

# 121 Pepper Avenue Burlingame, CA Arborist Report 2024

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*Prepared For:*  
**John Phillips**

Site: 121 Pepper Avenue  
Burlingame, CA 94010



*Submitted by:*  
**David Beckham**  
Certified Arborist  
WE#10724A  
TRAQ Qualified



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# KIELTY

## ARBORISTS SERVICES LLC

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January 9th, 2025. **Revised April 7, 2025**

Attn: John Phillips

Subject: Tree protection plan for 121 Pepper Ave, Burlingame, CA 94010

## INTRODUCTION AND OVERVIEW

Kiely Arborists Services LLC visited the property at 121 Pepper Ave, Burlingame, on December 11, 2024, to evaluate the trees present with respect to the proposed construction project. The report below contains an analysis of the site visit. John Phillips is planning the construction of a new residence, entry courtyard, car courtyard, and swimming pool. The site consists of a residential home, driveway, landscaping, swimming pool, and mixed tree species. The findings and recommendations presented in this report are based on *Site Plan - A101-L* by A&E Design. This plan was electronically provided to us via email and is dated January 8th, 2025. By thoroughly analyzing this plan with our field observations, we have developed an accurate and reliable assessment of the tree conditions and how best to mitigate potential impacts.

### Data Summary:

Total Trees	Total Street Trees	Neighboring Trees	Protected Trees		Non-Protected Trees		Overall Condition Rating		
			Total	Proposed for Removal	Total	Proposed for Removal	<50%	50%-69%	70-100%
56	1	1	7	3	49	43	24	32	0

There are 55 trees located on the property, six of which are protected (#1-5, and #52). One neighboring tree was included in the survey (#6). Protected trees #3, 5, 52, and non-protected trees #8-51 are proposed for removal, as they are in decline or conflict with proposed project features. All other protected trees should be retained and protected as detailed in the recommendations below. With proper protection and cultural practices, all retained trees are expected to survive and thrive during and after construction.

## ASSIGNMENT

At the request of John Phillips, Kiely Arborists Services LLC conducted a site visit on December 11, 2024 to prepare a comprehensive Tree Inventory Report/Tree Protection Plan for the proposed construction project. This report is a requirement when submitting plans to the City of Burlingame.

The primary focus of this report is as follows:

- Identification and assessment of trees on the construction site that may be affected by the proposed development.
- Determination of potential impacts on tree health and stability, considering factors such as root damage and crown damage.
- Provision of recommendations for tree protection and preservation measures during the construction process to mitigate potential impacts.
- Ensuring compliance with local regulations pertaining to tree preservation, protection, and removal within the construction plans.

Please note that the report will provide specific details regarding tree assessments, impacts, and preservation measures.

The City of Burlingame requires the following tree reporting elements for development projects:

1. Inventory of all trees shown on architectural plans.
2. A map of tree locations.
3. Tree protection or removal recommendations for all trees over 14 inches in diameter, measured at 54 inches above natural grade.

## **LIMITS OF THE ASSIGNMENT**

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As part of this assessment, it is important to note that KIELTY Arborists Services LLC did not conduct an aerial inspection of the upper crown, a detailed root crown inspection, or a plant tissue analysis on the subject trees. Therefore, the information presented in this report does not include data obtained from these specific methods.

Furthermore, it is essential to clarify that no tree risk assessments were completed as part of this report unless stated otherwise. The focus of this assessment primarily centers on tree identification, general health evaluation, and the potential impacts of the proposed construction.

While the absence of these specific assessments limits the scope of the analysis, the findings and recommendations provided within this report are based on available information and observations made during the site visit.

## **METHOD OF INSPECTION**

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The inspections were conducted from the ground without climbing the trees. No tissue samples or root crown inspections were performed. The trees under consideration were identified based on the provided site plan. To assess the trees, their diameter at 54 inches above ground level (DBH or diameter at breast height) was measured using a D-Tape. For the surveying of multi-trunk trees, our methodology aligns with city ordinances. In cases where the city does not offer specific guidelines for measuring multi-trunk trees, we adhere to the standards outlined in the "Guide for Plant Appraisal, 10th Edition, Second Printing" by the Council of Tree and Landscape Appraisers. Additionally, the protected trees were evaluated for their health, structure, form, and suitability for preservation with the following explanation of the ratings:

## EVALUATION FIELDS

<b>Tree Tag #:</b> Identification number for individual trees.	<b>Protected Tree:</b> Specifies whether the tree is protected by the city or county ordinance.
<b>Height (ft.) / Canopy Spread (ft.):</b> Measures both the height of the tree and the spread of its canopy.	<b>Trunk (in.):</b> Measures the primary trunk's diameter at the required height.
<b>Comments:</b> Any additional notes or observations about the tree.	<b>Tree Picture:</b> A photograph of the tree for visual assessment and record-keeping.
<b>Preserve or Remove:</b> Indicates the recommended action based on the tree's condition.	<b>Common Name / Scientific Name:</b> Specifies the name of the tree, both in common terms and scientific nomenclature.
<b>If more than 1 Trunks, Total Diameter:</b> If the tree has multiple trunks, this field indicates the combined diameter of all trunks.	<b>6, 8, 10 Times the Diameter (ft.):</b> Provides calculations based on the diameter to assist in various tree protection requirements.
<b>Appraised Value:</b> An unbiased estimate of the tree's worth is performed in accordance with the current edition of the Guide for Plant Appraisal by the Council of Tree and Landscape Appraisers.	








\*Note that not all fields may be provided for every tree. Some might be left blank due to various reasons, such as lack of accessibility to the tree, incomplete data, or the parameter not being applicable for a particular tree.






<b>Tree Structure Ratings:</b>  <b>Poor:</b> Major uncorrectable structural flaws present; significant dead wood, decay, or multiple trunks; potentially hazardous lean.  <b>Fair:</b> Structural flaws exist but less severe; issues like slight lean and crowding on trunk; some uncorrectable issues through pruning.  <b>Good:</b> Minor flaws; mainly upright trunk, well-spaced branches; flaws correctable through pruning; symmetrical or mostly symmetrical canopy.	<b>Tree Health Ratings:</b>  <b>Poor:</b> Minimal new growth; significant dieback and pest infestation; expected not to reach natural lifespan.  <b>Fair:</b> Moderate new growth; canopy density 60-90%; potential external threats; not in decline but vulnerable.  <b>Good:</b> Vigorous growth; healthy foliage; 90-100% canopy density; expected natural lifespan.
<b>Suitability for Preservation:</b>  <b>Poor:</b> Adds little to landscape; poor health and potential hazards; unlikely to survive construction impacts.  <b>Fair:</b> Contributes to landscape; survival possible with protection during minor construction impacts.  <b>Good:</b> Valuable landscape asset; likely survival during minor to moderate construction impacts with protection.	<b>Tree Form Ratings:</b>  <b>Poor:</b> Highly asymmetric or abnormal form; visually unappealing; little landscape function.  <b>Fair:</b> Significant asymmetries; deviation from species norm; compromised function or aesthetics.  <b>Good:</b> Near ideal form; minor deviations; consistent aesthetics and function in landscape.








\*Suitability for Preservation: This rating is based solely on the tree itself, irrespective of potential construction impacts.


Overall Condition Ratings:	
Very Poor	1-29
Poor	30-49
Fair	50-69
Good	70-89
Excellent	90-100








The trees were assigned a condition rating based on a combination of existing tree health, tree structure, and tree form using the following scale.








Tree Tag #	Protected Tree	Preserve or Remove	Common Name / Scientific Name	Trunk (in.)	If more than 1 Trunk, Total Diameter	Height (ft.) / Canopy Spread (ft.)	Health Rating	Structural Rating	Form Rating	Suitability for Preservation	Overall Condition (0-100%)	Summary	Tree Picture #1
1	Yes	(P)	deodar cedar <i>Cedrus deodara</i>	42.8	-	80/50	Good	Poor	Good	Fair	55	5 feet from property boundary. Codominant at 30 feet. Previous limb loss.	
2	Yes	(P)	blue atlas cedar <i>Cedrus atlantica 'Glaucu'</i>	29	-	65/50	Fair	Poor	Fair	Fair	50	Codominant at 20 feet. Previous limb loss at the codominant union, suppressed.	
3	Yes	(R)	deodar cedar <i>Cedrus deodara</i>	41.7	-	80/50	Fair	Poor	Fair	Fair	45	Codominant at 30 feet. Previous limb loss. Debris and cavity at codominant union with included bark.	
4	Yes	(P)	European white birch <i>Betula pendula</i>	7,12,13	28	45/25	Good	Fair	Good	Good	60	10 feet from property boundary. 4 feet from driveway hardscape. Surface roots. Codominant at 18 inches.	
5	Yes	(R)	European white birch <i>Betula pendula</i>	12,11	23	45/25	Good	Fair	Good	Good	60	20 feet from property boundary. 4 feet from driveway hardscape. Surface roots. Codominant at 18 inches.	
6*	Yes	(P)	lemonwood <i>Pittosporum eugenioides</i>	8"x3	12	18/10	Fair-Poor	Poor	Poor	Poor	35	Neighboring tree. Street tree. At property boundary. Topped in past. Deadwood.	
7	No	(P)	European white birch <i>Betula pendula</i>	6	-	30/10	Fair	Good	Good	Good	60	At property boundary. Deadwood.	








Tree Tag#	Protected Tree	Preserve or Remove	Common Name / Scientific Name	Trunk (in.)	If more than 1 Trunk, Total Diameter	Height (ft.) / Canopy Spread (ft.)	Health Rating	Structural Rating	Form Rating	Suitability for Preservation	Overall Condition (0-100%)	Summary	Tree Picture #1
8	No	(R)	European white birch <i>Betula pendula</i>	8	-	30/10	Fair	Good	Good	Good	60	At property boundary. Deadwood.	
9	No	(R)	Japanese maple <i>Acer palmatum</i>	7,8,7	12	30/10	Good	Fair	Good	Good	60	Along property boundary. 4 feet from pathway. Privacy screen.	
10	No	(R)	Japanese maple <i>Acer palmatum</i>	6,4	9	30/10	Good	Fair	Good	Good	60	Along property boundary. 4 feet from pathway. Privacy screen.	
11	No	(R)	Japanese maple <i>Acer palmatum</i>	6,7,7	11	30/10	Good	Fair	Good	Good	60	Along property boundary. 4 feet from pathway. Privacy screen.	
12	No	(R)	Japanese maple <i>Acer palmatum</i>	6,6,6.5	12	30/10	Good	Fair	Good	Good	60	Along property boundary. 4 feet from pathway. Privacy screen.	
13	No	(R)	olive <i>Olea europaea</i>	13	-	30/20	Good	Fair	Fair	Good	55	Near existing structure. Codominant at 6.5 feet. Growing over terrace.	
14	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	








Tree Tag#	Protected Tree	Preserve or Remove	Common Name / Scientific Name	Trunk (in.)	If more than 1 Trunk, Total Diameter	Height (ft.) / Canopy Spread (ft.)	Health Rating	Structural Rating	Form Rating	Suitability for Preservation	Overall Condition (0-100%)	Summary	Tree Picture#1
15	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	
16	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	
17	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	
18	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	
19	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	
20	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	
21	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	

Tree Tag#	Protected Tree	Preserve or Remove	Common Name / Scientific Name	Trunk (in)	If more than 1 Trunk, Total Diameter	Height (ft) / Canopy Spread (ft)	Health Rating	Structural Rating	Form Rating	Suitability for Preservation	Overall Condition (0-100%)	Summary	Tree Picture #1
22	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	
23	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	
24	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	
25	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	
26	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	
27	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	
28	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	

Tree Tag#	Protected Tree	Preserve or Remove	Common Name / Scientific Name	Trunk (in.)	If more than 1 Trunk, Total Diameter	Height (ft.) / Canopy Spread (ft.)	Health Rating	Structural Rating	Form Rating	Suitability for Preservation	Overall Condition (0-100%)	Summary	Tree Picture #1
29	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	
30	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	
31	No	(R)	lemonwood <i>Pittosporum eugenioides</i>	6"x2	8	25/5	Fair-Poor	Poor	Poor	Fair	45	Along property boundary. Hedge maintained. Privacy screen.	
32	No	(R)	mayten <i>Maytenus boaria</i>	3	-	15/5	Fair	Fair	Fair	Fair	50	Along property boundary. Privacy screen. In raised planting bed.	
33	No	(R)	mayten <i>Maytenus boaria</i>	4	-	15/5	Poor	Fair	Fair	Poor	40	Along property boundary. Privacy screen. In raised planting bed. In decline, potentially dead.	
34	No	(R)	mayten <i>Maytenus boaria</i>	3	-	15/5	Poor	Fair	Fair	Poor	40	Along property boundary. Privacy screen. In raised planting bed. In decline, potentially dead.	
35	No	(R)	mayten <i>Maytenus boaria</i>	2.5	-	15/5	Fair	Fair	Fair	Fair	50	Along property boundary. Privacy screen. In raised planting bed.	

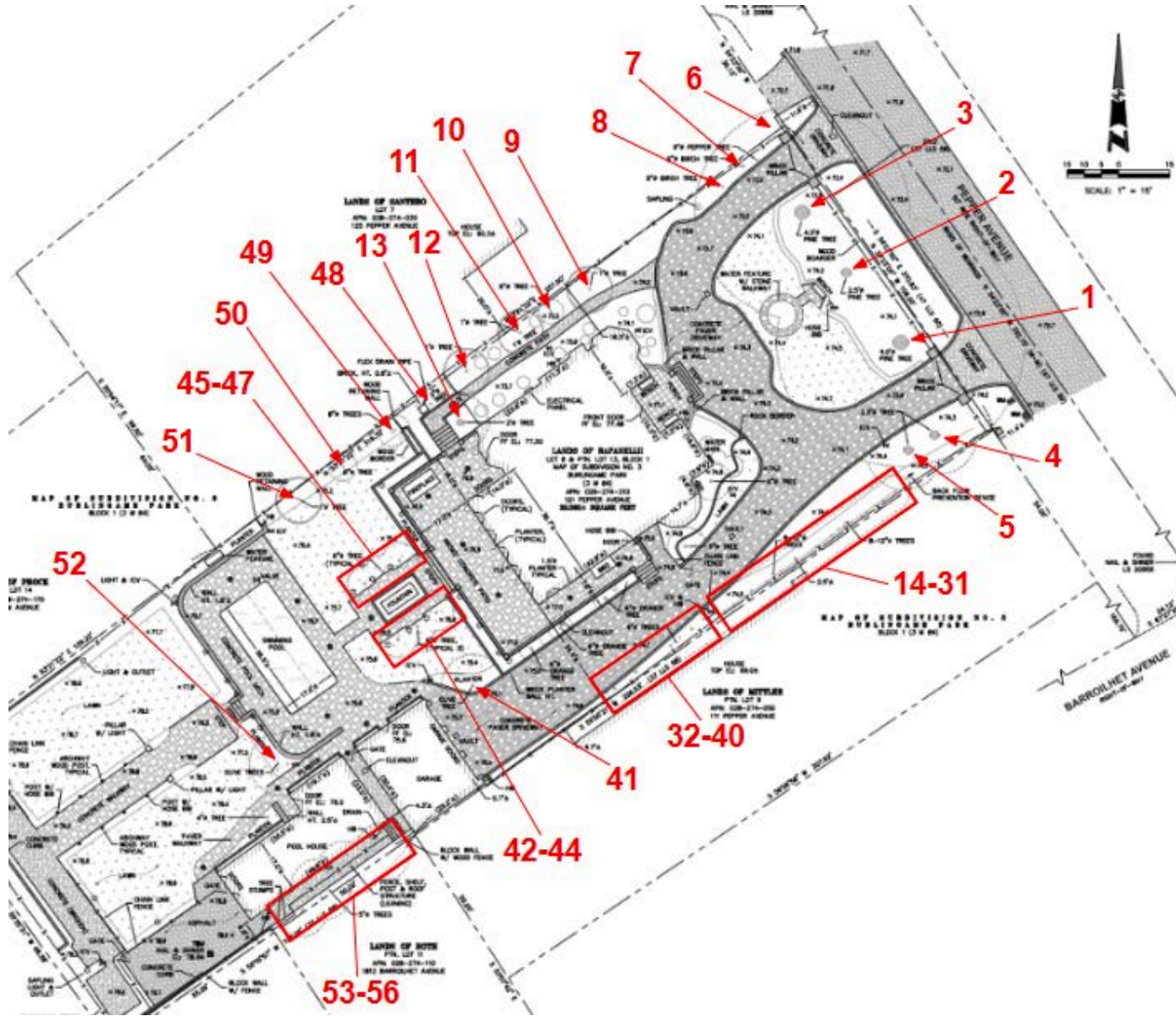
Tree Tag#	Protected Tree	Preserve or Remove	Common Name / Scientific Name	Trunk (in.)	If more than 1 Trunk, Total Diameter	Height (ft.) / Canopy Spread (ft.)	Health Rating	Structural Rating	Form Rating	Suitability for Preservation	Overall Condition (0-100%)	Summary	Tree Picture #1
36	No	(R)	mayten <i>Maytenus boaria</i>	4	-	15/5	Poor	Fair	Fair	Poor	40	Along property boundary. Privacy screen. In raised planting bed. In decline, potentially dead.	
37	No	(R)	mayten <i>Maytenus boaria</i>	4	-	15/5	Poor	Fair	Fair	Poor	40	Along property boundary. Privacy screen. In raised planting bed. In decline, potentially dead.	
38	No	(R)	mayten <i>Maytenus boaria</i>	4	-	15/5	Fair	Fair	Fair	Fair	50	Along property boundary. Privacy screen. In raised planting bed.	
39	No	(R)	mayten <i>Maytenus boaria</i>	4	-	15/5	Fair	Fair	Fair	Fair	50	Along property boundary. Privacy screen. In raised planting bed.	
40	No	(R)	mayten <i>Maytenus boaria</i>	5	-	15/5	Fair	Fair	Fair	Fair	50	Along property boundary. Privacy screen. In raised planting bed.	
41	No	(R)	olive <i>Olea europaea</i>	7,3,3	10	15/15	Good	Fair	Good	Good	65	In landscape area, 2 ft from driveway hardscape. Codominant at grade.	
42	No	(R)	mayten <i>Maytenus boaria</i>	5.4	-	18/8	Good	Fair	Good	Good	65	Next to pathway surrounding fountain. Topiary prune.	

Tree Tag#	Protected Tree	Preserve or Remove	Common Name / Scientific Name	Trunk (in.)	If more than 1 Trunk, Total Diameter	Height (ft.) / Canopy Spread (ft.)	Health Rating	Structural Rating	Form Rating	Suitability for Preservation	Overall Condition (0-100%)	Summary	Tree Picture #1
43	No	(R)	mayten <i>Maytenus boaria</i>	7	-	18/8	Good	Fair	Good	Good	65	Next to pathway surrounding fountain. Topiary prune.	
44	No	(R)	mayten <i>Maytenus boaria</i>	7	-	18/8	Good	Fair	Good	Good	65	Next to pathway surrounding fountain. Topiary prune.	
45	No	(R)	mayten <i>Maytenus boaria</i>	8	-	18/8	Good	Fair	Good	Good	65	Next to pathway surrounding fountain. Topiary prune.	
46	No	(R)	mayten <i>Maytenus boaria</i>	5.5	-	18/8	Good	Fair	Good	Good	65	Next to pathway surrounding fountain. Topiary prune.	
47	No	(R)	mayten <i>Maytenus boaria</i>	6.8	-	18/8	Good	Fair	Good	Good	65	Next to pathway surrounding fountain. Topiary prune.	
48	No	(R)	Japanese maple <i>Acer palmatum</i>	4	-	25/10	Good	Good	Good	Good	65	Along property boundary. Privacy screen.	
49	No	(R)	Japanese maple <i>Acer palmatum</i>	6	-	30/20	Good	Good	Good	Good	65	Along property boundary. Privacy screen.	

Tree Tag#	Protected Tree	Preserve or Remove	Common Name / Scientific Name	Trunk (in.)	If more than 1 Trunk, Total Diameter	Height (ft.) / Canopy Spread (ft.)	Health Rating	Structural Rating	Form Rating	Suitability for Preservation	Overall Condition (0-100%)	Summary	Tree Picture #1
50	No	(R)	Japanese maple <i>Acer palmatum</i>	7	-	30/21	Good	Good	Good	Good	65	Along property boundary. Privacy screen.	
51	No	(R)	Japanese maple <i>Acer palmatum</i>	12	-	30/22	Good	Good	Good	Good	65	Along property boundary. Privacy screen.	
52	Yes	(R)	olive <i>Olea europaea</i>	11.8	15	25/25	Good	Fair	Good	Good	65	Codominant at 2 ft. Next to pathway and pool house. Aesthetically pleasing tree.	
53	No	(P)	Port Orford cedar <i>Chamaecyparis lawsoniana</i>	8	-	25/8	Good	Fair	Good	Good	65	Limited access. Behind pool house. On property boundary	
54	No	(P)	Port Orford cedar <i>Chamaecyparis lawsoniana</i>	8	-	25/8	Good	Fair	Good	Good	65	Limited access. Behind pool house. On property boundary	
55	No	(P)	Port Orford cedar <i>Chamaecyparis lawsoniana</i>	8	-	25/8	Good	Fair	Good	Good	65	Limited access. Behind pool house. On property boundary	
56	No	(P)	Port Orford cedar <i>Chamaecyparis lawsoniana</i>	8	-	25/8	Good	Fair	Good	Good	65	Limited access. Behind pool house. On property boundary	

An (\*) appearing next to the tree tag number indicates a neighboring tree.

## TREE MAP



## OBSERVATIONS

### Species List:

55 trees were surveyed on the property, and consist of the following species:

- (2) deodar cedar - *Cedrus deodara*
- (1) Blue atlas cedar *Cedrus atlantica* 'Glauca'
- (4) European white birch - *Betula pendula*
- (8) Japanese maple - *Acer palmatum*
- (3) olive - *Olea europaea*
- (18) lemonwood - *Pittosporum eugenioides*
- (15) mayten - *Maytenus boaria*
- (4) port orford cedar - *Chamaecyparis lawsoniana*

One tree included in the survey is located on neighboring property, and consists of the following species:

- lemonwood - *Pittosporum eugenioides*

### Trees Proposed For Removal:

Total Removed Trees	Significant / Protected Trees	Non-Protected Trees
46	3	43

### Protected trees to be removed:



Tree tag #3 - deodar cedar was assigned a poor condition rating. The tree exhibits codominance of the main stem 30 feet above grade and previous limb loss. A cavity, debris, and included bark are visible at the codominant union. The cavity at the codominant union with included bark makes the tree a hazard to property residents, pedestrians, and construction personnel, as the tree is at risk of a significant leader failure. A Level II Tree Risk Assessment was performed on the tree and documentation will be included in this report outlining the findings.

A new, repositioned driveway is proposed for the area in between trees #2 and #3. The client proposed the removal of tree #2 in order to accommodate the new driveway, however we suggested that tree #2 is not a good candidate for removal. We discussed tree removal and design feasibility in length and concluded that best alternative for all stakeholders involves the removal of cedar #3, based on its poor condition rating and the condition issues that the tree displays.

The project's architect has studied feasibility in design changes. Here is the architect's response to the design alternatives: *The existing site design contains two existing driveways accessing the property from Pepper Avenue. Currently the north driveway is directly adjacent to the north property line, and comes fairly close to the protected tree that is indicated for removal. Our desire is to maintain*

*two access drives from Pepper to the site. Relocating the driveway farther away from the property line would be beneficial to the neighbors to the north, as well as provides a site design that accommodates required ADU parking. The arborist report describes the structural condition of this tree as poor, as well as poor overall condition and supports the removal of this tree. Alternative locations for the access driveway were studied, but alternative locations would impact the other protected trees that are in better condition than the tree proposed to be removed.*

Removal of deodar cedar #3 is recommended, and aligns with the following criteria set forth by the City of Burlingame: (1) ***The condition of the tree(s) with respect to disease; danger of falling; proximity to existing or proposed structures, yards, driveways and other trees; and interference with public utility services;*** (2) ***The necessity to remove the tree(s) in order to construct any proposed improvements to allow economic enjoyment of the property.***

### **Tree Risk Assessment:**

A Level II Tree Risk Assessment was conducted on deodar cedar #3. The tree parts of most concern are the large codominant leaders attached to the main stem approximately 30' above grade. The tree has multiple leaders with included bark observed in the union and a cavity. Swelling at the union was observed, indicating the presence of included bark. Load factors include strong winds and heavy rains, which are normal for the area. Prevailing winds in the area blow from the northwest. The load on the tree defect is moderate, with the likelihood of failure being probable due to the poorly formed codominant union with included bark and a cavity present. The targets observed on site are the future home, pedestrians, and vehicles parked on the driveway/street. The targets are within 1x the tree's drip line and have an occupancy rate ranging between constant and occasional. It is not practical to move the targets or to restrict access to areas surrounding the tree's target zone. The likelihood of impacting the three targets is high as the targets are positioned within the fall distance of the failing parts. Using the failure and impacts matrix as seen on the risk assessment form, it is likely that failure onto the targets #1 and #3 would happen at the point of failure with significant consequences for the home and vehicles. Failure onto target #2 (pedestrians) would happen at the point of failure with severe consequences for people walking within the fall distance of the crown/branches. Using the risk rating matrix as seen on the risk assessment form, the tree is at a high risk of a codominant leader failure impacting the three targets. Mitigation measures such as crown reduction pruning (within ANSI Standards) would reduce the risk to moderate.

### **Recommendation:**

The deodar cedar surveyed is recommended for removal based on my assessment, adhering to ISA guidelines:

- **Structural Concerns and Health Issues:** The tree exhibits condition issues and minor health problems, related to natural growth form, pruning, and competition with undesirable ground cover species, which makes it undesirable for preservation.
- **Safety Hazards:** Given the current site conditions, tree #3 in particular poses a potential risk to public safety and nearby structures.
- **Environmental Impact Considerations:** Removal of this tree will not negatively impact the local environment, and suitable replacement species are recommended to enhance ecological balance.
- **Adherence to Forestry Practices:** This removal aligns with good forestry practices, considering location on the property, non-native species, and potential limited remaining lifespan of the trees.


**Basic Tree Risk Assessment Form**

Client John Phillips Date 4/7/2025 Time 4:15 pm  
 Address/Tree location 121 Pepper Ave, Burlingame, CA 94010 Tree no. 3 Sheet 1 of 2  
 Tree species deodar cedar - Cedrus deodara dbh 41.7 Height 80' Crown spread dia. 50'  
 Assessor(s) David Beckham Time frame 2 years Tools used D-tape

**Target Assessment**

Target number	Target description	Target zone			Occupancy rate 1 - rare 2 - occasional 3 - frequent 4 - constant	Practical to move target?	Restriction practical?
		Target within drip line	Target within 1x Ht.	Target within 1.5 x Ht.			
1	home		✓		4	No	No
2	pedestrians		✓		2	No	No
3	vehicles on driveway/street		✓		3	No	No
4							

**Site Factors**

History of failures \_\_\_\_\_ Topography Flat ☒ Slope ☐ \_\_\_\_\_ % Aspect \_\_\_\_\_  
 Site changes None ☒ Grade change ☐ Site clearing ☐ Changed soil hydrology ☐ Root cuts ☐ Describe \_\_\_\_\_  
 Soil conditions Limited volume ☒ Saturated ☐ Shallow ☒ Compacted ☐ Pavement over roots ☐ \_\_\_\_\_ % Describe \_\_\_\_\_  
 Prevailing wind direction NW Common weather Strong winds ☒ Ice ☐ Snow ☐ Heavy rain ☒ Describe Normal for area

**Tree Health and Species Profile**

Vigor Low ☐ Normal ☒ High ☐ Foliage None (seasonal) ☐ None (dead) ☐ Normal 85 % Chlorotic \_\_\_\_\_ % Necrotic \_\_\_\_\_ %  
 Pests \_\_\_\_\_ Abiotic \_\_\_\_\_  
 Species failure profile Branches ☒ Trunk ☐ Roots ☒ Describe Overwatering and poor drainage can lead to root rot. Over-mature trees, or those

**Load Factors**

Wind exposure Protected ☐ Partial ☒ Full ☐ Wind funnelling ☐ \_\_\_\_\_ Relative crown size Small ☐ Medium ☐ Large ☒  
 Crown density Sparse ☐ Normal ☒ Dense ☐ Interior branches Few ☐ Normal ☒ Dense ☐ Vines/Mistletoe/Moss ☐ \_\_\_\_\_  
 Recent or planned change in load factors None

**Tree Defects and Conditions Affecting the Likelihood of Failure****— Crown and Branches —**

Unbalanced crown ☐ LCR 65 % Cracks ☐ \_\_\_\_\_ Lightning damage ☐  
 Dead twigs/branches ☐ \_\_\_\_\_ % overall Max. dia. \_\_\_\_\_ Codominant ☒ Cavity and debris at codominant union ☐ Included bark ☐  
 Broken/Hangers Number \_\_\_\_\_ Max. dia. \_\_\_\_\_ Weak attachments ☒ Included bark \_\_\_\_\_ Cavity/Nest hole \_\_\_\_\_ % circ.  
 Over-extended branches ☐ Previous branch failures ☒ \_\_\_\_\_ Similar branches present ☒  
 Pruning history Dead/Missing bark ☐ Cankers/Galls/Burls ☐ Sapwood damage/decay ☒  
 Crown cleaned ☐ Thinned ☐ Raised ☐ Conks ☐ Heartwood decay ☐  
 Reduced ☐ Topped ☐ Lion-tailed ☐ Response growth \_\_\_\_\_  
 Flush cuts ☐ Other \_\_\_\_\_  
 Main concern(s) Previous limb loss. Narrow angle of attachment for multiple codominant branches.

Load on defect N/A ☐ Minor ☐ Moderate ☒ Significant ☐  
 Likelihood of failure Improbable ☐ Possible ☐ Probable ☒ Imminent ☐

**— Trunk —**

Dead/Missing bark ☐ Abnormal bark texture/color ☐  
 Codominant stems ☐ Included bark ☐ Cracks ☐  
 Sapwood damage/decay ☐ Cankers/Galls/Burls ☐ Sap ooze ☐  
 Lightning damage ☐ Heartwood decay ☐ Conks/Mushrooms ☐  
 Cavity/Nest hole \_\_\_\_\_ % circ. Depth \_\_\_\_\_ Poor taper ☐  
 Lean \_\_\_\_\_ ° Corrected? \_\_\_\_\_  
 Response growth \_\_\_\_\_  
 Main concern(s) \_\_\_\_\_

Load on defect N/A ☐ Minor ☐ Moderate ☒ Significant ☐  
 Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐

**— Roots and Root Collar —**

Collar buried/Not visible ☐ Depth \_\_\_\_\_ Stem girdling ☐  
 Dead ☐ Decay ☐ Conks/Mushrooms ☐  
 Ooze ☐ Cavity ☐ \_\_\_\_\_ % circ.  
 Cracks ☐ Cut/Damaged roots ☐ Distance from trunk \_\_\_\_\_  
 Root plate lifting ☐ Soil weakness ☐

Response growth \_\_\_\_\_  
 Main concern(s) \_\_\_\_\_

Load on defect N/A ☐ Minor ☐ Moderate ☐ Significant ☐  
 Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐

Risk Categorization																							
Condition number	Tree part	Conditions of concern	Part size	Fall distance	Target number	Target protection	Likelihood												Consequences				Risk rating of part (from Matrix 2)
							Failure				Impact				Failure & Impact (from Matrix 1)				Negligible	Minor	Significant	Severe	
							Improbable	Possible	Probable	Imminent	Very low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely					
1	Crown and Branches	Codominant union, included bark	20"	50	1	none	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	high		
			20"	50	2	none	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	high		
			20"	50	3	none	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	high		
2							<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			
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							<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			
3							<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
							<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			
							<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			
4							<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
							<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			
							<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			

Matrix 1. Likelihood matrix.

Likelihood of Failure	Likelihood of Impacting Target			
	Very low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Matrix 2. Risk rating matrix.

Likelihood of Failure & Impact	Consequences of Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

Notes, explanations, descriptions see Arborist report

## Mitigation options

Crown reduction pruning

Residual risk

Residual risk moderate

Residual risk

Residual risk

Overall tree risk rating Low ☐ Moderate ☐ High ☒ Extreme ☐Work priority 1 ☐ 2 ☐ 3 ☐ 4 ☐Overall residual risk Low ☒ Moderate ☐ High ☐ Extreme ☐Recommended inspection interval 1 yearData ☒ Final ☐ Preliminary Advanced assessment needed ☒ No ☐ Yes-Type/ReasonInspection limitations ☒ None ☐ Visibility ☐ Access ☐ Vines ☐ Root collar buried Describe

**PHOTOS OF TREE #3**



**Showing poor structure with multiple codominant leaders with included bark**



**Showing previous limb loss (left and middle), showing cavity at union (right)**



Tree tag #5 - European white birch was assigned a fair condition rating. The tree is located 20 feet from the property boundary, and 4 feet from the existing driveway hardscape. Codominance of the main stem occurs 18 inches above grade, and surface roots are visible under the tree's dripline.

A new, concrete driveway bordered by permeable pavers is proposed for construction where the birch tree is located on the landscape. Birch species generally have shallow root systems that are easily damaged by soil compaction, and are highly sensitive to heat, drought, and soil disturbance.

Extensive digging, soil disturbance, and cutting of roots, from demolition of existing features and new construction, will lead to a reduction in tree health and stability, and potentially tree mortality.

Removal tree #5 is requested to allow for site improvements. The proposed tree removals align with the following criteria set forth by the City of Burlingame:

- (1) The condition of the tree(s) with respect to disease; danger of falling; proximity to existing or proposed structures, yards, driveways and other trees; and interference with public utility services;*
- (2) The necessity to remove the tree(s) in order to construct any proposed improvements to allow economic enjoyment of the property;*



Tree tag #52 - olive was assigned a fair condition rating. This aesthetically pleasing tree is located next to the existing pathway and pool house. Codominance of the main stem occurs 2 feet above grade.

A new swimming pool is proposed for construction where the tree is located on the landscape. Extensive digging, soil disturbance, and cutting of roots, from demolition of existing features and new construction, will lead to a reduction in tree health and stability, and potentially tree mortality.

Removal tree #52 is requested to allow for site improvements. The proposed tree removals align with the following criteria set forth by the City of Burlingame: *(1) The condition of the tree(s) with respect to disease; danger of falling; proximity to existing or proposed structures, yards, driveways and other trees; and interference with public utility services;*

(2) *The necessity to remove the tree(s) in order to construct any proposed improvements to allow economic enjoyment of the property;*

### **Non-Protected Trees to be Removed:**

Removal of non-protected trees #8 - #51 is requested to allow for site improvements. The proposed tree removals align with the following criteria set forth by the City of Burlingame:

- (1) *The condition of the tree(s) with respect to disease; danger of falling; proximity to existing or proposed structures, yards, driveways and other trees; and interference with public utility services;*
- (2) *The necessity to remove the tree(s) in order to construct any proposed improvements to allow economic enjoyment of the property;*

### **Tree Requirements and Reforestation**

The following updated tree replacement ordinance was adopted by the City of Burlingame on December 16, 2024. *Planted landscape tree(s) must be vigorous, well-formed and meet the standards established according to ANSI 300. The Director may require specific species, planting locations, forms and/ or size landscape trees as replacement trees or to satisfy reforestation requirements. Off- site plantings within the 300' neighborhood will be considered at the sole discretion of the Director.*

*All required Protected tree replacement and development reforestation trees, existing or new, become Protected Trees regardless of size and must be disclosed upon sale or transfer of real property.*

***b) Development Reforestation Requirements. Development plans must include reforestation of the subject property with landscape trees as required below:***

DEVELOPMENT TYPE	REFORESTATION PLAN REQUIREMENTS
One and Two-Unit Dwellings	One Landscape Tree/ 1,000 Square Feet of Habitable Space on the Lot
Multi-Unit Dwellings	One Landscape Tree/ 2,000 Square Feet of Total Structural Lot Coverage and One Landscape Tree/ 2,000 Square Feet of Paving
Commercial Zoning	One Landscape Tree/ 5,000 Square Feet of Total Structural Lot Coverage and One Landscape Tree/ 5,000 Square Feet of Paving

***All reforested trees must be at least 24" box tree size, unless otherwise approved by the Director.***

*Reforestation Plan Requirements shall be calculated by rounding the appropriate square footage to the nearest thousand.*

***c) Replacement and Reforestation Options. A tree replacement or reforestation plan must include one or more of the following options:***

***1) On-Site or Off-Site Replacement/ Reforestation. A tree replacement or reforestation plan that includes on-site or off-site replacement shall specify where the trees shall be planted and how the trees shall be monitored and maintained for a time period as determined by the Director. The Director may require security to ensure that the replacement trees survive a minimum of five years. Off-site plantings within 300' of the subject property will be considered at the sole discretion of the Director.***

2) *Payment of an In-Lieu Fee as adopted by Resolution of the City Council. At the discretion of the Director, the applicant may pay an in-lieu fee for inability to replant or reforest trees as required. The in-lieu fee amount is established by resolution of the City Council, and may change from time to time. Such fees shall be deposited in the Tree Planting and Replacement Fund as described in Section 11.06.080.*

3) *Credit for Existing Landscape Trees. An applicant subject to reforestation requirements may be entitled to replacement credit when the applicant preserves trees that are on the same lot. To be entitled to the credit, the preserved trees must be viable long-term and meet the definition of landscape tree. The Director shall determine whether a tree is viable long-term by considering the location of the trees, the quality of the environment in which the trees are located, potential impacts to the trees from any proposed development, and other factors that the director deems relevant. Such trees included as credit shall be considered protected regardless of size.*

d) *Waiver Replacement Requirement. The Director may waive the tree replacement requirements in this Section in whole or part, if the subject property has, in the Director's sole discretion, the maximum number of landscape trees existing that the subject property can support according to best management practices.*

### **Replacement Tree Plan:**

The City of Burlingame *Replacement Requirements for private Protected Tree removals* was used to establish the number of replacement trees required on site. A quantity of (10) 24" box-size trees are required on-site in order to retain the net tree canopy goal desired by the City of Burlingame. Below is a detailed list of the trees to be removed, followed by the number of replacement trees required to fulfill city requirements. Along with the reforestation trees, an additional (6) 24" box-size trees are required to be planted on site.

- Tree #3 - deodar cedar, 41.7 DSH (protected). **Replacement trees needed: (2) 24" box-size trees.**
- Tree #5 - European white birch (protected). 2x stem (12,11 DSH, 23" diameter 18" above grade). **Replacement trees needed: (1) 24" box-size tree.**
- Tree #52 - olive (protected). 2x stem (11,8 DSH, 15" diameter 24" above grade). **Replacement trees needed: (1) 24" box-size tree.**

e) *California Native Planting. In recognition of the importance of native planting for the benefit of local ecology, an applicant is entitled to use the requirements below if California Native Trees and/or Plants are utilized for replacement requirements. The Director will approve and maintain a list of California Native Trees or Plants for purposes of this Section, which may be amended from time to time. If used, the applicant may plant as follows: 2) If planting according to 11.06.100(a)(2)*

<u>DSH EQUIVALANT</u>	<u>REPLACEMENT LANDSCAPE TREE CONTAINER SIZE</u>
<u>Two-Inch</u>	15-Gallon Container
<u>Four-Inch</u>	24-Inch Box
<u>Six-Inch</u>	36-Inch Box
<u>Eight-Inch</u>	48-Inch Box
<u>Ten-Inch</u>	60-Inch Box

*Development Reforestation Requirements: Per the updated BMMC 11.06: Development plans must include reforestation of the subject property with one landscape tree per 1,000 sq ft of habitable space, excluding ADU square footage. This project requires 9 single-trunked landscape trees:*

- *Trees may be existing or new – new trees are to be a minimum 24-inch box size.*
- ***Required trees may not be fruit or nut trees, Palms, Italian Cypress or Japanese Maple.***
- *Required trees must have a mature height of over 15 feet and mature width of over 10 feet.*
- *All required trees must be in good condition at the final Arborist inspection.*
- *Street trees do not count towards the required total.*
- ***NOTE: All required landscape trees, existing or new, become Protected Trees regardless of size and must be disclosed upon sale or transfer of real property.***

## PROJECT PLAN REVIEW

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The following report's recommendations are contingent upon the contractor adhering to the stated responsibilities. It is the contractor's responsibility to contact the project arborist to schedule all required inspections promptly. Failure to schedule these inspections as needed may result in fines or stop work orders from the city.

Schematic design plans titled *Site Plan - Existing Trees A101-L* by A&E Design, dated November 14, 2024, and survey plans titled *Topographic Survey* by Quiet River Land Services Inc, dated March 14, 2024 were reviewed for the findings in this report. Work proposed for the site will include demolition of existing structures and landscaping, and construction of a new residence, entry courtyard, car courtyard, and swimming pool. Construction impacts on retained protected trees are expected to be non-existent to minor; however, tree protection measures are necessary to ensure tree health and integrity during construction activity.

Protected trees #1, 2, 4, 6, 7, and 53-56 are required to be protected by Type I Tree Protection Fencing. This fencing type is specifically designed for trees in a large area of the landscape that will have construction activity taking place near or at the dripline of trees. The fencing shall be installed to completely enclose the tree's drip line, where possible, ensuring the protection of the trees while maintaining access to areas of construction activity.

### **General construction recommendations**

Maintain all existing grades underneath the driplines of protected trees for the following reasons:

#### **Concerns regarding soil grading near protected trees:**

Grading often involves the use of heavy machinery and equipment, which can result in soil compaction. Compacted soil restricts the movement of air, water, and nutrients within the soil, making it difficult for tree roots to access essential resources. Compacted soil can also inhibit root growth and development, leading to poor tree health and vitality.

**Root damage:** During grading activities, tree roots may be inadvertently severed, injured, or exposed. Tree roots are critical for anchoring the tree and absorbing water and nutrients from the soil. Damage to the root system can disrupt the tree's ability to take up essential resources, weakening its overall health and stability.

**Soil Erosion:** Grading can disrupt the natural drainage patterns of the land, leading to increased soil erosion. When soil erodes, it can expose tree roots, destabilize the tree's base, and affect the tree's

ability to acquire nutrients. Excessive soil erosion can also result in the loss of topsoil, which is rich in organic matter and essential for healthy tree growth.

**Changes in Water Availability:** Altering the topography through grading can impact water availability and drainage around trees. If grading changes the natural flow of water, it can cause water logging or excessive water runoff, both of which can have detrimental effects on tree health. Insufficient water availability can lead to drought stress, while excessive water accumulation can lead to root suffocation and fungal diseases.

**Structural damage:** Grading activities near trees can cause physical damage to the tree's trunk, branches, or canopy. Machinery, equipment, or debris may inadvertently come into contact with the tree, leading to wounds or injuries. Structural damage weakens the tree's integrity and can create entry points for pests, diseases, or decay.

To ensure the health and resilience of trees impacted by construction activities, a meticulously planned approach that includes both pre-construction and post-construction care is essential. This comprehensive strategy is designed to mitigate stress, promote root and shoot growth, and ensure long-term tree vitality.

#### **Driveway construction near protected trees:**

The new driveway is proposed within the dripline of protected trees #1, 2, and 4. Damage to roots as a result of site development could compromise tree stability and create hazardous conditions for construction personnel, site visitors, and the residents of the new home. Additionally, birch trees have shallow root systems and are sensitive to mechanical damage from construction activity, and changes in soil conditions, such as poor drainage, drought conditions or irregular watering that can lead to root rot and disease.

The existing driveway is recommended to be retained as long as possible as an additional tree protection measure for these trees. It is recommended to demolish and replace the driveway during the landscaping phase of the project. The driveway is recommended to be carefully removed by hand under the direct supervision of the project arborist when working within 36 feet of tree #1, 24 feet of tree #2, and 23 feet of tree #4 (10x the diameter). A jackhammer can be used to break the material into small hand manageable sized pieces. All roots encountered during this process are recommended to stay as damage free as possible. Acceptable hand tools include rotary hammer with clay spade attachment as well as an air knife.

Encountered roots shall be exposed and wrapped/covered in layers of wetted down burlap to help avoid root desiccation. The contractor is recommended to wet down the burlap daily while exposed. The base rock section for the driveway near tree #1 and #4 is recommended to be no deeper than the existing base rock section. New base rock shall then be packed around tree roots with the driveway built on top of the tree's root zone while keeping all roots intact and as damage-free as possible.

For the new driveway near tree #2 It is recommended to construct the driveway using Biaxial Geogrid (Tensar BX-1100 or equivalent). Biaxial Geogrid can be used as a subgrade layer below aggregate for reinforcing the driveway. The Geogrid allows for pinning down of the surrounding soil and can be constructed over tree root zones. Using the Geogrid material will improve filtration, reduce the base thickness needed and allow for compaction of underlying parent soil to be no greater than 85-90%, reduce incidents of tire ruts and soil migration, and relieve the roots from strain/compaction caused by vehicles. No more than 6" of excavation (mostly for rough grading and scarifying the soil) shall be allowed for the driveway construction when working within 24.1 feet (10x diameter) from tree #2. The existing grade and proposed driveway grade will need to be nearly identical to allow for this work to take place with minimal impacts to the tree. The finished grade of the driveway is recommended to be at or slightly above the

existing grade. After minor grading and scarifying the soil has been completed, the Geogrid material shall be laid directly on top of the soil with the driveway being constructed entirely on top of the root zone. Edging for the driveway construction is recommended to be supported by individual pins as excavating for a continuous edge would nullify the use of Geogrid. By building the driveway using the techniques described above, the impact to tree #2 would be minor. Because the driveway work is to take place within the tree's tree protection zone, the work will require the direct supervision of the Project Arborist. Grading and scarifying the soil will need to be done by hand under the Project Arborist's supervision when working within 24.1 feet of tree #2. Any exposed roots during the driveway work will need to be kept moist by covering roots in layers of wetted-down burlap to help avoid root desiccation. Exposed roots will be required to be documented by the Project Arborist. Before the driveway work is to start, the tree protection zone is recommended to be heavily irrigated using 50 gallons of water. The top foot of the soil within the tree protection zone is recommended to be saturated.

**Pre-Construction Care:**

In the pre-construction phase, it is critical to prepare the trees for the upcoming stress and disturbances. Implementing a deep watering schedule is foundational, ensuring trees receive adequate moisture deep within their root zones. Depending on the recommended soil test analysis, fertilizing may be needed. Within the tree protection zones, it is recommended that an inline drip emitter system be installed in a grid-like manner to provide deep irrigation during the dry season. The irrigation system should be placed on top of the existing grade and require no excavation. The irrigation system shall be turned on by the project arborist as seen fit during the required monthly inspections. Regardless of the soil test results, the use of NutriRoot is still strongly advisable for trees that will be impacted by construction activities. The stresses caused by construction, such as root disturbance, soil compaction, and changes in water availability, can severely affect a tree's health. NutriRoot provides essential nutrients, promotes root growth, and enhances water management, helping trees withstand and recover from these stresses. Importantly, NutriRoot is low in macronutrients, which means it should not cause issues associated with over-fertilization, such as nutrient runoff or root burn. This makes it a safe and effective option for supporting the resilience and vitality of trees during and after construction, ensuring their long-term health and stability.

**Post-Construction Care:**

Following the completion of construction activities, it's vital to continue supporting the trees' recovery and growth. Annual inspections by a Certified Arborist are recommended to ensure the tree remains in good health. Maintaining the deep watering schedule will ensure that trees remain adequately hydrated. A post-construction application of NutriRoot is advised to sustain soil moisture control and support ongoing root health. It is also pertinent to reintroduce microbial inoculants to restore beneficial microbial communities that may have been disrupted during construction. Additional applications of soil amendments like Biochar and HydraHume will continue to enhance soil structure, fertility, and water-holding capacity, supporting the trees' long-term health and resilience. Employing air spading techniques can also be advantageous to aerate the soil and gently introduce these amendments without causing root damage.

By adopting this dual-phase approach, (pre- and post-construction) leveraging a combination of deep watering, nutritional support, and soil health enhancement, the strategy aims to not only protect the trees during construction but also promote their recovery and thriving in the post-construction landscape. This holistic care

plan underscores a commitment to sustainable tree management, ensuring that the trees remain a valuable and vibrant part of the ecosystem for years to come.

## TREE PROTECTION PLAN

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### Detailed Tree Protection Plan

For the aforementioned tree protection plan, this detailed guide has been designed by Kielty Arborists Services LLC. The following section offers an in-depth perspective on the recommended tree preservation guidelines. The aim is to ensure the conservation, vitality, and beauty of trees during construction and developmental endeavors, mitigating any potential detrimental effects. Adherence to these guidelines is essential to uphold both the ecological significance and visual allure of trees within the designated project vicinity. Effective tree protection during construction or development projects requires the use of fencing to demarcate and protect sensitive areas around trees. Should you have any questions or require further clarification, please contact Kielty Arborists Services directly.

### Fencing Specifications:

The tree protection fencing should be established and maintained throughout the entire length of the project. It's essential that no equipment, materials, or debris are stored or cleaned inside these protection zones. The zones should remain free from human activity unless explicitly authorized. The choice of fencing type depends on the tree's location and the nature of the surrounding environment.

### Type I Tree Protection:

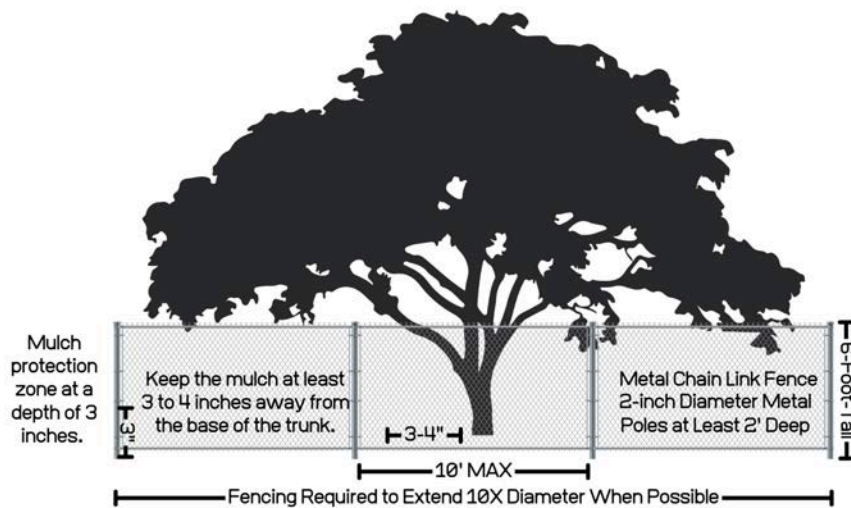
**Description:** This is the most comprehensive form of tree protection fencing. It encompasses the full canopy dripline or Tree Protection Zone (TPZ) of trees designated for preservation.

**Application:** Typically used in areas where trees are a significant distance away from construction activity or when trees have a large canopy spread.

### Specifications:

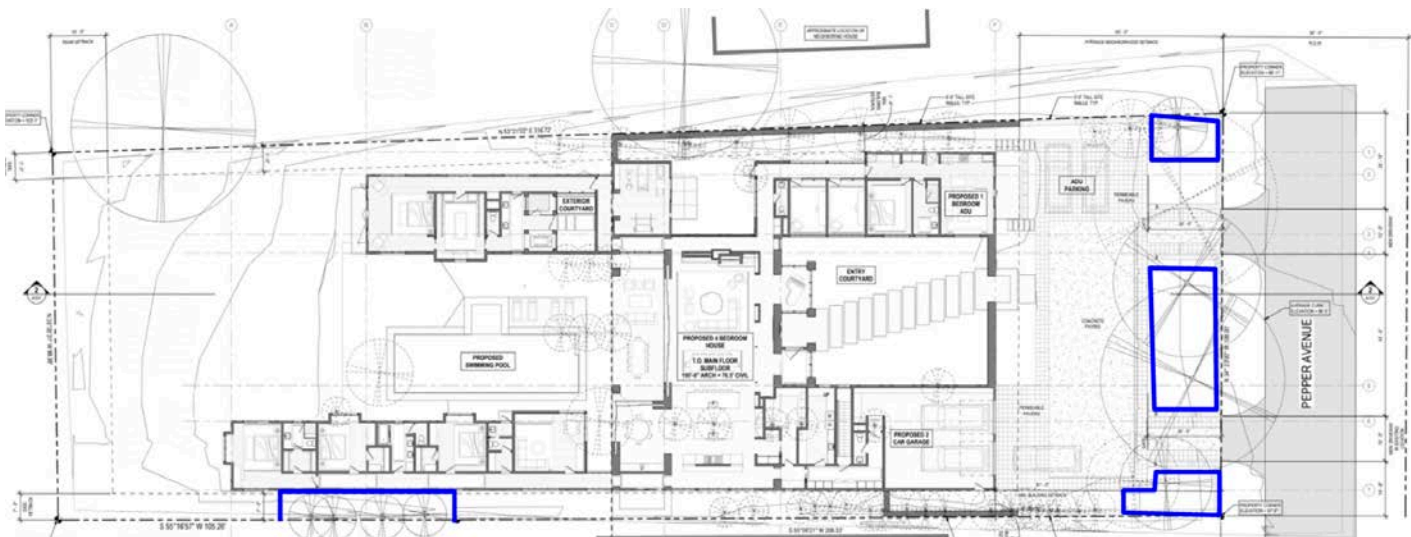
The fencing shall remain intact throughout the duration of the project or until activities within the TPZ are finalized. Tree protection fencing should be a 6-foot-tall metal chain link type supported by 2-inch thick diameter metal posts pounded into the ground to a depth of no less than 2 feet, ensuring stability even in challenging conditions. Poles should be spaced no more than 10 feet apart from center to center, providing a consistent and strong barrier. For trees near existing hardscapes or structures, tree protection fencing shall be placed as close as possible while still allowing access. Sensitive areas may require a landscape barrier if fencing needs to be reduced for access reasons. The location for tree protection fencing for the protected trees on site should be placed at 10x the tree diameters where possible (TPZ). All other non-protected trees are recommended to be protected by fencing placed at the drip line. No equipment or materials should be stored or cleaned inside protection zones. Apply mulch to the tree protection zones at a depth of 3 inches. Spread the mulch evenly throughout the designated area, ensuring it extends to, but does not touch, the tree trunk. Keep the mulch at least 3 to 4 inches away from the base of the trunk to prevent moisture buildup and potential rot. This will provide the necessary benefits of mulching, such as moisture retention and temperature regulation, while helping to maintain tree health. Signs should be placed on fencing signifying "Tree Protection Zone - Keep Out". If fencing needs to be reduced for access or any other reasons, the non-protected areas must be protected by a landscape buffer. All tree protection and inspection schedule measures, design recommendations, watering,

and construction schedules shall be implemented in full by the owner and contractor. Trees #1, 2, 4, 6-8, and 53-56 are to be protected by Type I Tree Protection Fencing.



## Type I Fencing

# TREE PROTECTION MAP



**Approximate placement area of Type I Tree Protection Fencing outlined in BLUE.**

## Staging

All tree protection measures must be in place before the start of construction. An inspection prior to the start of construction is often required by the town. All vehicles must remain on paved surfaces if possible. Existing pavement should remain and should be used for staging. If vehicles are to stray from paved surfaces, 6 inches of

chips shall be spread, and plywood laid over the mulch layer. This type of landscape buffer will help reduce the compaction of desired trees. Parking will not be allowed off the paved surfaces

### **Trenching/excavation**

Trenching or excavation for irrigation, drainage, electrical, foundation, or any other reason shall be done by hand when inside the dripline of a protected tree. Hand digging and the careful placement of pipes below or besides protected roots will significantly reduce root loss, thus reducing trauma to the tree. All trenches shall be backfilled with native materials and compacted to near their original level, as soon as possible. Trenches to be left open for a period of time (24 hours), will require the covering of all exposed roots with burlap and be kept moist. The trenches will also need to be covered with plywood to help protect the exposed roots.

### **Grading**

All existing grades underneath the dripline of a protected tree shall remain as is where possible. Grading within the dripline of a protected tree is required to be done under the supervision of the project arborist.

### **Irrigation**

Irrigating the retained mature trees in the landscape is important to ensure their health and vitality. Proper watering can help the trees continue to thrive. Deep irrigation is recommended to take place every other week during the dry season. During the dry season, trees typically need deep, infrequent watering. Watering every 2 weeks is sufficient for the retained trees on this site. Applying water slowly and consistently until it penetrates at least 12-18 inches into the soil is recommended. Avoid spraying water directly on the trunks, as this can lead to disease and decay. Mulch is recommended to be maintained with mulch added over time, as needed. Mulch helps retain soil moisture, regulates temperature, and prevents weeds, which can compete with the tree for water. The use of soaker hoses or an inline drip emitter system set up in a grid like manner to provide deep irrigation during the dry season is recommended. The irrigation system should be placed on top of grade and require no excavation. This will help to keep the trees healthy.

### **Tree Pruning**

Tree pruning during construction is not just about aesthetics and safety; it's also about adhering to best practices and standards set by professional bodies like the International Society of Arboriculture (ISA) and the American National Standards Institute (ANSI A300 Pruning Standards). The ISA sets rigorous standards to ensure trees are cared for sustainably and scientifically. Under these guidelines, and for the well-being of trees during construction, it's imperative to have an expert arborist oversee any pruning. Their knowledge guarantees that only the necessary branches are removed, ensuring both safety and tree health. The guideline to prune no more than 25% of the tree's total foliage is grounded in sound arboricultural practices. This safeguards the tree's photosynthetic capability, reduces undue stress, and preserves the balance between its roots and canopy. Homeowners should be aware of these standards and ensure they are being met, trusting in the expertise of their arborist and keeping open communication about their tree care decisions. This approach not only ensures the tree's compatibility with new construction aesthetics but also its long-term health and vitality.

### **Traffic Within TPZs**

Strictly prohibit driving vehicles or heavy foot traffic on bare soil within the TPZs of protected trees. Such activities can crush roots directly and compact the soil, impeding oxygen and water infiltration. In areas without existing pavement, use temporary anti-compaction materials, such as wood chips covered with plywood, to

prevent damage to tree roots (landscape barrier). Temporary pathways or boardwalks can be constructed to facilitate access while minimizing soil compaction within the TPZ.

### **Chemical and Material Handling**

Store chemicals and construction materials away from TPZs to prevent accidental spills or exposure that may harm tree health. Follow proper handling and disposal procedures for chemicals to ensure compliance with environmental regulations. Minimize the use of toxic materials near trees and opt for environmentally friendly alternatives whenever possible.

### **Monitoring and Inspection**

Regularly monitor and inspect the tree protection measures throughout the construction process to ensure their effectiveness and compliance with the Tree Preservation Plan. Assign a qualified individual, such as a project arborist or certified arborist, to conduct periodic inspections and provide recommendations for any necessary adjustments or improvements. Maintain detailed records of inspections, including dates, findings, and any actions taken.

### **Post-Construction Maintenance**

After construction is completed, continue monitoring the health and condition of preserved trees to address any potential issues promptly. Implement post-construction maintenance practices such as watering, mulching, pruning, and fertilization as needed to support the recovery and long-term health of the trees. Regularly assess the trees for signs of stress, disease, or structural instability and take appropriate measures, including consulting with a certified arborist if necessary.

### **Compliance with Environmental Laws**

Ensure full compliance with all applicable local, state, and federal environmental laws, regulations, and permit requirements pertaining to tree protection during construction. Familiarize yourself with specific regulations regarding tree preservation in your jurisdiction and consult with local authorities or arborists for guidance if needed.

### **Responsibility**

Designate a responsible person or team within the project organization to oversee the implementation and enforcement of the Tree Preservation Plan. Clearly communicate the roles and responsibilities of all parties involved in the construction project regarding tree protection.

### **Emergency Procedures**

Develop clear procedures to follow in the event of emergencies that may impact tree preservation, such as severe storms, accidents, or unexpected tree health issues. Ensure that emergency response plans address prompt actions to mitigate potential risks to trees and contact qualified professionals, such as arborists or tree care companies when needed.

### **Communication and Training**

Facilitate effective communication among all project stakeholders, including contractors, subcontractors, architects, engineers, and landscape professionals, regarding the importance of tree preservation and the specific guidelines to follow. Conduct training sessions or workshops to educate personnel.

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## PURPOSE & USE OF THE REPORT

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This report informs tree management decisions for the construction project and provides recommendations to maximize tree survival. It serves as a valuable resource for stakeholders, facilitating informed discussions and sustainable tree management practices.

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## TESTING & ANALYSIS

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In order to assess the trees, a thorough examination was conducted using a variety of methods. For trees with accessible trunks, precise measurements of the Diameter at Breast Height (DBH) were taken using a specialized diameter tape measure. In cases where the trunks were not readily accessible, visual estimations were employed to determine the DBH. As part of the inventory process, all trees exceeding a specific DBH threshold stated in city code were included.

To evaluate the health of the trees, multiple factors were considered, including their overall appearance and our team's extensive experiential knowledge of each species. This holistic approach ensured a comprehensive understanding of the tree's well-being.

To accurately document the location of each tree, a GPS smartphone application was utilized during the data collection process. This enabled us to create detailed maps that are included in this report. However, it is important to note that despite our efforts to minimize errors, inherent limitations of GPS data collection, coupled with slight discrepancies between GPS data and CAD drawings, may result in approximate tree locations depicted on the map.

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## TREE WORK STANDARDS AND QUALIFICATIONS

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To ensure high-quality tree work, including removal, pruning, and planting, the following standards and qualifications will be adhered to:

- **Industry Standards:** All tree work will be performed in accordance with industry standards established by the International Society of Arboriculture (ISA). These standards encompass best practices and guidelines for tree care and maintenance.
- **Contractor Licensing and Insurance:** The contractor undertaking the tree work must possess a valid State of California Contractors License for Tree Service (C61-D49) or Landscaping (C-27). Additionally, they must have comprehensive general liability, worker's compensation, and commercial auto/equipment insurance coverage.
- **Workmanship Standards:** Contractors must adhere to the current Best Management Practices of the International Society of Arboriculture (ISA) and the American National Standards Institute (ANSI). These standards, including ANSI A300 and Z133.1, outline guidelines for tree pruning, fertilization, and safety. Compliance with these standards ensures the use of proper techniques and practices throughout the tree work process.

By adhering to these established standards and qualifications, we can ensure the provision of professional and safe tree services that meet the industry's best practices and promote the health and longevity of the trees.

## SCHEDULE OF INSPECTIONS

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### *Kiely Arborists Services LLC:*

We will conduct the following inspections as needed for the project:

- **Pre-Equipment Mobilization, Delivery of Materials, Tree Removal, and Site Work:** Our project arborist will meet with the general contractor and owners to review tree protection measures. We will identify and mark tree-protection zone fencing, specify equipment access routes and storage areas, and assess the existing conditions of trees to determine any additional necessary protection measures.
- **Inspection after Installation of Tree-Protection Fencing:** Upon completion of tree-protection fencing installation, our project arborist will inspect the site to ensure that all protection measures are correctly implemented. We will also review any contractor requests for access within the tree protection zones and assess any changes in tree health since the previous inspection.
- **Inspection during Soil Excavation or Work Potentially Affecting Protected Trees:** During any work within non-intrusion zones of protected trees, our project arborist will inspect the site and document the implemented recommendations. We will assess any changes in tree health since the previous inspection to monitor the well-being of the trees.
- **Final Site Inspection:** Prior to project completion, our project arborist will conduct a final site inspection to evaluate tree health and provide necessary recommendations to promote their longevity. A comprehensive letter report summarizing our findings and conclusions will be provided to the City of Burlingame.

Our inspections aim to ensure proper tree protection, health, and adherence to project requirements.

## ASSUMPTIONS AND LIMITING CONDITIONS

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- **Legal Descriptions and Titles:** The consultant/arborist assumes the accuracy of any legal description and titles provided. No responsibility is assumed for any legal due diligence. The consultant/arborist shall not be held liable for any discrepancies or issues arising from incorrect legal descriptions or faulty titles.
- **Compliance with Laws and Regulations:** The property is assumed to be in compliance with all applicable codes, ordinances, statutes, or other government regulations. The consultant/arborist is not responsible for identifying or rectifying any non-compliance.
- **Reliability of Information:** Though diligent efforts have been made to obtain and verify information, the consultant/arborist is not responsible for inaccuracies or incomplete data provided by external sources. The client accepts full responsibility for any decisions or actions taken based on this data.
- **Testimony or Court Attendance:** The consultant/arborist has no obligation to provide testimony or attend court regarding this report unless mutually agreed upon through separate written agreements, which may incur additional fees.
- **Report Integrity:** Unauthorized alteration, loss, or reproduction of this report renders it invalid. The consultant/arborist shall not be liable for any interpretations or conclusions made from altered reports.
- **Restricted Publication and Use:** This report is exclusively for the use of the original client. Any other use or dissemination, without prior written consent from the consultant/arborist, is strictly prohibited.

- **Non-disclosure to Public Media:** The client is prohibited from using any content of this report, including the consultant/arborist's identity, in any public communication without prior written consent.
- **Opinion-based Report:** The report represents the independent, professional judgment of the consultant/arborist. The fee is not contingent upon any predetermined outcomes, values, or events.
- **Visual Aids Limitation:** Visual aids are for illustrative purposes and should not be considered precise representations. They are not substitutes for formal engineering, architectural, or survey reports.
- **Inspection Limitations:** The consultant/arborist's inspection is limited to visible and accessible components. Non-invasive methods are used. There is no warranty or guarantee that problems will not develop in the future.

## ARBORIST DISCLOSURE STATEMENT

Arborists specialize in the assessment and care of trees using their education, knowledge, training, and experience.

- **Limitations of Tree Assessment:** Arborists cannot guarantee the detection of all conditions that could compromise a tree's structure or health. The consultant/arborist makes no warranties regarding the future condition of trees and shall not be liable for any incidents or damages resulting from tree failures.
- **Remedial Treatments Uncertainty:** Remedial treatments for trees have variable outcomes and cannot be guaranteed.
- **Considerations Beyond Scope:** The consultant/arborist's services are confined to tree assessment and care. The client assumes responsibility for matters involving property boundaries, ownership, disputes, and other non-arboricultural considerations.
- **Inherent Risks:** Living near trees inherently involves risks. The consultant/arborist is not responsible for any incidents or damages arising from such risks.
- **Client's Responsibility:** The client is responsible for considering the information and recommendations provided by the consultant/arborist and for any decisions made or actions taken.

The client acknowledges and accepts these Assumptions and Limiting Conditions and Arborist Disclosure Statement, recognizing that reliance upon this report is at their own risk. The consultant/arborist disclaims all warranties, express or implied.

## CERTIFICATION

I hereby certify that all the statements of fact in this report are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

*David Beckham*

*Signature of Consultant*

David Beckham

Certified Arborist

WE#10724A TRAQ Qualified

January 9th, 2025

**Revised April 7, 2025**

