

Kielty Arborist Services LLC

Certified Arborist WE#10724A

P.O. Box 6187

San Mateo, CA 94403

650- 532-4418

May 1st, 2023

TMM Limited

Site: 29 Stockbridge, Atherton CA

Dear TMM Limited,

As requested on Wednesday, January 18th, 2023, and again on April 12th 2023, Kielty Arborist Services LLC visited the above site for the purpose of providing a Tree Inventory Report/Tree Protection Plan for the proposed construction. A new home, pool house, pool, detached garage and sports court are proposed on site, and as required a tree protection plan is needed when submitting plans to the town of Atherton. Site plan A1.0 dated 4/28/23 was reviewed for writing this report. This Tree Inventory Report is not a Tree Risk Assessment. As such, no trees were assessed for risk in accordance with industry standards, nor are there any tree risk ratings or risk mitigation recommendations provided within this preservation plan unless stated otherwise.

Method:

All inspections were made from the ground; the trees were not climbed for this inspection. No root crown exploration or plant tissue analysis was performed. The trees in question were located on an existing topography map provided by you. The trees were then measured for diameter at 54 inches above ground level (DBH or diameter at breast height). The trees were given a condition rating for form and vitality. The trees condition rating is based on 50 percent vitality and 50 percent form, using the following scale.

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

The height of the trees were measured using a Nikon Forestry 550 Hypsometer. The spread was paced off. Comments and recommendations for future maintenance are provided.

Survey Key:

-indicates neighbor's tree* **P-Indicates protected tree by city ordinance.

R-Indicates proposed removal **DBH**-Diameter at breast height (54 inches above grade)

CON- Condition rating **HT/SP**- Tree height/ canopy spread

29 Stockbridge

(2)

Survey:

Tree#	Species	DBH	CON	HT/SP	Comments
1P	Coast live oak (<i>Quercus agrifolia</i>) 10 times diameter=19.1' 8 times diameter= 15.3' 6 times diameter= 11.5' Appraised value=\$6,700	23.0	60	30/30	Fair vigor, fair structure, leans towards street.
2R	English hawthorn (<i>Crataegus laevigata</i>)	9.0	30	15/10	Poor vigor, poor structure, suppressed, no room for vertical growth.
3P	Coast live oak (<i>Quercus agrifolia</i>) 10 times diameter= 14.5' 8 times diameter= 11.6' 6 times diameter= 8.7' Appraised value=\$3,770	17.5	55	20/15	Fair vigor, poor structure, codominant at 5' with poor union.
4P	Coast live oak (<i>Quercus agrifolia</i>) 10 times diameter= 14.2' 8 times diameter= 11.4' 6 times diameter= 8.5' Appraised value=\$3,680	17.1	60	25/20	Fair vigor, fair structure, grows into neighboring property, suppressed, codominant at 10'



Showing trees 1-4

29 Stockbridge

(3)

Survey:

<u>Tree#</u>	<u>Species</u>	<u>DBH</u>	<u>CON</u>	<u>HT/SP</u>	<u>Comments</u>
5P	Canary Island pine (<i>Pinus canariensis</i>)	34.8	70	70/35	Fair vigor, fair structure.
	10 times diameter= 29'				
	8 times diameter= 23.2'				
	6 times diameter= 17.4'				
	Appraised value=\$16,000				
6P	Coast live oak (<i>Quercus agrifolia</i>)	20.2	60	30/20	Fair vigor, fair structure, suppressed by #5.
	10 times diameter= 16.8'				
	8 times diameter= 13.4'				
	6 times diameter= 10.1'				
	Appraised value=\$5,100				



Showing trees #5 and #6

<u>Tree#</u>	<u>Species</u>	<u>DBH</u>	<u>CON</u>	<u>HT/SP</u>	<u>Comments</u>
7*	Coast live oak (<i>Quercus agrifolia</i>)	12est	50	30/20	Fair vigor, poor form, leans into neighboring site.
8R	Coast live oak (<i>Quercus agrifolia</i>)	8.3	45	20/15	Fair vigor, poor structure, topped, grows into utilities.

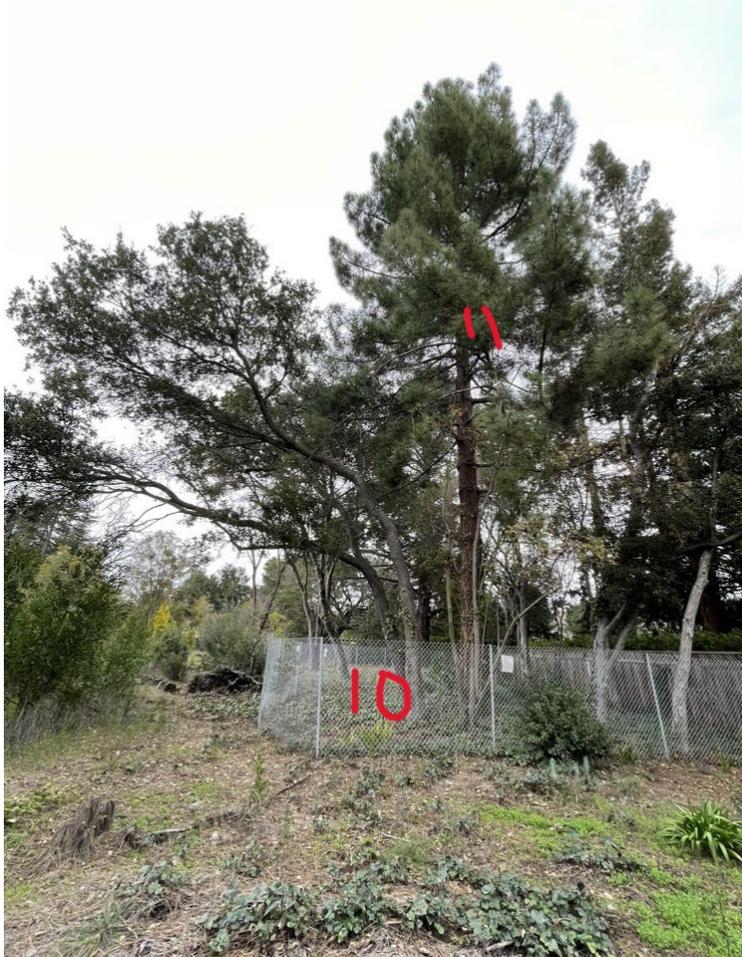
29 Stockbridge

(4)

Survey:

Tree#	Species	DBH	CON	HT/SP	Comments
9R	Coast live oak (<i>Quercus agrifolia</i>)	14.8	45	30/20	Fair vigor, poor structure, topped, under utilities.
10P/R	Coast live oak (<i>Quercus agrifolia</i>)	21.3	40	30/25	Fair vigor, poor structure, suppressed, grows at lean into site, codominant at 3', hazard
11P	Canary Island pine (<i>Pinus canariensis</i>)	36.9	70	75/35	Good vigor, good structure.

10 times diameter= 30.7'
8 times diameter= 24.6'
6 times diameter= 18.4'
Appraised value=\$17,600



Showing trees #10 and #11

Tree#	Species	DBH	CON	HT/SP	Comments
12R	Coast live oak (<i>Quercus agrifolia</i>)	14.0	20	35/25	Poor vigor, fair structure, suppressed, in decline, bark beetles.

29 Stockbridge

(5)

<u>Tree#</u>	<u>Species</u>	<u>DBH</u>	<u>CON</u>	<u>HT/SP</u>	<u>Comments</u>
13P	Coast live oak (<i>Quercus agrifolia</i>) 10 times diameter= 16.2' 8 times diameter= 13' 6 times diameter= 9.7' Appraised value=\$3,900	19.5	60	35/30	Fair vigor, fair structure, suppressed, leans into site.
14P	Coast live oak (<i>Quercus agrifolia</i>) 10 times diameter= 23.2' 8 times diameter= 18.6' 6 times diameter= 13.9' Appraised value=\$7,600	27.9	60	35/35	Fair vigor, poor structure, codominant at 3' with included bark, cabled in past, suppressed, grows into site.
15	Coast live oak (<i>Quercus agrifolia</i>)	14.5	50	25/35	Fair vigor, poor form, grows horizontally, suppressed, pruned for utilities.
16P	Monterey pine (<i>Pinus radiata</i>) 10 times diameter= 45.4' 8 times diameter= 36.3' 6 times diameter= 27.2' Appraised value=\$6,100	54.5	50	70/60	Fair vigor, fair structure, codominant at 30'. DISFAVORED SPECIES



Showing trees #13, 14, and 16

29 Stockbridge

(6)

Survey:

<u>Tree#</u>	<u>Species</u>	<u>DBH</u>	<u>CON</u>	<u>HT/SP</u>	<u>Comments</u>
17P	Redwood <i>(Sequoia sempervirens)</i>	24.0	50	45/18	Good vigor, poor structure, topped.
	10 times diameter= 20'				
	8 times diameter= 16'				
	6 times diameter= 12'				
	Appraised value=\$4,860				



Showing trees #16 and #17

<u>Tree#</u>	<u>Species</u>	<u>DBH</u>	<u>CON</u>	<u>HT/SP</u>	<u>Comments</u>
18R	Black walnut <i>(Juglans nigra)</i>	10.5	0	35/12	DEAD.
19P/R	Black walnut <i>(Juglans nigra)</i>	24.0	0	40/30	DEAD
	10 times diameter= 20'				
	8 times diameter= 16'				
	6 times diameter= 12'				
	Appraised value=\$0				

29 Stockbridge

(7)

Survey:

<u>Tree#</u>	<u>Species</u>	<u>DBH</u>	<u>CON</u>	<u>HT/SP</u>	<u>Comments</u>
20P/R	Privet (<i>Ligustrum japonicum</i>)	10-8-6-10	30	35/20	Poor vigor, poor structure, codominant at grade, in decline.
					10 times diameter= 18.3'
					8 times diameter= 14.6'
					6 times diameter= 11'
					Appraised value=\$1,020



Showing trees #19 and #20

<u>Tree#</u>	<u>Species</u>	<u>DBH</u>	<u>CON</u>	<u>HT/SP</u>	<u>Comments</u>
21R	Privet (<i>Ligustrum japonicum</i>)	12.0	30	35/15	Poor vigor, poor structure, codominant at grade, in decline.
22P/R	Unidentifiable stump	20.0	0	15/0	DEAD, LARGE STUMP.
23P	Coast live oak (<i>Quercus agrifolia</i>)	18.0	65	40/30	Fair vigor, fair structure.
					10 times diameter= 15'
					8 times diameter= 12'
					6 times diameter= 9'
					Appraised value=\$4,460

29 Stockbridge

(8)

Survey:

Tree#	Species	DBH	CON	HT/SP	Comments
24R	Coast live oak (<i>Quercus agrifolia</i>)	11.9	45	30/30	Fair vigor, poor form, leans west.
25P	Coast live oak (<i>Quercus agrifolia</i>) 10 times diameter= 14.7' 8 times diameter= 11.8' 6 times diameter= 8.8' Appraised value=\$4,120	17.7	60	40/35	fair vigor, poor form, leans west. dominate tree.



Showing stump #22



Showing oaks #23-25

26P/R	Coast live oak (<i>Quercus agrifolia</i>) 10 times diameter= 18.2' 8 times diameter= 14.6' 6 times diameter= 10.9 Appraised value=\$3,930	21.9	45	35/40	Fair vigor, fair structure, poor form, leans east.
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27R	Coast live oak (<i>Quercus agrifolia</i>)	10.8	65	25/15	Fair vigor fair structure.
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29 Stockbridge

(9)

Survey:

Tree#	Species	DBH	CON	HT/SP	Comments
28P/R	Coast live oak (<i>Quercus agrifolia</i>)	15.2	45	25/30	Fair vigor, poor structure, heavy lean.
	10 times diameter=	12.6'			
	8 times diameter=	10.1'			
	6 times diameter=	7.6'			
	Appraised value=	\$1,670			



Showing trees #26 and #28

Tree#	Species	DBH	CON	HT/SP	Comments
29	Coast live oak (<i>Quercus agrifolia</i>)	12.8	65	25/20	Fair vigor, fair structure.
30R	Coast live oak (<i>Quercus agrifolia</i>)	13.0	50	30/20	Fair vigor, fair structure, at front of property.
31R	Coast live oak (<i>Quercus agrifolia</i>)	12.6	65	25/20	Fair vigor, fair structure.

29 Stockbridge

(10)

Survey:

<u>Tree#</u>	<u>Species</u>	<u>DBH</u>	<u>CON</u>	<u>HT/SP</u>	<u>Comments</u>
32*P	Deodar cedar (<i>Cedrus deodara</i>)	24est	70	65/30	Good vigor, good structure, limited visual inspection, 5' from property line.
	10 times diameter= 20'				
	8 times diameter= 16'				
	6 times diameter= 12'				
	Appraised value=\$7,800				
33*P	Valley oak (<i>Quercus lobata</i>)	18est	50	50/30	Fair vigor, poor form, suppressed, leans away from #32, limited visual inspection.
	10 times diameter= 15'				
	8 times diameter= 12'				
	6 times diameter= 9'				
	Appraised value=\$3,000				



Showing neighboring trees #32 and #33

<u>Tree#</u>	<u>Species</u>	<u>DBH</u>	<u>CON</u>	<u>HT/SP</u>	<u>Comments</u>
34*P	Redwood (<i>Sequoia sempervirens</i>)	18est	65	70/25	Fair vigor, good structure, near utilities.
	10 times diameter= 15'				
	8 times diameter= 12'				
	6 times diameter= 9'				
	Appraised value=\$3,300				

29 Stockbridge

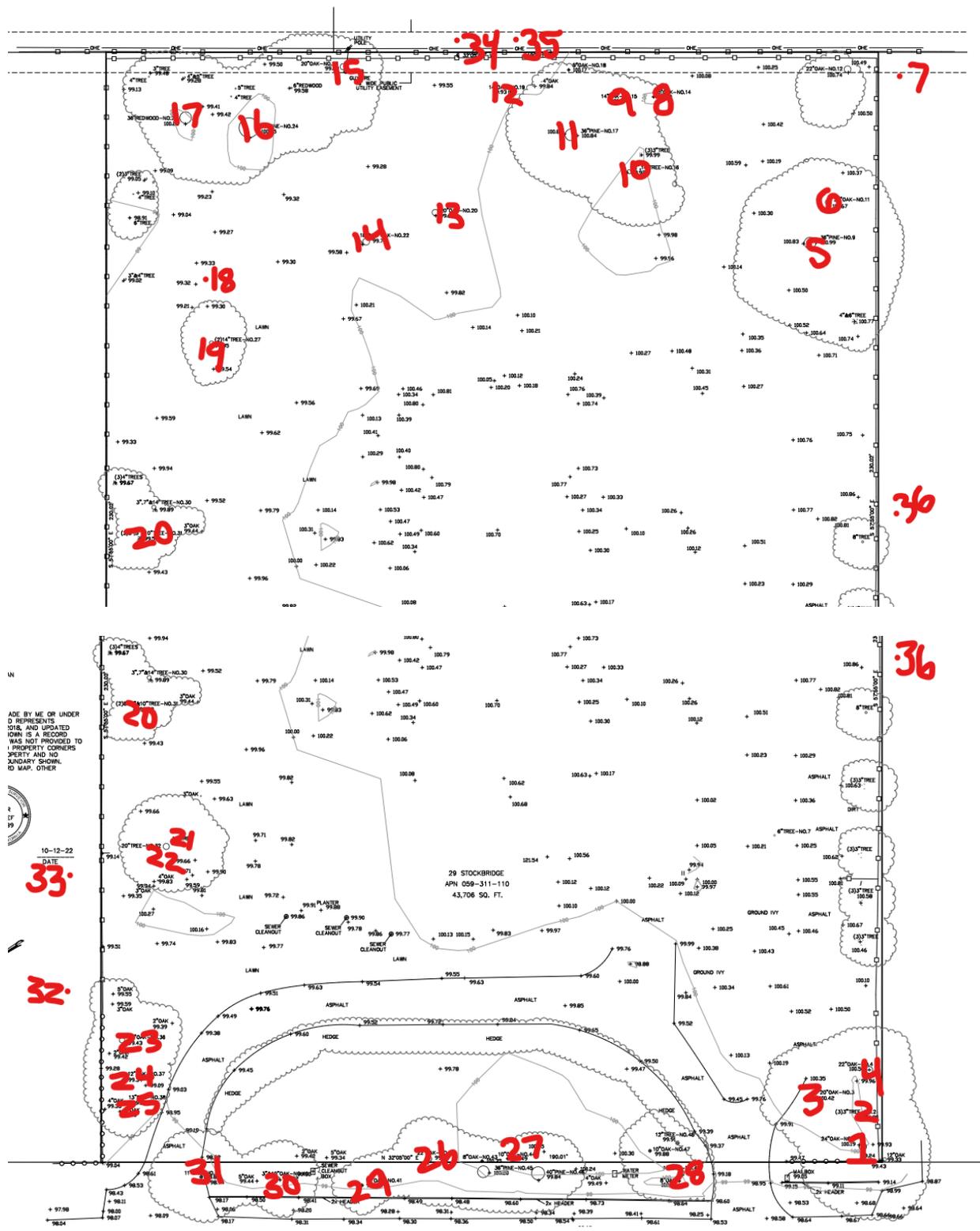
(11)

Survey:

<u>Tree#</u>	<u>Species</u>	<u>DBH</u>	<u>CON</u>	<u>HT/SP</u>	<u>Comments</u>
35*P/R	Redwood (<i>Sequoia sempervirens</i>) 10 times diameter=20' 8 times diameter= 16' 6 times diameter= 12' Appraised value=\$1,870	24est	20	70/25	Fair vigor, poor structure, cut on trunk at 40' looks like a hinge cut, recommended to remove tree, hazard.
36*P	Deodar cedar (<i>Cedrus deodara</i>) 10 times diameter= 13.3' 8 times diameter= 10.6' 6 times diameter= 8' Appraised value=\$3,990	16est	65	55/30	Fair vigor, fair structure, codominant at top of canopy, limited visual inspection.



Showing redwood trees #34 and #35 (left) Showing deodar cedar tree #36 (right)



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D REPRESENTS
DATE AND UPDATED
DOWN IS A RECORD
WAS NOT PROVIDED TO
PROPERTY CORNERS
PROPERTY AND NO
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10-12-22
DATE

Showing locations of surveyed trees



Summary:

A mix of imported and native trees were surveyed on this property. The property looks to have been poorly maintained for some time. No signs of recent tree maintenance were observed. A failed oak tree was observed at the front of the property with 2 large dead black walnut trees also observed (#18 and #19). A large unidentifiable stump (#22) was also found on site. The dead trees are recommended to be removed as they are a hazard to the property.

Showing failed oak tree at front of property



Many of the oak trees on site are growing in suppressed conditions resulting in heavy leans. Oak trees #6, 10,13, 14, 26, and 28 in particular are leaning heavily. Crown reduction pruning where heavy over extended limbs are observed is recommended to reduce risk of a limb failure where possible. In the past oak tree #14 was cabled due to a poor codominant union. The cable is recommended to be inspected biannually by an arborist.

Showing leaning oak tree



Some of the smaller non-protected oak trees at the back of the property (such as #8 and #9) have been topped for utility line clearance pruning and are growing in suppressed conditions. These trees do offer a fair amount of screening for the property. Annual pruning maintenance is recommended for these trees to reduce risk of limb failures.

Showing leaning oak tree under power lines

Monterey pine tree #16 is likely at the end of its natural lifespan within the landscape. This species is short lived when grown outside its native range. Bark beetles, prolonged drought, and pine pitch canker disease have shortened the lifespan of the tree. The species is a “disfavored species” in the town of Atherton. This tree is to be retained as it is in fair condition. The tree is recommended to be

treated for bark beetles as a preventative measure. The tree is also recommended to be irrigated every other week during the dry season until the top foot of soil within 20 feet from the tree is saturated.



Non-protected trees recommended/proposed to be removed:

Trees #2, 8, 9, 12, 18, 21, 24, 30, 31 are proposed for removal as they are either in poor condition, dead, or too close to the proposed work on site.

Protected trees proposed for removal:

Coast live oak tree #10 is growing at a heavy lean due to suppressed growing conditions. The tree is a hazard to the property as risk of tree failure is high. No mitigation measures within ANSI A300 pruning standards are expected to mitigate the risk of failure; therefore, the tree is recommended for removal.

Showing lean on oak tree #10

Black walnut tree #19 is dead and hazardous to the property. This tree is recommended for removal as soon as possible. The walnut tree is also in the location of the sports court and needs to be removed to facilitate the proposed construction (see page 7 for photo of tree).

Privet tree #20 is recommended to be removed as the tree is in decline and hazardous to the property. The tree is codominant at grade with multiple trunks at high risk of failure due to included bark. The tree is also in the location of the proposed garage. This species is a poor invasive species (see page 7 for photo of tree).

Tree #22 is a large dead stump standing at 15' tall. The stump is hazardous and recommended for removal as soon as possible. The tree is in the proposed driveway (see page 8 for photo of stump).

Coast live oak tree #26 is in poor condition due to a heavy lean. The tree leans heavily into the property. A tree failure has taken place near this tree and has left the tree exposed to prevailing winds. Due to the lean of the tree, the tree is considered hazardous to the property and recommended for removal as pruning the tree is not expected to lower the risk of failure.

Coast live oak tree #28 is recommended for removal as it is a hazard to the property. The tree is very off balanced and grows heavy over the street at a nearly horizontal. Risk of tree failure is high with no mitigations within ANSI A300 pruning standards expected to mitigate the poor form of the tree (see page 9 with photo of tree).



Redwood tree #35 is located on the neighboring property to the east at a few feet from the property line. The tree has fair vigor and looks to be healthy. When inspecting the canopy, an irregularity in the trunk was observed at 40'. The trunk in this area looks to have been cut in the past and looks like a hinge cut. This tree is hazardous and recommended for removal as the rest of the tree from 40' to 70' is at high risk of failure.

Showing cut into trunk

Distances to proposed construction:

The text below are multiple rules from the ordinance that are recommended to be followed where possible.

1. R1-A Zoning District for lots of more than 10,000 square feet:
 - a. The TPZ is 10x away from all buildings and structures.
 - b. The TPZ is 8x away from any new driveway.
2. R1-B Zoning District and lots in the R1-A Zoning District that are 10,000 square feet or less:
 - a. The TPZ is 6x away from all buildings, structures, and new driveways.
3. For all lots:
 - a. The TPZ is 6x away from all CMU walls and 5x away from all wood or metal fences that require a permit.
 - b. The TPZ is 3x from all landscaping, Landscape Screening trees and bushes.
 - c. For replacement of existing driveways and/or new, proposed compacted surfaces, allow for replacement in the existing location, but in no cases less than 3 times (3x).

Town Arborist Exceptions:

A Town Arborist exception from the TPZ standards noted in Section 2.2 (A) can be considered under any of the following scenarios.

- A TPZ exception in the R1-A from 10x the diameter, down to a minimum of 8x the diameter, for all development types unless otherwise specified.
- A TPZ exception in the R1-A from 6x the diameter, down to a minimum of 3x the diameter, for lots in the R1-B, or lots in the R1-A 10,000 square feet or less.
- A TPZ exception for all walls or fences from 6x the diameter, down to 3x the diameter

An application and fee are required to be completed prior to a Town Arborist TPZ exception review. Submitting and paying for the application does not guarantee approval to reduce the TPZ. If the Town Arborist denies an application submitted for a Town Arborist exception to the TPZ, the application can be appealed to the Planning Commission in accordance with the Atherton Municipal Code.

Impacts/Recommendations:

Coast live oak tree #13 is located at 12' from the decomposed granite pathway or 7.4x the tree's diameter. The decomposed granite pathway is recommended to be built up on top of grade using only rough surface grading where needed so that little to no excavation is needed. Excavation for the decomposed granite area when within 10x the tree's diameter shall not exceed more than 6". Impacts are expected to be minor to non-existent if built in this manner. No mitigation measures would be required.



Coast live oak tree #14 is located at 10' from the proposed decomposed granite pathway or at 4.3x the tree's diameter. The decomposed granite pathway is recommended to be built up on top of grade using only rough surface grading where needed so that little to no excavation is needed. Excavation for the decomposed granite area is recommended to not exceed more than 6" when working within 10x the tree's diameter. Impacts are expected to be minor to non-existent if built in this manner. No mitigation measures would be required. An exploratory trench along the edge of the proposed decomposed granite area was done at the depth of 6". No roots were encountered measuring larger than 1" in diameter.

Showing exploratory trench near oak tree #14 for the decomposed granite area

Pine tree #16 is located at 31' 1" or 6.8x the tree's diameter away from the proposed decomposed granite area. The decomposed granite area is recommended to be built up on top of grade using only rough surface grading where needed so that little to no excavation is needed. Excavation for the decomposed granite area when within not exceed more than 6" when working within 10x the tree's diameter. Impacts are expected to be minor to non-existent if built in this manner. No mitigation measures would be required.

The proposed sports court is shown at 36' 1" from Monterey pine tree #16 or at 8x diameter. The sports court will only require 1' of excavation. Excavation is recommended to be done by hand when within 45.4' (10x diameter) from the pine tree. Any roots measuring 1" in diameter or larger exposed are recommended to be shown to the Project Arborist before being cleanly cut as needed. Impacts are expected to be minor to non-existent at this distance. The pine tree is recommended to be irrigated during the dry season every other week until the top foot of soil within 20 feet from the tree is saturated. This will act as mitigation for any minor impacts.

Oak trees #3, 4, 25, and 28 all maintain a minimal clearance of 5x diameter as required by the town arborist from the proposed wooden fence. The fence is recommended to be supported by individual post when within 10x the diameter of the trees listed above. All post holes within 10x the tree diameters are recommended to be excavated by hand under the Project Arborist supervision. If large roots are encountered measuring 2" in diameter or larger, then the post holes should be moved to a location with no roots or smaller roots to reduce impacts to the trees. No continuous footing between posts shall be used. The wooden fence between post holes is recommended to be on top of existing grade so that no excavation is required. No impacts are expected if constructed as described above.

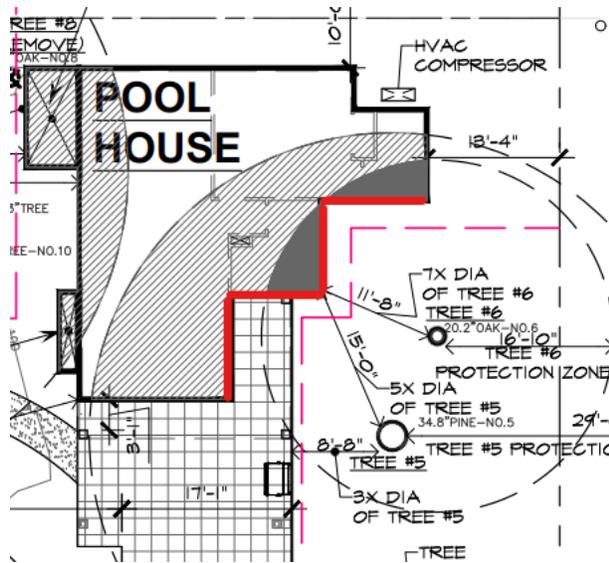
Proposed Town Arborist Exceptions:

Coast live oak tree #1 is located 3' from the proposed fence at the front of the property or 1.6x the tree's diameter. This will require an exception as the fence is closer than 5x the diameter of the tree. The fence is recommended to be supported by individual post with the fence at or above grade in between the post. By constructing the fencing in this manner impacts are exposed to be minor to nonexistent. Post holes are recommended to be excavated by hand under the supervision of the Project Arborist. If large roots measuring 2" in diameter or larger are encountered, the plan should maintain the flexibility in moving post hole locations to a location with smaller or no roots to be cut. This tree is recommended to be treated with Cambistat as a mitigation measure. The species has a good tolerance to construction impacts as seen in the Matheny and Clark relative tree tolerance to construction chart.

Canary Island pine tree #5 is located at 15' from the pool house or at 5.1x the tree's diameter. The proposed hardscape around the pool house is located at 8.7' from the tree or at 3x the tree's diameter. The pine tree is in good condition and the species has a moderate to good relative tolerance to construction impacts as seen in the Matheny and Clark tolerance chart. The percentage of the tree's root zone to be impacted at 10x the trees diameter is 13.8% (including hardscape work). An exploratory trench was conducted at the pool house foundation using an air knife in combination with hand tools. The depth of the trench was done to 2' as the majority of roots are in the top 2' of soil. Four roots were encountered measuring 1" in diameter or larger. The size of the roots are as followed: 1.8", 2", 1", and 2.2". Impacts are expected to be minor for the pine tree. Hand excavation under the Project Arborist supervision is required for excavating the foundation of the pool house when working within 10x the tree's diameter. All roots encountered measuring 1" in diameter or larger will need to be documented in the required monthly inspections. Encountered roots are recommended to be cleanly cut with cut root ends on the tree side covered in layers of wetted down burlap. This will help to avoid desiccation. Between the pool house and tree, it is recommended to irrigate the soil when within 10x the tree's diameter using 200 gallons of water before the start of excavation for the pool house foundation and again 2 weeks later. This will act as mitigation for the minor impacts. Irrigation will be prescribed during the monthly inspections as needed.

The hardscape within 10x the diameter of pine tree #5 is recommended to be built up on top of grade while utilizing Biaxial Geogrid (Tensar BX-1100 or equivalent) as an underlayment. The hardscape has been revised to show a minimal offset distance of 8.7' (3x diameter) away from the pine tree. Biaxial Geogrid can be used as a subgrade layer below aggregate for reinforcing the hardscape. 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, reduces 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 foot traffic. No more than 6" of excavation (mostly for rough grading and scarifying the soil) shall be allowed for the hardscape construction when working within 29 feet from Canary Island pine tree #5. The existing grade and hardscape 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 hardscape is recommended to be 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 hardscape being constructed entirely on top of the root zone. Edging for the hardscape construction is recommended to be supported by individual pins as excavating for a continuous edge would nullify the use of Geogrid. By building the hardscape using the techniques described above, impact to the protected Canary Island pine tree would be minor. Because the hardscape work is to take place within the tree's tree protection zone of 29', 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 supervision when working within 29 feet from the Canary Island pine tree #5. Any exposed roots during the hardscape 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 hardscape work is to start, the tree protection zone is recommended to be heavily irrigated using 200 gallons of water and again 2 weeks later. The top foot of the soil within the tree protection zone is recommended to be saturated. The irrigation will act as mitigation for the pine tree.



Red line showing location of exploratory trench

Showing exploratory trench.



Showing the two 2" diameter roots encountered at the pool house foundation

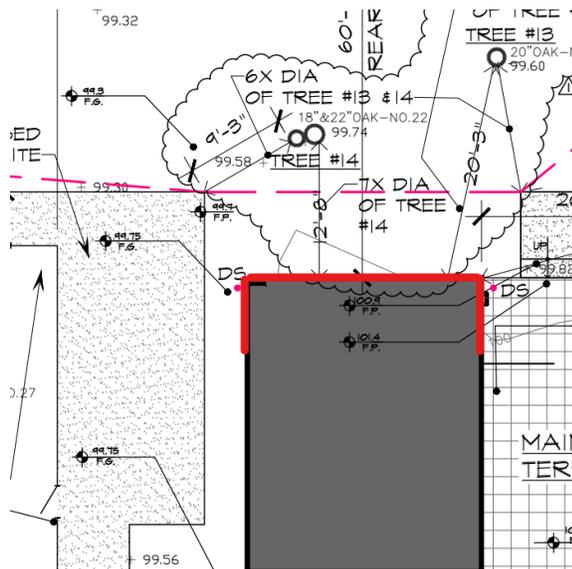
Canary Island pine tree #11 is located at 26' from the pool house or 8.4x the tree's diameter. The pool equipment shed is located at 21' from the tree or at 6.8x the diameter of the tree and will require an exception by planning commission. The pine tree is in good condition and the species has a moderate to good relative tolerance to construction impacts as seen in the Matheny and Clark tolerance chart. The percentage of the tree's root zone to be impacted at 10x the tree's diameter is 5.2%. An exploratory trench was conducted at the pool equipment shed and foundation using an air knife in combination with hand tools. The depth of the trench was done to 2' as the majority of roots are in the top 2' of soil. 3 pine tree roots were encountered measuring 1" in diameter or larger. The size of the roots are as followed: 1.7", 1", and 1.2". Impacts are expected to be minor to nonexistent for the pine tree as no roots measuring 2" in diameter or larger are to be cut. Hand excavation under the Project Arborist supervision is required for excavating the foundation of the pool house when working within 10x the tree's diameter as well as the pool equipment shed. All roots encountered measuring 1" in diameter or larger will need to be documented in the required monthly inspections. Encountered roots are recommended to be cleanly cut with cut root ends on the tree side covered in layers of wetted down burlap. This will help to avoid root desiccation. Between the pool house and tree, it is recommended to irrigate the soil when within 10x the tree's diameter using 200 gallons of water before the start of excavation for the pool house foundation and again 2 weeks later. This will act as mitigation for the minor impacts. Irrigation will be prescribed during the monthly inspections as needed.



Showing exploratory trench

Showing largest pine root encountered at 1.7" diameter

Coast live oak tree #6 is located at 11'8" from the pool house or 7x the tree's diameter. The oak tree is in fair condition and the species has a good relative tolerance to construction impacts as seen in the Matheny and Clark tolerance chart. The percentage of the tree's root zone to be impacted at 10x the tree's diameter is 5.9%. An exploratory trench was conducted at the pool house foundation using an air knife in combination with hand tools. The depth of the trench was done to 2' as the majority of roots are in the top 2' of soil. Three oak roots were encountered measuring 1", 1.5", and 1.4". Impacts are expected to be minor for the oak tree. Hand excavation under the Project Arborist supervision is required for excavating the foundation of the pool house when working within 10x the tree's diameter. All roots encountered measuring 1" in diameter or larger will need to be documented in the required monthly inspections. Encountered roots are recommended to be cleanly cut with cut root ends on the tree side covered in layers of wetted down burlap. This will help to avoid desiccation. Between the pool house and tree, it is recommended to irrigate the soil when within 10x the tree's diameter using 200 gallons of water before the start of excavation for the pool house foundation and again 2 weeks later. This will act as mitigation for the minor impacts. This tree is also recommended to receive a Cambistat treatment to help control the growth of the tree and to promote new root growth and will act as an additional mitigation measure.



Coast live oak tree #14 is located at 12'8" from the proposed home or at 5.4x the trees diameter. A decomposed granite area is located at 9'3" from the tree or at 4x the tree's diameter. The oak tree is in fair condition and the species has a good relative tolerance to construction impacts as seen in the Matheny and Clark tolerance chart. The percentage of the tree's root zone to be impacted at 10x the tree's diameter is 11.1%. An exploratory trench was completed at the proposed foundation within 10x the tree's diameter. The depth of the exploratory trench for the foundation was done to 2'. A large pine tree stump was located in the center of the home foundation exploratory trench. All roots encountered were from the decaying pine stump. Irrigation lines were also encountered at the foundation location indicating previous

excavation in this area. No oak tree roots were encountered. Impacts are expected to be minor for the oak tree. Hand excavation under the Project Arborist supervision is required for excavating the foundation of the main home and decomposed granite area when working within 10x the tree's diameter. All roots encountered measuring 1" in diameter or larger will need to be documented in the required monthly inspections. Any encountered roots are recommended to be cleanly cut with cut root ends on the tree side covered in layers of wetted down burlap. This will help to avoid desiccation. The decomposed granite area is recommended to be built in a way the required no more than 6" of excavation. All excavation is to be done by hand under the Project Arborist supervision when within 10x the tree's diameter. Any roots encountered are recommended to be retained within the decomposed granite area by packing rock or granite around tree roots. Between the home and tree and decomposed granite area, it is recommended to irrigate the soil when within 10x the tree's diameter using 200 gallons of water before the start of excavation for the foundation and again 2 weeks later. This will act as mitigation for the minor impacts. The tree is also recommended to receive a Cambistat treatment to help control the growth of the tree and to promote new root growth and will act as an additional mitigation measure.



Showing exploratory trench at home foundation near oak tree #14, red arrows showing large stump and irrigation lines encountered

The proposed driveway is shown at 10'6" away from neighboring Valley oak tree #33 or at 7x the tree's diameter. Impacts at this distance are expected to be minor at this distance. It is recommended to hand excavate the driveway when within 15' from the tree (10x diameter) while under the Project Arborist supervision. Encountered roots are recommended to be cleanly cut by hand using a hand saw or loppers. The species has a moderate tolerance to development impacts as seen in the Matheny and Clark tree tolerance chart. The percentage of root zone impacts is very low and only at 2.6%. Irrigation between the property line and driveway when within 10x the tree's diameter is recommended to be given to the tree before the start of the driveway excavation. 50 gallons of water is recommended to be applied. After the inspection of the excavation further mitigation measures may be recommended. The following tree protection plan will help to insure the future health of the retained trees on site.

TREE #5

TPZ AREA= 2,913 SF
ROOT INTRUSION AREA= 13.8%
(402 SF / 2,913 SF= 0.138)

TREE #6

TPZ AREA= 981 SF
ROOT INTRUSION AREA= 5.9%
(58 SF / 981 SF= 0.059)

TREE #11

TPZ AREA= 3,275 SF
ROOT INTRUSION AREA= 5.2%
(171 SF / 3,275 SF= 0.052)

TREE #14

TPZ AREA= 1,872 SF
ROOT INTRUSION AREA= 11.1%
(209 SF / 1,872 SF= 0.111)

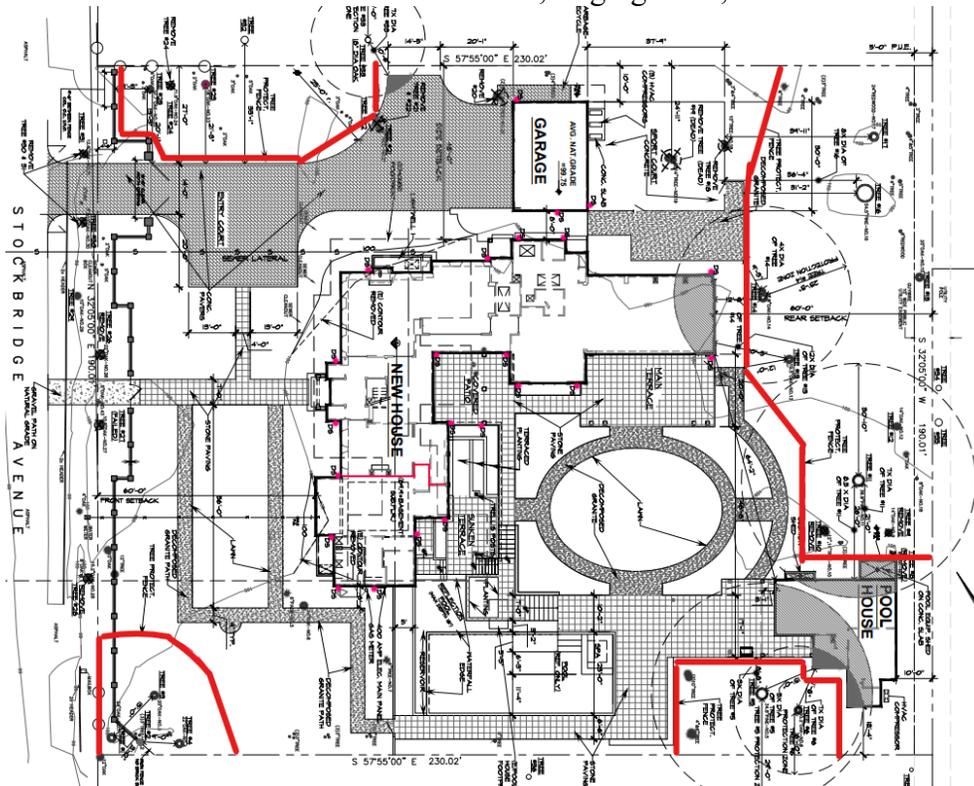
TREE #33

TPZ AREA= 780 SF
ROOT INTRUSION AREA= 2.6%
(21 SF / 780 SF= 0.026)

Showing percentage of root zone impacted at 10x the diameter of trees where exceptions are needed.

Tree Protection Plan:

Tree protection zones should be established and maintained throughout the entire length of the project. Fencing for the protection zones should be 6 foot tall metal chain link (minimum 12 gauge) supported by 2 inch galvanized iron post pounded into the ground by no less than 2 feet. The support poles should be spaced no more than 10 feet apart on center. This detail shall appear on grading, guarantee demolition, and building permit plans. The location for the protection fencing is recommended to be placed at 8 or 10x diameter where possible. Any deviation in determining the tree protection zone will require approval by the Town Arborist. I have approved tree protection fencing being reduced for trees near the proposed work on site. No excavation shall be allowed inside tree protection zones without the Site Arborist on site. Signs should be placed on fencing signifying "Tree Protection Zone - Keep Out". No materials or equipment should be stored or cleaned inside the tree protection zones. It is recommended to mulch the tree protection zones using 4-6 inches of wood chips. Tree protection fencing can only be removed at the end of the project by approval from the Town Arborist. The town of Atherton will require a Tree Protection Procedure Acknowledgement Signature to be signed by the owner of the property or contractor, acknowledging the existence of Heritage Trees on the property and that the Town's Standards and Specifications will be followed throughout the length of the project. Verification that all tree protection fencing measures have been installed will be needed before the issuing of permits as required by the Town. A site meeting with the general contractor, Town Arborist, and Site Arborist before the project starts will be required to review tree protection measures and to establish haul routes, staging areas, etc.



Showing the recommended placement of tree protection fencing.

Root cutting

Any roots to be cut should be monitored and documented. Large roots measuring 2 inches in diameter or larger will need to be inspected by the Project Arborist before being cut. If possible roots should be cut back to sound lateral roots under the supervision of the Project Arborist. The Project Arborist will likely recommend irrigation if root cutting is significant. Cut all roots clean with a saw or loppers. Roots to be left exposed for a period of time should be covered with layers of burlap and kept moist. The Project Arborist will be on site for excavation near all protected trees on site. If injury is to take place to tree roots proper mitigation measures will need to be applied.

Trenching

Trenching for irrigation, electrical, drainage or any other reason should be hand dug in combination with an air spade when beneath the driplines of protected trees. Hand digging and carefully laying pipes below or beside protected roots will dramatically reduce root loss of desired trees thus reducing trauma to the entire tree. Trenches should be backfilled as soon as possible with native material and compacted to near its original level. Trenches that must be left exposed for a period of time should also be covered with layers of burlap and kept moist. Plywood over the top of the trench will also help protect exposed roots below. All trenching within a tree protection zone will need to be observed by the Site Arborist so that proper mitigation measures can be applied. Any Trenching less than 10x the diameter (dbh) is required to be hand dug including exploratory Trenching if approved to trench closer than 10x.

Grading

The grading contractors are required to meet with the Project Arborist and the Town Arborist at the site prior to beginning grading to review tree protection measures. The Project Arborist shall perform an inspection during rough grading adjacent to the tree protection zone to ensure trees will not be injured by compaction, cut or fill, drainage and trenching, and if required, inspect aeration systems, tree wells, drains and special paving. The Site Arborist shall be notified at least 48 hours before an inspection is needed. If compaction from grading has taken place within a tree protection zone, proper mitigation measures will need to be applied.

Irrigation

Normal irrigation should be maintained throughout the entire length of the project. The imported trees on this site will require irrigation during the warm season months. Some irrigation may be required during the winter months depending on the seasonal rainfall. During the summer months the trees on this site should receive heavy flood type irrigation 2 times a month. During the fall and winter 1 time a month should suffice. Mulching the root zone of protected trees will help the soil retain moisture, thus reducing water consumption. The native oak trees on site shall not be irrigated unless their root zones are traumatized. Any existing irrigation underneath native oak trees should be permanently suspended.

Required Inspections**A. Pre -Construction Meeting**

Prior to commencement of construction, the applicant or contractor shall conduct a pre-construction meeting to discuss tree protection with the job site superintendent, grading equipment operators, Project Arborist, and Town Arborist.

B. Inspection of Protective Tree Fencing

The Town Arborist shall be in receipt of a written statement from the applicant or Project Arborist verifying that he has conducted a field inspection of the trees and that the protective tree fencing is in place prior to issuance of a demolition, grading, or building permit.

C. Inspection of Rough Grading

The project arborist shall perform an inspection during the course of rough grading adjacent to the TPZ to ensure trees will not be injured by compaction, cut or fill, drainage and trenching, and if required, inspect aeration systems, tree wells, drains and special paving. The contractor shall provide the Project Arborist at least 48 hours advance notice of such activity.

D. Monthly Inspections

The Project Arborist shall perform monthly inspections to monitor changing conditions and tree health and submit a written report to the Town Arborist.

E. Special Activities within the Tree Protection Zone

Kiely Arborist Services can be reached at (650) 532-4418, or by email at davidkielyarborist@gmail.com. This information should be kept on site at all times. The information included in this report is believed to be true and based on sound arboricultural principles and practices.

Sincerely,

David Beckham

David Beckham Certified Arborist WE#10724A TRAQ Qualified

Kiely Arborist Services

P.O. Box 6187

San Mateo, CA 94403

650-532-4418

ASSUMPTIONS AND LIMITING CONDITIONS

1. Any legal description provided to the consultant/appraiser is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.
2. It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other government regulations.
3. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however the consultant/appraiser can neither guarantee nor be responsible for the accuracy of information provided by others.

4. The consultant/appraiser shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.
5. Loss, alteration, or reproduction of any part of this report invalidates the entire report.
6. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of the consultant/appraiser.
7. Neither all nor any part of this report, nor any copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of the consultant/appraiser particularly as to value conclusions, identity of the consultant/appraiser, or any reference to any professional society or initialed designation conferred upon the consultant/appraiser as stated in his qualification.
8. This report and the values expressed herein represent the opinion of the consult/appraiser, and the consult/appraiser's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.
9. Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.
10. Unless expressed otherwise: 1) information in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) 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 problems or deficiencies of the plants or property in question may not arise in future.

ARBORIST DISCLOSURE STATEMENT

Arborists are tree specialists who use their education, knowledge, training and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like a medicine, cannot be guaranteed.

Treatment, pruning, and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, landlord-tenant matters, etc. Arborists cannot take such issues into account

unless complete and accurate information is given to the arborist. The person hiring the arborist accepts full responsibility for authorizing the recommended treatment or remedial measures.

Trees can be managed, but they cannot be controlled. To live near a tree is to accept some degree of risk. The only way to eliminate all risks is to eliminate all trees.

Arborist: David Beckham

David Beckham

Date: May 1st, 2023