter (in.)	~ Canopy Diameter (ft.)	Condition	Suitability	Expected Impact	Protection Status	Rounded Depreciated Value
blue spruce (*Picea pungens*)	277	16	20	Fair	Poor	High	No	$1,410.00
English walnut (*Juglans regia*)	278	16	25	Fair	Poor	High	Exempt	$1,410.00
apple (*Mallus domestica*)	279	9	20	Poor	Poor	Low	Exempt	$490.00
tangerine (*Citrus reticulata*)	280	10	15	Poor	Poor	High	Exempt	$560.00
guava (*Acca sellowiana*)	281	4	15	Fair	Poor	High	Exempt	$150.00
guava (*Acca sellowiana*)	282	10, 4	15	Fair	Poor	High	Exempt	$1,130.00
plum (*Prunus sp.*)	283	5	15	Fair	Poor	High	Exempt	$230.00
plum (*Prunus sp.*)	284	3, 3, 3	15	Fair	Poor	High	Exempt	$230.00
plum (*Prunus sp.*)	285	5, 2	15	Fair	Poor	High	Exempt	$340.00
Douglas-fir (*Pseudotsuga menziesii*)	286	47	55	Fair	Fair	High	No	$9,800.00
Douglas-fir (*Pseudotsuga menziesii*)	287	37	55	Poor	Poor	High	No	$3,630.00

Tree Species	I.D. #	Trunk Diameter (in.)	~ Canopy Diameter (ft.)	Condition	Suitability	Expected Impact	Protection Status	Rounded Depreciated Value
Japanese maple (*Acer palmatum*)	288	2.2	10	Good	Poor	High	No	$60.00
plum (*Prunus sp.*)	289	8	15	Fair	Poor	High	Exempt	$600.00
coast redwood (*Sequoia sempervirens*)	290	50	30	Good	Good	High	Yes	$15,500.00
coast redwood (*Sequoia sempervirens*)	291	25	30	Good	Good	High	No	$3,870.00
coast redwood (*Sequoia sempervirens*)	292	37	30	Good	Good	High	No	$8,500.00
Douglas-fir (*Pseudotsuga menziesii*)	293	43	30	Poor	Poor	High	No	$4,900.00
Douglas-fir (*Pseudotsuga menziesii*)	294	20	30	Poor	Poor	High	No	$1,060.00

Appendix C: Photographs

C1: Blue Spruce #277

C2: Douglas-fir #286

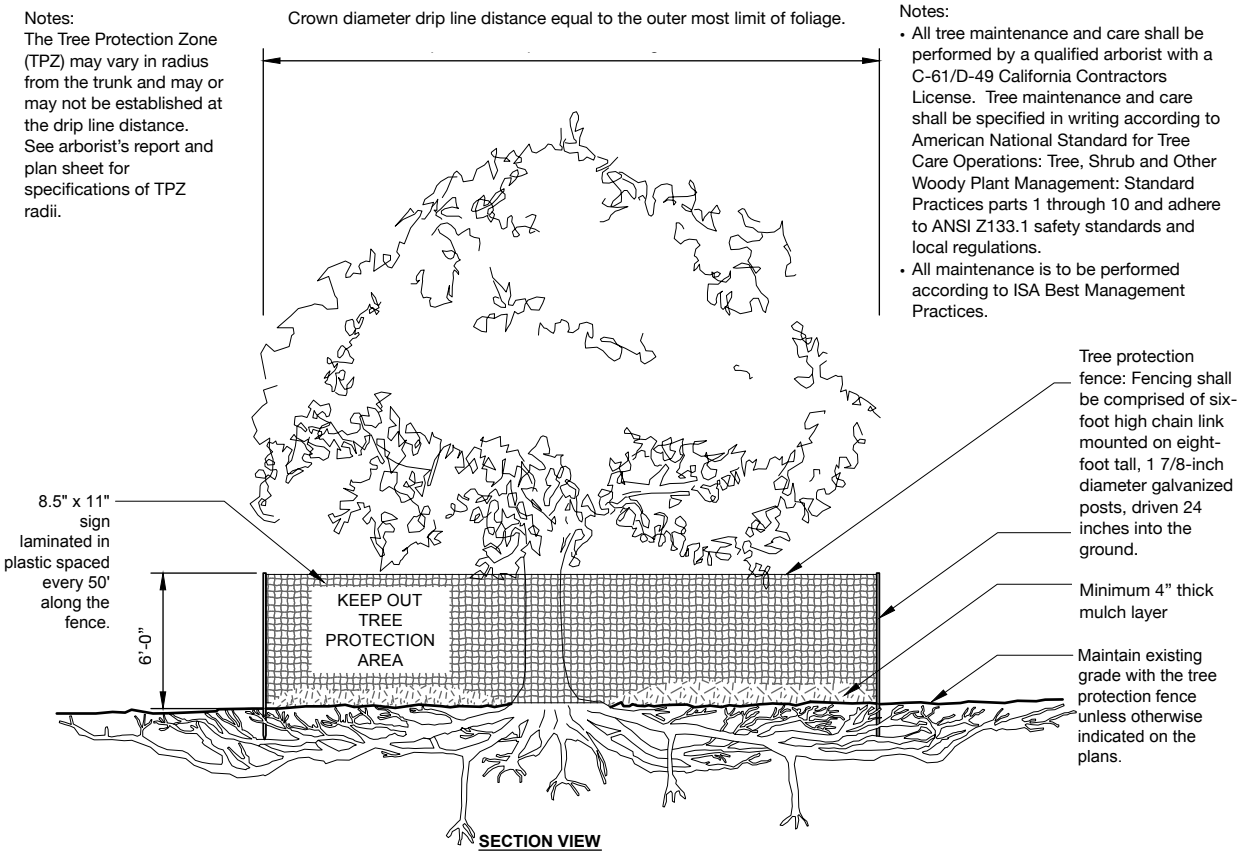
C3: Douglas-fir 293

C4: Douglas-fir #287 (deformed root collar)

C5: Coast redwood #290

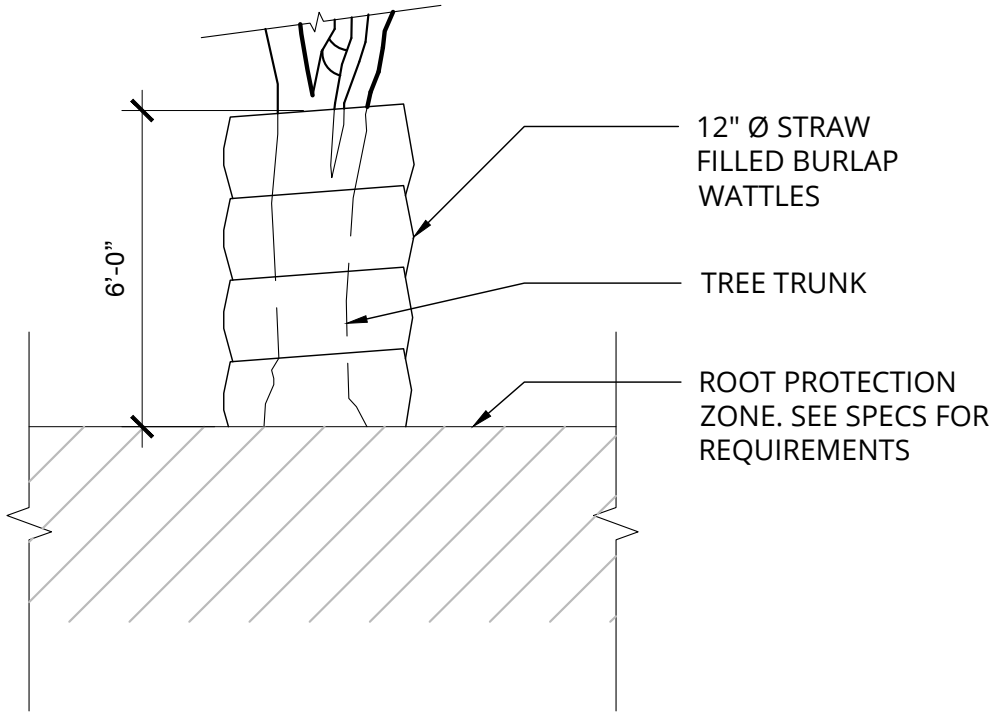
Appendix D: Tree Protection Guidelines

D1: Plan Sheet Detail S-X (Type I)



S-X TREE PROTECTION

D2: Plan Sheet Detail S-Y (Type III)



SECTION VIEW

S-Y TRUNK PROTECTION WITH WATTLE

D3: 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.

Prohibited Activities

The following are prohibited activities within the TPZ:

- Grade changes (e.g. soil cuts, fills);
- Trenches;
- Root cuts;
- Pedestrian and equipment traffic that could compact the soil or physically damage roots;
- Parking vehicles or equipment;
- Burning of brush and woody debris;
- Storing soil, construction materials, petroleum products, water, or building refuse; and,
- Disposing of wash water, fuel or other potentially damaging liquids.

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

Copyright

Tree Inventory, Assessment, and Protection Report

104 Angel Court, Los Gatos
Los Gatos, CA 95032

Prepared for:

Town of Los Gatos

August 18, 2021

Prepared By:

Monarch Consulting Arborists

Richard Gessner
P.O. Box 1010 - Felton, CA 95018
1 831 331 8982
www.monarcharborists.com

Table of Content

Summary

The plans indicate a new Accessory Dwelling Unit (ADU) in the back of the property, on the hillside, with a new driveway extension leading to the structure. The inventory contains twenty-four (24) trees comprised of three (3) different species. Six (6) coast live oaks are considered Large Protected (however five are “Large Protected” by aggregate of stems with only one have a single stem larger than 24 inches in diameter) and no trees are Exempt. Most of the trees are in good condition and consist of coast live oaks (*Quercus agrifolia*). Seventeen trees are in good condition, six fair, and one is in poor shape. Eight (8) trees will caused to be removed. The plans indicate three (3) within the footprint of the proposed driveway and ADU, however there are five (5) more directly adjacent to the proposed structures. Seven trees are indicated as moderate to highly impacted depending on construction and grading activity. There are some trees near the proposed new driveway extension but the plans only indicate the extent of the driveway. The limits of grading are not clear for either the driveway or the building pad. The utility connection locations should be modified to avoid bisecting the root zones as they are currently indicated on the plans. The applicant will be required to replace eight 8 protected trees according to the ordinance. Tree protection will consist of fence and the radii will be six times the trunk diameter distance. There were twenty-four (24) trees appraised for a rounded depreciated value of $77,710.00.

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 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 Trunk Formula Technique.

Limits of the assignment

- The information in this report is limited to the condition of the trees during my inspection on July 16, 2021. No tree risk assessments were performed.
- Tree heights and canopy diameters are estimates.

- 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	04/05/21	A011	Yes	Blain Architects
Erosion Control				
Grading and Drainage	May 2021	C1	Yes	Cornerstone Civil
Utility Plan and Hook-up locations				
Exterior Elevations				
Landscape Plan				
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

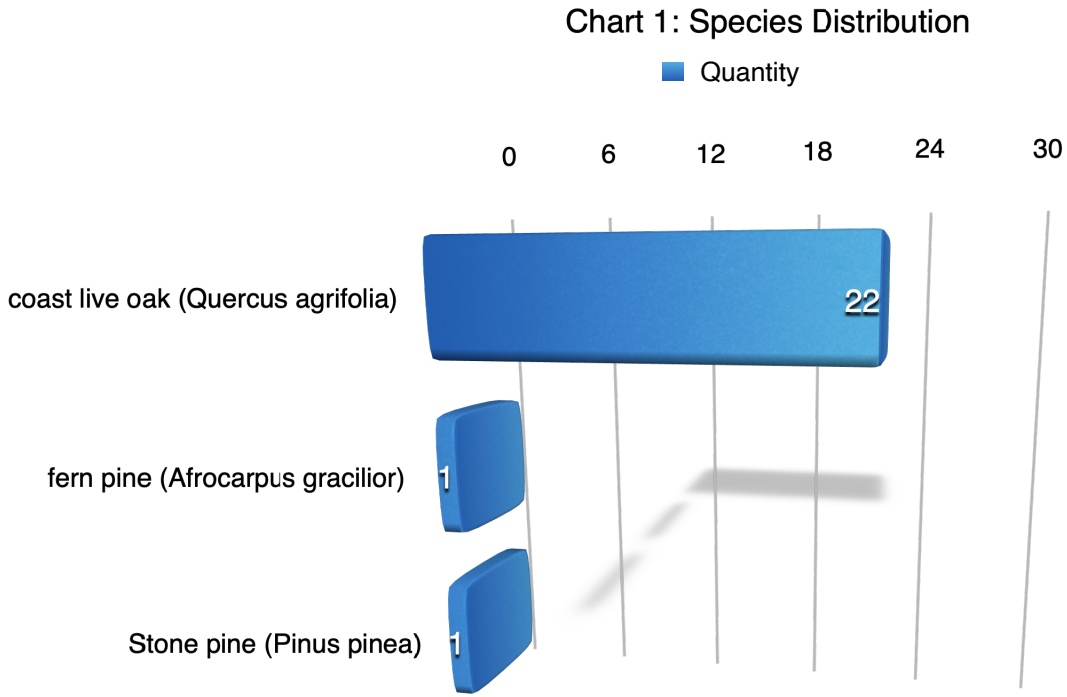
Tree Inventory

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).

Plans

The plans indicate a new Accessory Dwelling Unit in the back of the property on the hillside with a new driveway extension leading to the structure extending off the top of the existing driveway.

The inventory contains twenty-four (24) trees comprised of three (3) different species (Chart 1). Six (6) coast live oaks are considered Large Protected[1] (however five are "Large Protected" by aggregate of stems with only one have a single stem larger than 24 inches in diameter) and no trees are Exempt[2].



[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 10th Edition, 2019* (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 Technique" (Appendix B).

"Trunk Formula Technique" is calculated as follows: Basic Tree Cost = (Unit tree cost x Appraised trunk area), Appraised Value = (Basic tree cost X functional Limitations (percentage) X Condition (percentage) X External Limitations (percentage)).

The trunk formula valuations are based on four tree factors; size (trunk cross sectional area), condition, functional limitations, and external limitations. There are two steps to determine the overall value. The first step is to determine the "Basic Tree Cost" based on size and unit tree cost. Unit tree cost is calculated by dividing the nursery wholesale cost of a 24 inch box specimen and its replacement size (cost per square inch trunk caliper) which is determined by the *Species Classification and Group Assignment, 2004 Western Chapter Regional Supplement*. The cost of the 24 inch box wholesale specimen was determined through personal communications with BrightView and Normans nurseries in Farmington and Central Wholesale in San Jose for an average of $214.00.

The second part is to depreciate the tree's Basic Cost through an assessment of condition, functional limitations, and external limitations. The condition assessment guidelines and percentages are defined in the "Condition Rating" section of this report. Functional limitations are based on factors associated with the tree's interaction to its planting site that would affect condition, limit development, or reduce the utility in the future and include genetics, placement, and site conditions for the individual tree. External limitations are outside the property, out of control of the owner and also affect condition, limit development, or reduce the utility in the future (i.e power lines, municipal restrictions, drought adaptations, or species susceptibility to pests).

There were twenty-four (24) trees appraised for a rounded depreciated value of $77,710.00.

Appraisal worksheets are available upon request

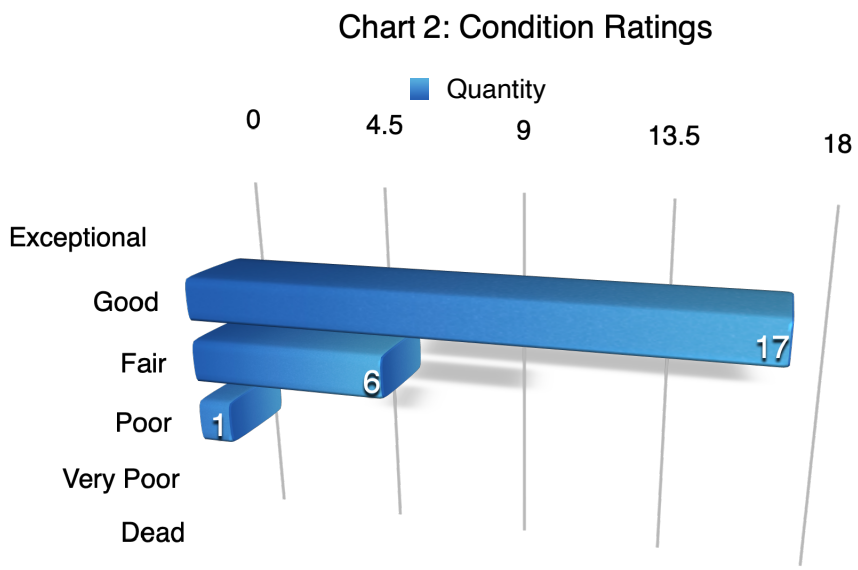
Discussion

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.

Most of the trees are in good condition and consist of coast live oaks in their natural habitat. Seventeen trees are in good condition, six fair, and one in poor shape.



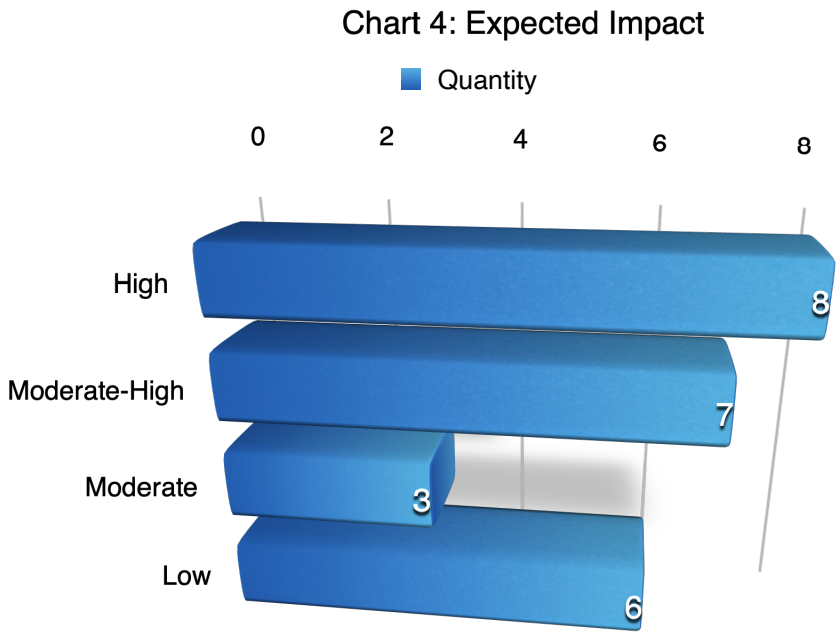
Expected Impact Level

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.

Eight trees will caused to be removed. The plans indicate three within the footprint of the proposed driveway and ADU, however there are five more directly adjacent to the proposed structures. Seven trees are indicated as moderate to highly impacted depending on construction and grading activity. There are some trees near the proposed new driveway extension but the plans only indicate the extent of the driveway. In my experience there will need to be grading on either side of the proposed driveway to make the cut into the hillside where it is located. The limits of grading are not clear for either the driveway or the building pad.

The utility connection locations should be modified to avoid bisecting the root zones as they are currently indicated on the plans.



Mitigation for Removals

The table below indicates the recommended replacement values (Table 2). The applicant will be required to replace 8 protected trees according to the ordinance. Alternatively it may be possible to create an approved landscape plan or provide an in-lieu payment.

Table 2: 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.

Tree Protection

Typically there are three different tree protection schemes which are called Type I (Appendix D1), Type II and Type III (Appendix D2) 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).

Tree protection will consist of fence around the trees to be retained. The radii will be six times the trunk diameter distance based on young tolerant specimens. Trees will need to enclosed in groups.

Conclusion

The plans indicate a new Accessory Dwelling Unit in the back of the property on the hillside with a new driveway extension leading to the structure extending off the top of the existing driveway. The inventory contains twenty-four (24) trees comprised of three (3) different species. Six (6) coast live oaks are considered Large Protected (however five are “Large Protected” by aggregate of stems with only one have a single stem larger than 24 inches in diameter) and no trees are Exempt. Most of the trees are in good condition and consist of coast live oaks in their natural habitat. Seventeen trees are in good condition, six fair, and one in poor shape. Eight trees will caused to be removed. The plans indicate three within the footprint of the proposed driveway and ADU, however there are five more directly adjacent to the proposed structures. Seven trees are indicated as moderate to highly impacted depending on construction and grading activity. There are some trees near the proposed new driveway extension but the plans only indicate the extent of the driveway. In my experience there will need to be grading on either side of the proposed driveway to make the cut into the hillside where it is located. The limits of grading are not clear for either the driveway or the building pad. The utility connection locations should be modified to avoid bisecting the root zones as they are currently indicated on the plans. The applicant will be required to replace 8 protected trees according to the ordinance. Alternatively it may be possible to create an approved landscape plan or provide an in-lieu payment. Tree protection will consist of fence around the trees to be retained. The radii will be six times the trunk diameter distance based on young tolerant specimens. Trees will need to enclosed in groups. There were twenty-four (24) trees appraised for a rounded depreciated value of $77,710.00.

Recommendations

1. Place tree numbers on all the plans. Make sure the trees are clearly indicated for removal on all the plans. The trees should also be very clearly marked on site prior to removal.

2. Provide some detail as to how the driveway cut will be constructed and where the spoils will go if any. If there is any required over-excavation to create the driveway those limits need to be on the plans.

3. Re-route the utilities to avoid bisecting the root zones of the trees. Show all utility locations and connections on the plans including sanitary sewer, water, and any required electric.

4. Place tree protection around the groups of trees to be preserved adjacent to the driveway and near the trellis. There is already a fence #582-#585.

5. Install temporary irrigation or soaker hoses in all tree protection zones and provide supplemental watering during construction within all TPZ areas. Monitor watering times or amounts to ensure adequate soil saturation. (A 5/8" soaker hose requires about 200 minutes to deliver one inch of water to a garden. This number is affected by the length of the hose and the overall rate of flow from the faucet. A good rule of thumb is to expect about ½ GPM as a standard faucet flow rate.). Infrequent deeper watering is preferred.

6. 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.

7. 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.

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

9. 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.

10. 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.

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, 2019. 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 Arboriculture 1998.

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.

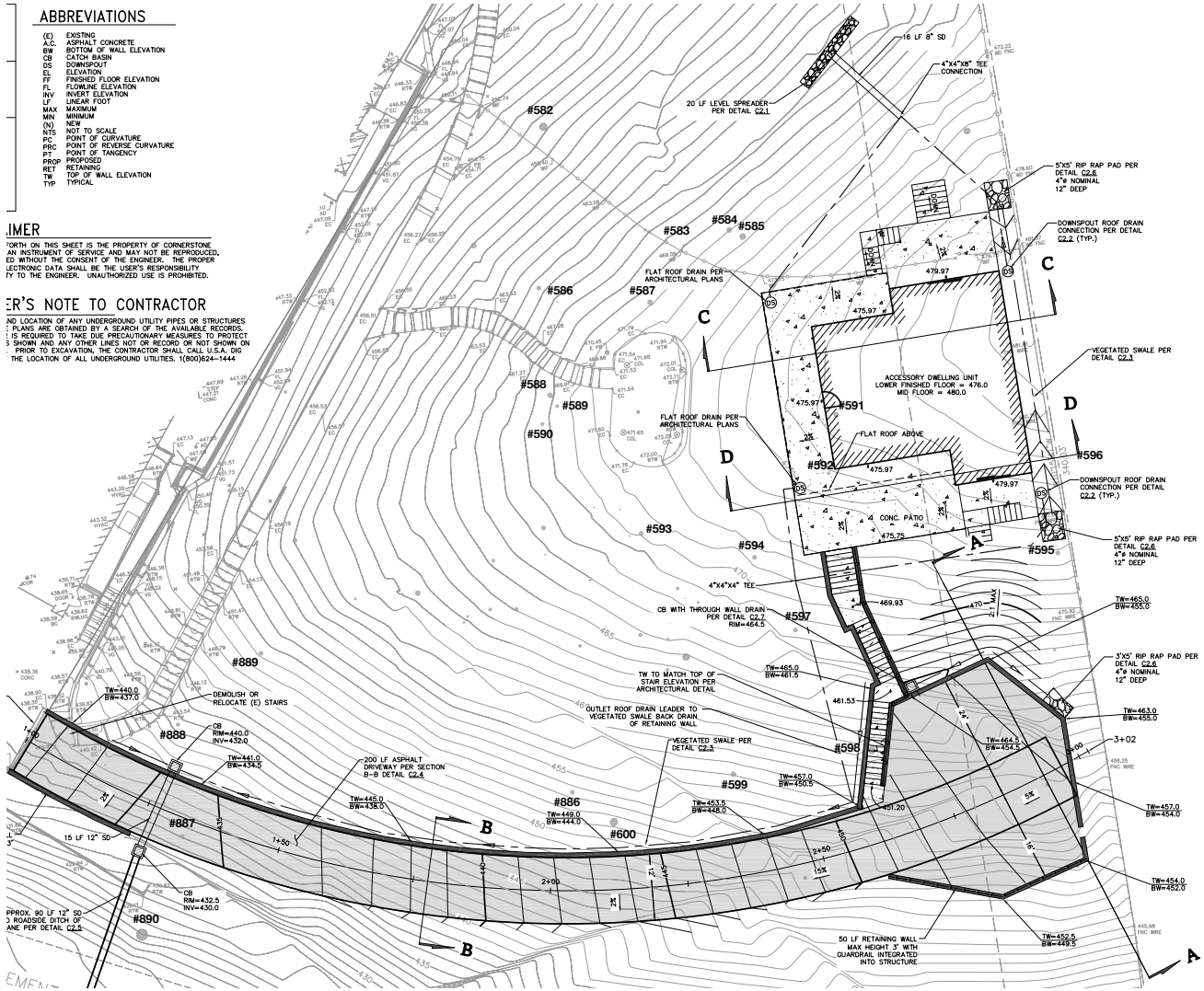
Tree Risk Assessment: Process of evaluating what unexpected things could happen, how likely it is, and what the likely outcomes are. In tree management, the systematic process to determine the level of risk posed by a tree, tree part, or group of trees.

Trunk: Stem of a tree.

Trunk Formula Technique: 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: Inventory and Assessment Summary

Tree Species	I.D. #	Trunk Diameter (in.)	~ Canopy Diameter (ft.)	Condition	Expected Impact	Protection Status	Rounded Depreciated Value	Tree Protection Radii
coast live oak (*Quercus agrifolia*)	582	20	35	Good	Moderate-High	Protected	$7,800.00	10
coast live oak (*Quercus agrifolia*)	583	5	6	Poor	Moderate-High	Protected	$210.00	2.5
coast live oak (*Quercus agrifolia*)	584	12, 8	25	Good	Low	Protected	$4,390.00	7.5
coast live oak (*Quercus agrifolia*)	585	12	25	Good	Low	Protected	$2,810.00	6
coast live oak (*Quercus agrifolia*)	586	9	15	Fair	Moderate-High	Protected	$1,130.00	4.5
coast live oak (*Quercus agrifolia*)	587	13	20	Fair	Moderate-High	Protected	$2,350.00	6.5
coast live oak (*Quercus agrifolia*)	588	10	15	Fair	Low	Protected	$1,390.00	5
coast live oak (*Quercus agrifolia*)	589	8	15	Fair	Low	Protected	$890.00	4
coast live oak (*Quercus agrifolia*)	590	8	15	Fair	High	Protected	$890.00	4
coast live oak (*Quercus agrifolia*)	591	8, 8, 8, 5, 4	15	Good	High	Large Protected	$4,390.00	7.5
coast live oak (*Quercus agrifolia*)	592	10	15	Good	High	Protected	$1,950.00	5

Tree Species	I.D. #	Trunk Diameter (in.)	~ Canopy Diameter (ft.)	Condition	Expected Impact	Protection Status	Rounded Depreciated Value	Tree Protection Radii
coast live oak (*Quercus agrifolia*)	593	5, 4, 7, 6, 7, 1	20	Good	High	Large Protected	$3,290.00	6.5
coast live oak (*Quercus agrifolia*)	594	11	20	Good	Moderate-High	Protected	$2,360.00	5.5
coast live oak (*Quercus agrifolia*)	595	10	20	Good	High	Protected	$1,950.00	5
coast live oak (*Quercus agrifolia*)	596	10, 8, 6	20	Good	Low	Large Protected	$3,820.00	7
coast live oak (*Quercus agrifolia*)	597	12, 6, 5	20	Good	Moderate-High	Protected	$4,990.00	8
coast live oak (*Quercus agrifolia*)	598	12	20	Good	High	Protected	$2,810.00	6
coast live oak (*Quercus agrifolia*)	599	12, 11, 10	20	Good	Moderate	Large Protected	$7,800.00	10
coast live oak (*Quercus agrifolia*)	600	12	20	Good	High	Protected	$2,810.00	6
coast live oak (*Quercus agrifolia*)	886	11	20	Good	Moderate	Protected	$2,360.00	5.5
fern pine (*Afrocarpus gracilior*)	887	Multi 4	15	Good	High	Protected	$2,650.00	6
Stone pine (*Pinus pinea*)	888	7	10	Good	Moderate	Protected	$590.00	3.5
coast live oak (*Quercus agrifolia*)	889	9	15	Good	Low	Protected	$1,580.00	4.5
coast live oak (*Quercus agrifolia*)	890	30	45	Fair	Moderate-High	Large Protected	$12,500.00	15

Appendix C: Photographs

C1: Area where the driveway will extend into the landscape

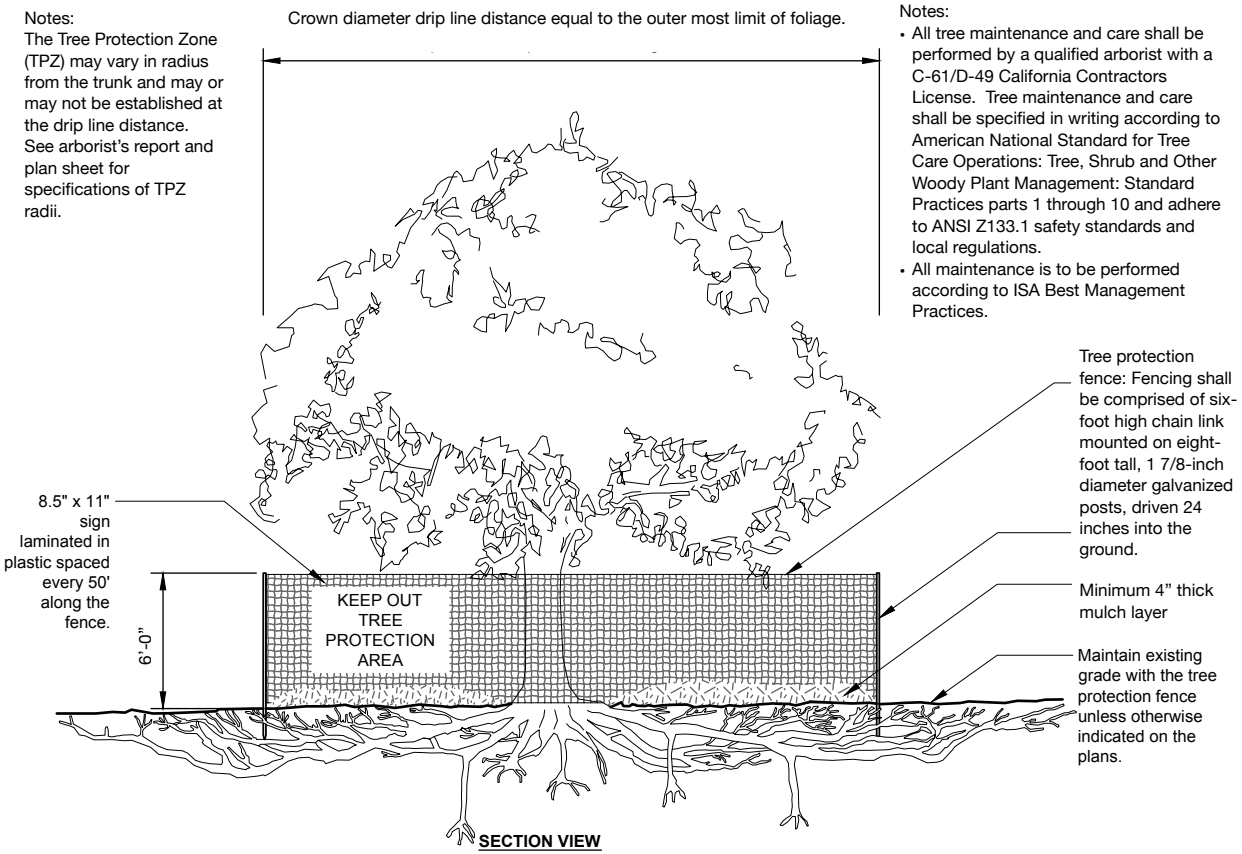
C2: Trees in the footprint of the proposed ADU (590 and 591)

C3: Slope where driveway comes up to ADU

C5: Trees adjacent to driveway

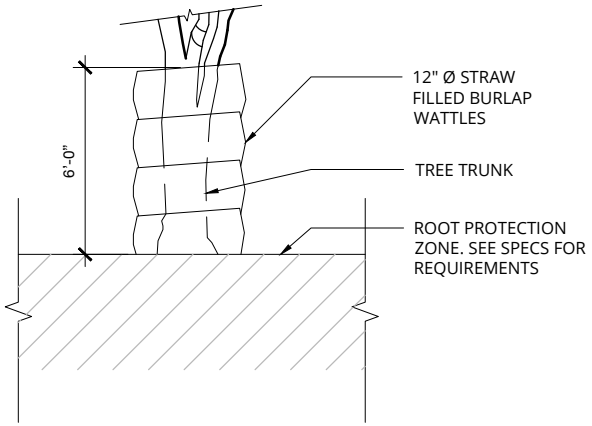
Appendix D: Tree Protection Guidelines

D1: Plan Sheet Detail S-X (Type I)



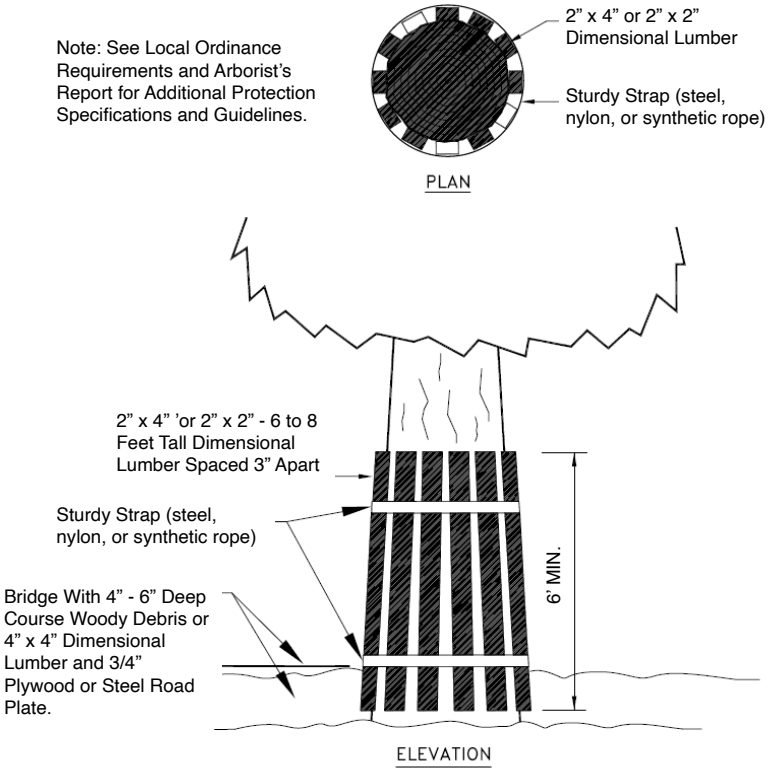
S-X TREE PROTECTION

D2: Plan Sheet Detail S-Y (Type III)



SECTION VIEW

S-Y TRUNK PROTECTION WITH WATTLE



Trunk Protection Vertical Timber Detail

D3: 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.

Prohibited Activities

The following are prohibited activities within the TPZ:

- Grade changes (e.g. soil cuts, fills);
- Trenches;
- Root cuts;
- Pedestrian and equipment traffic that could compact the soil or physically damage roots;
- Parking vehicles or equipment;
- Burning of brush and woody debris;
- Storing soil, construction materials, petroleum products, water, or building refuse; and,
- Disposing of wash water, fuel or other potentially damaging liquids.

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

Copyright