

OAK TREE REPORT

SUBJECT

Calabasas Kia

PREPARED FOR:

Hello Auto Group
20495 Creekside Road
Santa Clarita, CA 91355

PREPARED BY:

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Date: March 31, 2023

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1. ASSIGNMENT

The objective of this report is to assess the condition of the site's protected oak trees to discuss the potential encroachments of them and to discuss the effect of the encroachments on their health.

2. BACKGROUND

The project site was previously a retail nursery with paved areas and graded areas. The buildings were demolished leaving a paved parking, driveways, and a building foundation. The proposed improvements will take place on previously disturbed areas.

3. METHOD OF STUDY

In March of 2023, I inspected the oak trees on the site using the ISA Level 2 or Basic Assessment, a ground-level, visual inspection assessing their structure and general health by means of measuring tools and tools to observe the exterior of the tree. The trees were tagged with numbered, metal tags. The numbering begins with #101.

4. DISCUSSION

Demolition will be performed within the protected zones (PZ) of a few protected oak trees. Care must be taken to minimize the disturbance that will occur and should be observed by an arborist.

The following oak trees will be encroached by the proposed grading and construction:

3 Oak Trees to be Removed

Oak tree #101 – This tree is on the property line and must be removed to build the 5-foot retaining wall, 5 feet from the proposed building.

Oak tree #102 – This heritage tree is located 2 feet from the proposed building and must be removed.

Oak tree #150 – This tree is located on the west property line, 2 feet from a proposed 6-foot retaining wall. The excavation for the wall will require the removal of this tree.

21 Oak Trees to be Encroached

Oak trees #103, #104, #105, #106, and #107 – 5 young oak trees are located along the property line and an existing retaining wall. All the trees are 10 feet from the proposed 3-foot retaining wall. Excavation for the retaining will be no closer than 5 feet from the trunks encroaching roughly 10 to 15 percent of the PZs. These trees will be preserved and protected.

Oak tree #116 – This tree will be encroached by grading for a parking lot, a debris basin, and an access road to the debris basin. Roughly half of the PZ area will be encroached by grading. Part of the access road is an existing length of a paved road within the PZ. This will be a potentially harmful encroachment due to the removal of existing roots although there will be no encroachment closer than 25 feet from the trunk. This tree is declining structurally and should be evaluated later to determine whether drastic pruning should be done to make it safer. I recommend fencing this tree permanently to restrict access to it or remove it if, with further assessment, it is determined likely to fail and strike a target. This tree should be preserved and protected. No pruning required.

Oak tree #117 – This tree will be encroached by grading for a parking lot and a manufactured slope. Roughly 25 percent of the PZ area will be encroached by grading. This will be a potentially harmful encroachment due to the removal of existing roots although there will be no encroachment closer than 16 feet from the trunk. This is a healthy tree and the manufactured slope will be a significant encroachment but only on the north side of the tree. This tree should be preserved and protected. No pruning required.

Oak tree #123 – This tree will be encroached by the manufactured slope to grade the parking lot, impacting 30 percent of the PZ. The v-ditch at the limit of grading will be no closer than 5 feet from the trunk. This will be a significant encroachment that can be managed. This tree will be protected and preserved, and no pruning will be needed.

Oak trees #124, #125, #126, #127, #130, and #131 – These trees are all located on the north side of the grove that occupies the slope that arises from the more level area that will be developed. These 6 oak trees, 4 of which are heritage trees, will be encroached by the manufactured slope needed to create the building pad and parking lot below it. The v-ditch will be the closest encroachment.

- #124 – encroaches 35 percent of the PZ, no closer than 17 feet from the trunk.
- #125 – encroaches 21 percent of the PZ, no closer than 17 feet from the trunk.
- #126 – encroaches 30 percent of the PZ, no closer than 17 feet from the trunk.
- #127 – encroaches 25 percent of the PZ, no closer than 18 feet from the trunk.
- #130 – encroaches 12 percent of the PZ, no closer than 28 feet from the trunk.
- #131 – encroaches 5 percent of the PZ, no closer than 39 feet from the trunk.

Oak tree #136 – This tree will be encroached by the v-ditch above the manufactured slope which will impact 3 percent of the PZ and will be no closer than 48 feet from the trunk.

Oak tree #143 – This tree will be encroached by a drainage channel that begins near this tree, 34 feet from the trunk and encroaching 4 percent of the PZ.

Oak tree #149 – This tree will be encroached by a 4-foot retaining wall, 5 feet from the trunk. This is a severe encroachment that will jeopardize the health of this tree, impacting 50 percent PZ. The drain line shown on the plan will be aligned away from the trunk.

Oak tree #OP1 – This off-property tree will be encroached by a 6-foot property line wall, 18 feet from the trunk. The excavation for the retaining wall and for the construction of the road, will encroach 35 percent of the PZ. This will be a significant encroachment that should not harm the tree,

Oak tree #OP2 – This off-property tree is near tree #OP1 and will be encroached similarly. The 6-foot retaining wall will be 29 feet from the trunk and the excavation for the wall and the construction of the road will encroach 18 percent of the PZ.

Oak tree #OP3 – This off-property tree will be encroached by a low retaining wall near the property line, to support a walkway along the proposed building. The excavation for the retaining wall will encroach 19 percent of the PZ, 7 feet from the trunk.

Oak tree #OP4 – This off-property tree will be encroached by a low retaining wall near the property line, to support a walkway along the proposed building. The excavation for the retaining wall will encroach 18 percent of the PZ, 31 feet from the trunk.

When the oak trees are being encroached by grading and construction, they will be preserved and protected. Most of these encroachments will not be so extensive that the tree will be harmed by the

encroachment if it handled properly. Of the 21 oak trees proposed to be encroached by the project, only 2, #116 and #149 will be encroached so extensively that the damage may harm the trees. It is fortunate that the 2023 rains have made the existing trees healthier. Maintaining this good health, in particular, maintaining good soil moisture, will allow the trees to tolerate the encroachments as they recover.

The physiological condition of each tree is detailed in the summary of field observations dated March 15, 2023.

Driplines on the oak tree location map are for graphic purposes. See the measured and estimated dripline dimensions in this report.

5. RECOMMENDATIONS

A. Tree Protection

- a. The general contractor shall be familiar with the stated tree protection measures and protected tree ordinance as set forth in the municipal or county code. The following is a brief guideline of recommendations to protect the trees.
- b. The applicant's tree consultant shall be notified 48 hours prior to the commencement of any work within the protected zone of any protected tree so he or she can prepare to observe the work.
- c. Trees that are to be preserved on the site during construction shall be fenced at the location of their protected zones or at the limit of grading with a temporary chain link fence prior to commencement of grading. Signs shall be posted in English and Spanish to notify people that the trees are protected.
- d. Trees shall be protected from being injured by grading and construction, including but not limited to wounding of branches and roots, compaction of soil within the protected zone, and damage to the foliage by engine exhaust.
- e. No activity, such as vehicle travel or parking, equipment and building materials storage, deposit of debris and trash or any activity that will harm the protected trees, shall be allowed within the protected root zones of any protected tree at any time.

B. Pruning

- a. Any pruning approved prior to commencement of work shall be executed only after the notification of the consulting arborist, 48 hours prior to commencement so that he or she can observe the pruning performed.
- b. Pruning required but not previously approved shall not be performed until a written request for pruning has been submitted and approved by Planning unless the branches are less than 2 inches in diameter and pruning them is deemed necessary by the consulting arborist.
- c. Approved pruning shall be performed by the tree trimming contractor who

must employ at least one ISA certified arborist and should be observed by the applicant's consulting arborist who shall keep Planning informed about the work being performed. Pruning wounds shall not be sealed.

C. Grading Near Protected Trees

- a. Within the crown spread of the protected trees to be preserved in place, hand trenching shall be done at the limit of the proposed grading or excavation to uncover roots, allowing them to be properly and cleanly pruned prior to grade work. This work shall be done under the observation of the consulting arborist.
- b. The requirement to hand-dig any approved excavation near the protected trees is designed to avoid irreparable root damage. The purpose is to locate and expose roots that must be cut and to carefully prune them, thereby, avoiding the ripping and tearing caused with the use of backhoe or other excavation equipment. Due to the scope of the improvements, the requirement for hand digging approved excavation near protected trees is sometimes impractical. Therefore, a work procedures, below, are proposed to execute the work with precise and controlled methods that avoids indiscriminate damage.

D. Preparation Phase

- a. It is recommended that trees that will be encroached and preserved be watered to attain and maintain sufficient soil moisture content. This is crucial to maintain the health of the trees during grading and construction. Fencing should be in place prior to the commencement of demolition and/or grading.
- b. Pruning, if any, shall be performed before grading to avoid conflict between trees and grading equipment. This action should reduce the potential for broken branches resulting from being struck by that equipment.

E. Protective Fencing

- a. See "Tree Protection" above for the intent of the fencing plan. The trees that are to be preserved on the site shall be kept fenced during grading and construction with a 5-foot high, temporary, chain-link fence for protection at all times when construction activities are taking place. The chain-link fence shall be in place prior to the commencement of grading. A three-foot-wide pass-through opening in the fence shall be provided for maintenance access. The fence shall remain during all phases of construction. Damaged fencing shall be immediately replaced or repaired.
- b. In some cases, fencing may be placed at the limit of grading or excavation to allow approved work to be done inside the protected zones. No fencing shall be removed or moved without notifying the tree consultant and without approval from the tree consultant.

F. Grading

- a. The greatest potential for consequential damage to trees is from excavation for footings, utility trenching, driveway base preparation, and grading. It is not possible to develop this site without some conflict between the trees and the proposed improvements. The conflict relates to both the aerial crown and the root structure of the trees. The goal is to eliminate or at least minimize damage. This can be accomplished as follows:
- b. Define the area of excavation that will occur within the protected zone of a tree. After pruning the roots at the edge of the limit of work, it may be necessary to utilize equipment to remove the soil outside of the roots that were cut. This should be done under the observation of the consulting arborist. Stop this effort upon encountering roots of significant size, 2 inches and larger.
 - i. Prune roots to the required depth using standard, sterile, mechanical root pruning equipment accompanied by hand work. In the case of trenching, cut the roots on each side of the
 - ii. proposed trench to the required depth.
- c. These methods will minimize root damage from excavation and grading equipment pulling on roots in a lateral direction from their path of travel. Pruned roots shall be hand sawn, using sterilized equipment, with a clean cut, at a 90-degree angle facing downward and shall not be sealed.
- d. Place all excavation spoils outside of the dripline of the trees.

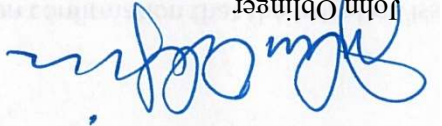
G. Other protective measures

- a. Protect trees by not wounding them. Nailing of anything such as grade stakes must be avoided.
- b. The potential for breaking branches by mechanical equipment should be anticipated and, if encountered, the arborist should be notified with a request for an evaluation and recommendation how to proceed.
- c. It is important to leave the natural leaf litter that exists beneath trees.
- d. No chemicals such as herbicides shall be used upstream and within one hundred feet of any tree protected zone.
- e. Dust deposited on the foliage of trees must be washed off so that the leaves are not smothered by dust particles.

NOTICE of DISCLAIMER

The report represents the independent opinion of the signatory consultant (John Oblinger). The tree(s) discussed herein was/were generally reviewed for physical, biological function and aesthetic conditions. This examination was conducted in accordance with presently accepted industry procedures, which are a ground-plane macro-visual observation only. No extensive micro-biological, soil-root excavations, upper crown examination nor internal tree investigations were conducted and therefore, the reporting herein reflects the overall visual appearance of the tree(s) on the date reviewed and no warranty is implied as to

the potential failure, health, or demise of any part of or the whole tree described in the report. Records may not remain accurate after our inspection due to unknown alteration or deterioration of the reviewed site.

Respectfully submitted,

John Oblinger
ISA Certified Arborist WE-6820A
ISA Tree Risk Assessor Qualified

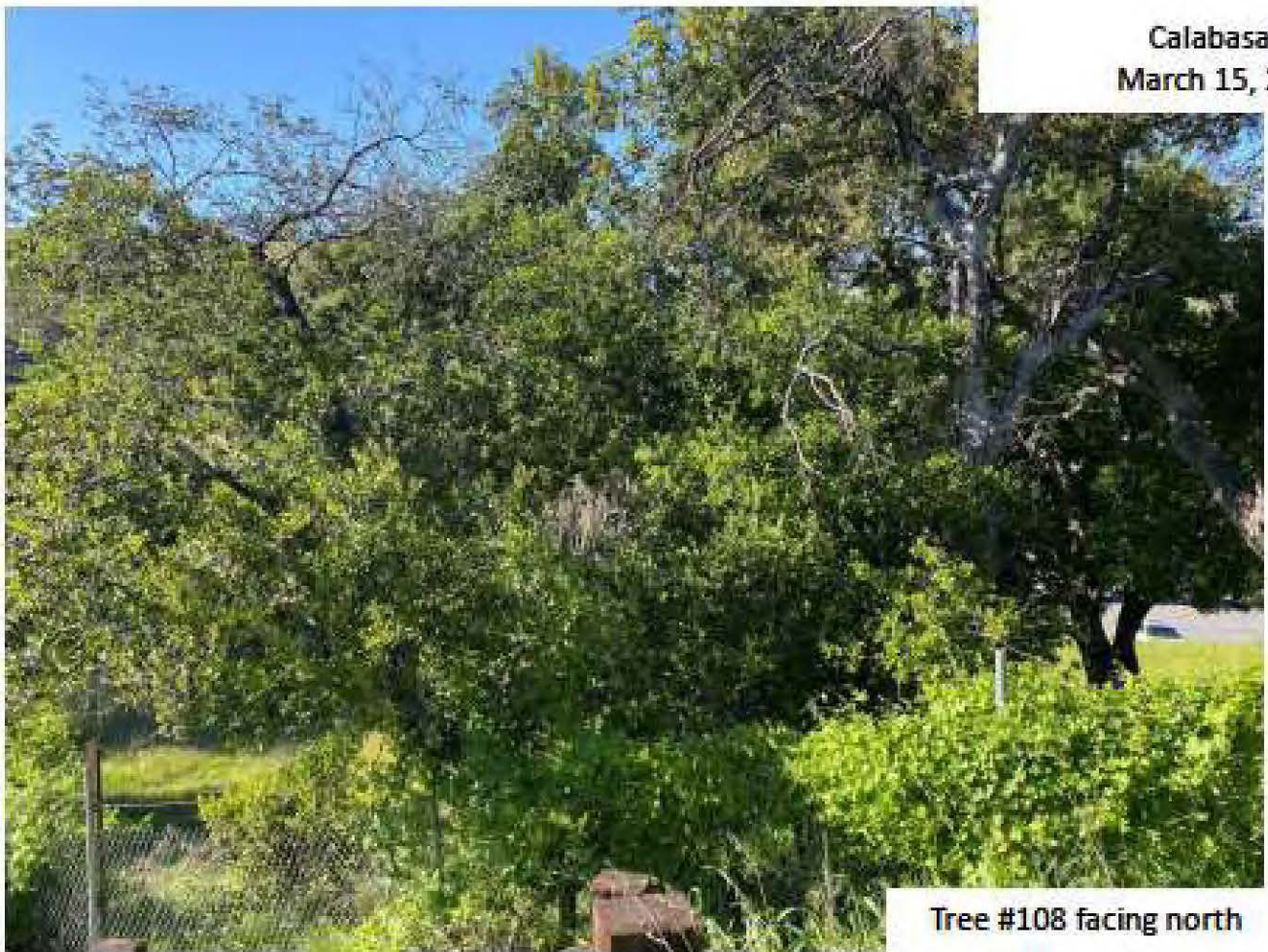




Trees #103 to #107 facing north



Trees #104 to #107 facing south



Tree #108 facing north



Tree #109 facing west

Calabasas Kia
March 15, 2023



Tree #110 facing west



Tree #111 facing south

Calabasas Kia
March 15, 2023



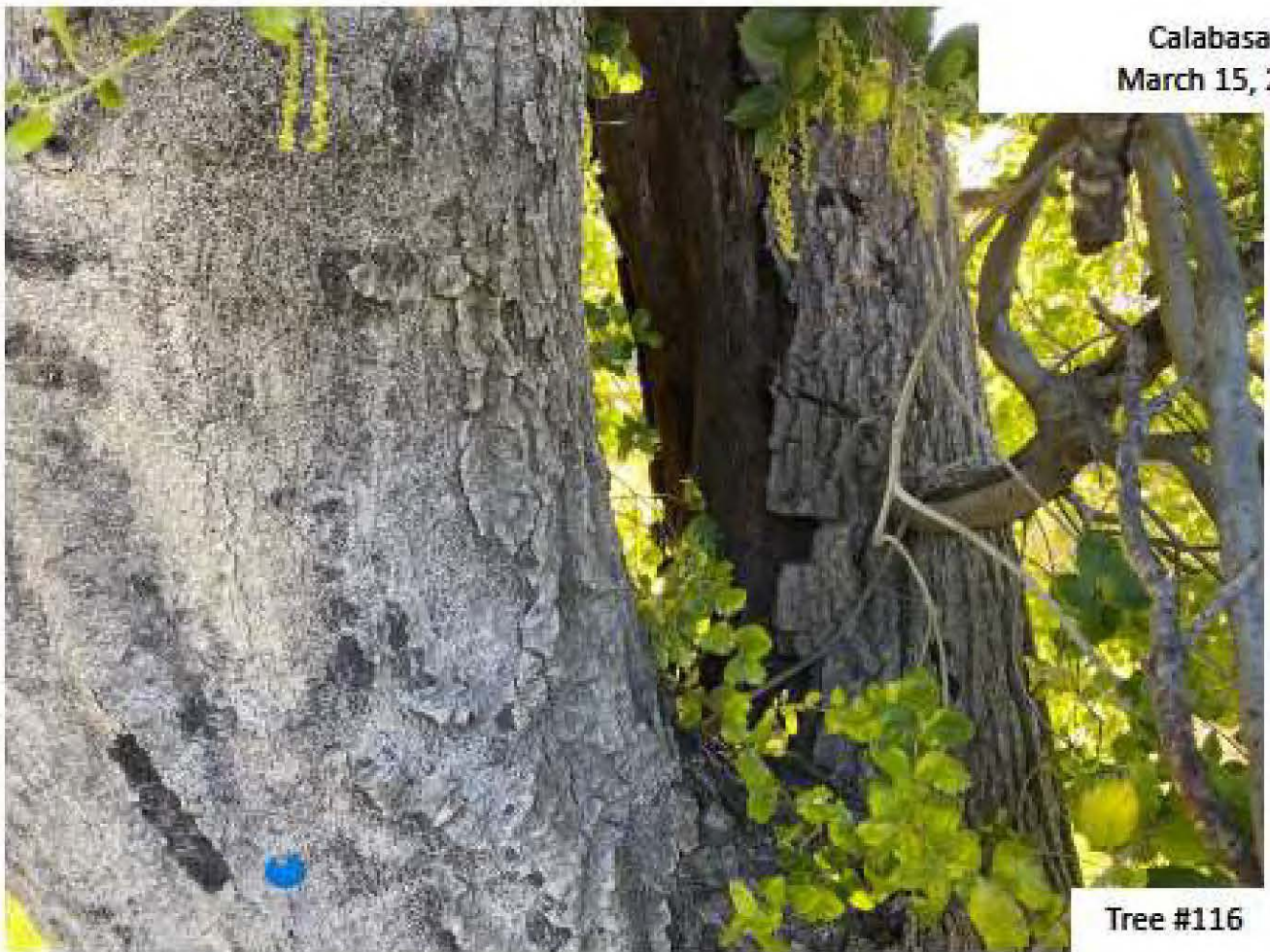
Tree #112 facing east



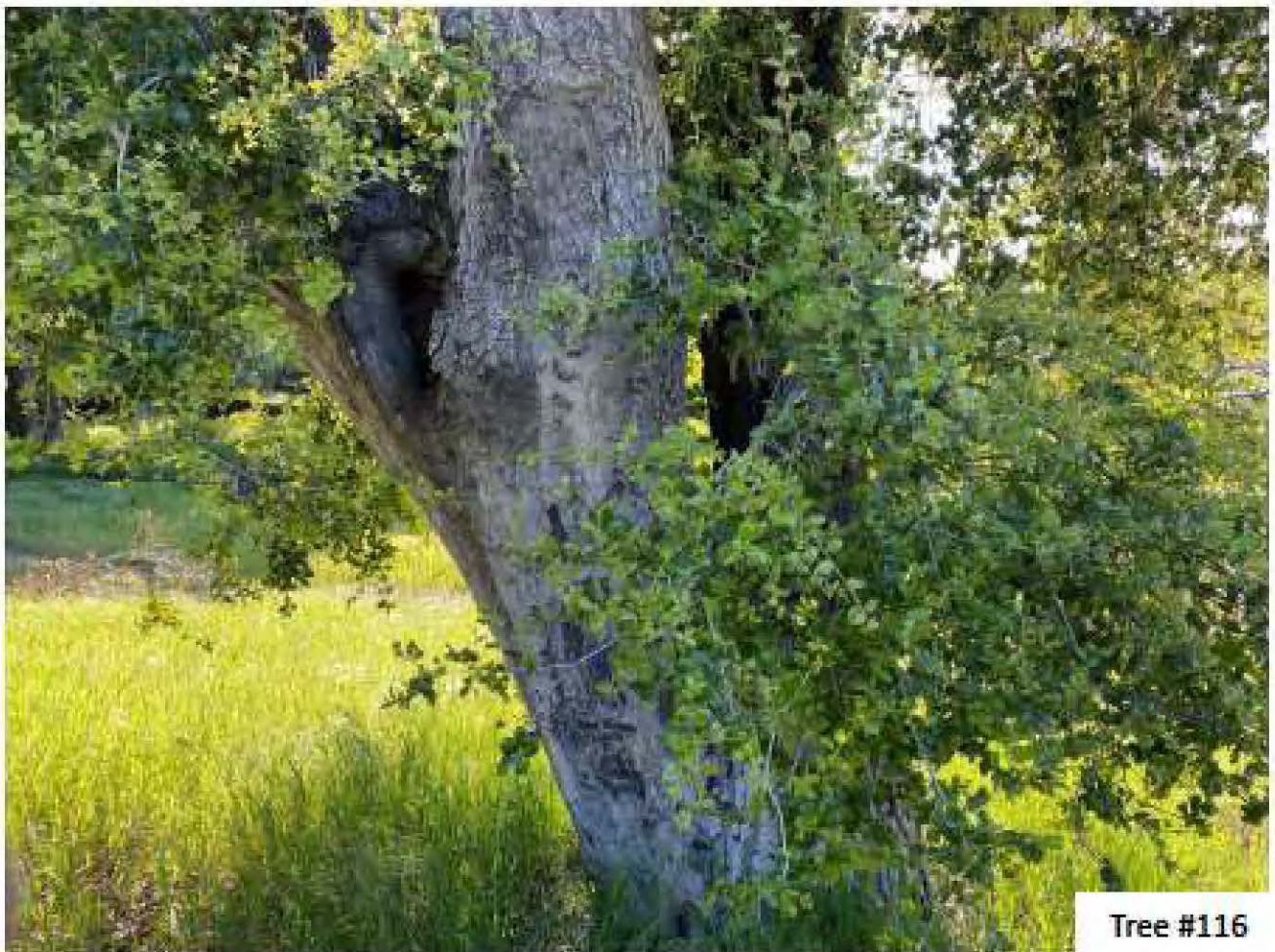
Tree #114 facing north



Calabasas Kia
March 15, 2023



Tree #116



Tree #116



Tree #117 facing west



Tree #118 facing west



Trees #121, #119, #120 facing south



Tree #121 facing south



Tree #122 facing south



Tree #123 facing east

#116

#117,
#118

#119-#123



Facing south

#119-#123

#124

#125,#126



Facing south









Trees #129 and #128 facing west



Tree #130 facing east



Tree #131 facing west



Trees #132 to #133 facing east

Calabasas Kia
March 15, 2023



Tree #134 facing north



Tree #135 facing west



Calabasas Kia
March 15, 2023



Tree #139 to #140 facing east



Tree #141 facing south

Calabasas Kia
March 15, 2023



Tree #142 facing south



Tree #143 facing east



Tree #144 facing south



Trees #146 to #145 facing south



Tree #147 facing southwest



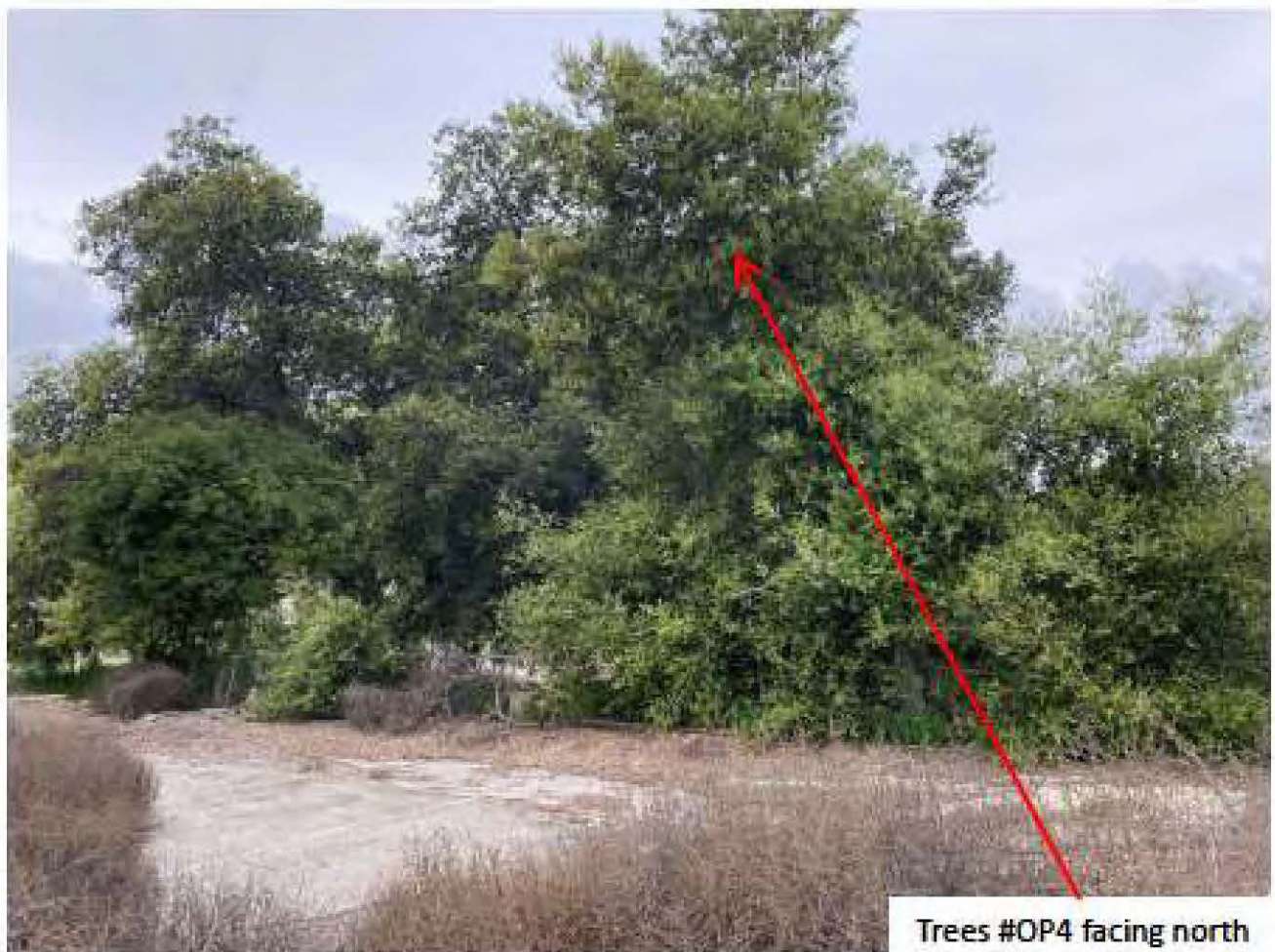
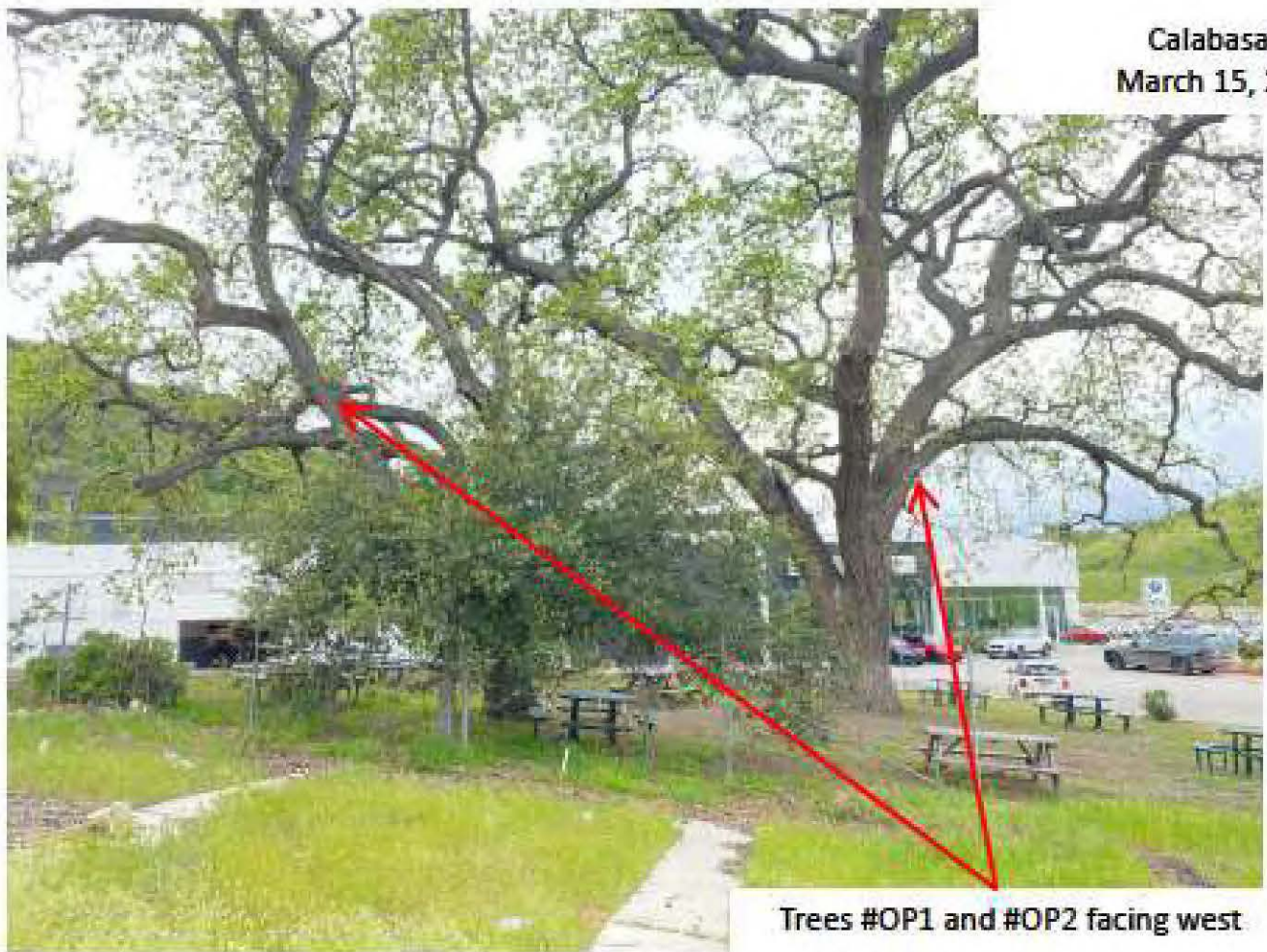
Tree #148 facing southwest



Tree #149 facing southwest



Tree #150 facing west



[illegible]

SUMMARY OF FIELD OBSERVATIONS

	TREE NUMBER	111	112	113	114	115	116	117	118	119	120
SPECIES	<i>Quercus agrifolia</i>	X	X	X	X	X	X	X	X	X	X
	<i>Quercus lobata</i>										
FORM	TREE HEIGHT	8'	35'	9'	25'	8'	50'	40'	40'	35'	35'
	CROWN SPREAD										
	UNBALANCED CROWN	X		X		X					
	LEAN DIRECTION										
	DBH (INCHES)	2"	28" 15" 12"	4" 4" 4" 2"	24"	7" 6"	24" 16"	26" 25" 24"	30"	15"	11" 8"
RATING	HERITAGE		X		X		X	X	X		
	HEALTH	C-	C	B	C	C	C-	C	C	B	B
	AESTHETICS/COMFORMITY	C-	C	C	C	C	C-	C	C	B	B
PHYSICAL CONDITION	VIGOR(LOW/ NORM/ HIGH)	N	N	N	N	N	N	N	N	N	N
	TRUNK CAVITY				X		X				
	TRUNK SAP OOZE										
	DEAD/MISSING BARK	X		X			X				
	CUT/DAMAGED ROOTS										
	BURIED ROOT COLLAR										
	STEM GIRDLING										
	CODOMINANCE		X				X	X	X	X	X
	INCLUDED BARK		X					X			
	SAPWOOD DAMAGE/DECAY	X					X				
	CANKERS										
	FUNGAL DECAY										
	INSECT DAMAGE										
	MAINSTEM DIEBACK										
	DEAD TWIGS/BRANCHES						X				
	FOLIAGE (FULL/SPARSE)						S				
	WEAK ATTACHMENT(S)						X				
	BADLY PRUNED										
	BRANCH CAVITIES						X	X	X		
	OVER-EXTENDED BRANCH				X		X				
	EPICORMIC GROWTH			X		X	X	X			
	TERRAIN - SLOPE/FLAT	S	S	S	S	S	S	S	S	S	S
	TARGET(S) PRESENT										

Remove 16-inch trunk or tree

[illegible]

[illegible]

[illegible]

[illegible]

DRIPLINE MEASUREMENTS

TREE NO.	DRIPLINE	N	NE	E	SE	S	SW	W	NW
101	HORIZ.	4'	10'	9'	12'	9'	0'	3'	4'
	VERT.	6'	3'	1'	2'	3'	0'	5'	6'
102	HORIZ.	30'	30'	30'	30'	35'	30'	34'	40'
	VERT.	5'	20'	20'	20'	6'	4'	5'	12'
103	HORIZ.	2'	2'	3'	7'	8'	8'	5'	2'
	VERT.	3'	3'	2'	2'	1'	1'	3'	3'
104	HORIZ.	12'	9'	9'	9'	5'	6'	7'	7'
	VERT.	15'	5'	5'	1'	2'	2'	5'	5'
105	HORIZ.	9'	3'	6'	4'	9'	4'	10'	9'
	VERT.	10'	8'	6'	5'	1'	1'	5'	10'
106	HORIZ.	13'	9'	6'	5'	8'	8'	15'	15'
	VERT.	8'	8'	3'	4'	1'	1'	15'	12'
107	HORIZ.	10'	7'	9'	7'	6'	7'	7'	10'
	VERT.	7'	6'	5'	5'	1'	5'	5'	7'
108	HORIZ.	15'	10'	0'	0'	7'	20'	20'	18'
	VERT.	20'	20'	0'	0'	5'	6'	12'	15'
109	HORIZ.	0'	0'	0'	0'	0'	10'	10'	0'
	VERT.	0'	0'	0'	0'	0'	0'	0'	0'
110	HORIZ.	8'	6'	6'	10'	14'	15'	10'	10'
	VERT.	15'	12'	10'	8'	8'	15'	20'	20'

DRIPLINE MEASUREMENTS

TREE NO.	DRIPLINE	N	NE	E	SE	S	SW	W	NW
111	HORIZ.	6'	0'	0'	0'	0'	0'	3'	5'
	VERT.	5'	0'	0'	0'	0'	0'	3'	4'
112	HORIZ.	30'	22'	20'	28'	28'	32'	23'	28'
	VERT.	8'	6'	6'	6'	8'	9'	10'	10'
113	HORIZ.	6'	3'	0'	0'	0'	0'	3'	6'
	VERT.	2'	2'	0'	0'	0'	0'	2'	2'
114	HORIZ.	20'	15'	15'	25'	22'	20'	18'	21'
	VERT.	5'	5'	5'	7'	7'	5'	8'	8'
115	HORIZ.	22'	15'	23'	20'	0'	0'	0'	7'
	VERT.	4'	3'	4'	4'	0'	0'	0'	2'
116	HORIZ.	24'	13'	4'	24'	35'	38'	25'	24'
	VERT.	20'	10'	2'	25'	6'	5'	15'	20'
117	HORIZ.	40'	33'	42'	54'	32'	30'	33'	45'
	VERT.	8'	6'	10'	4'	9'	15'	12'	4'
118	HORIZ.	30'	30'	42'	27'	26'	24'	28'	39'
	VERT.	20'	20'	12'	15'	9'	9'	12'	7'
119	HORIZ.	5'	20'	22'	15'	20'	25'	22'	5'
	VERT.	20'	20'	20'	15'	4'	6'	7'	20'
120	HORIZ.	5'	12'	10'	5'	6'	12'	14'	7'
	VERT.	15'	20'	15'	15'	15'	7'	10'	10'

DRIPLINE MEASUREMENTS

TREE NO.	DRIPLINE	N	NE	E	SE	S	SW	W	NW
121	HORIZ.	20'	20'	20'	20'	13'	20'	20'	15'
	VERT.	15'	15'	15'	15'	15'	15'	12'	10'
122	HORIZ.	12'	12'	12'	14'	9'	9'	9'	9'
	VERT.	6'	6'	10'	12'	8'	8'	6'	6'
123	HORIZ.	15'	20'	18'	9'	10'	14'	16'	15'
	VERT.	4'	8'	9'	9'	7'	5'	10'	8'
124	HORIZ.	27'	12'	20'	21'	22'	26'	15'	18'
	VERT.	4'	20'	20'	9'	3'	6'	12'	6'
125	HORIZ.	25'	25'	25'	23'	15'	0'	6'	8'
	VERT.	20'	20'	20'	20'	15'	0'	20'	20'
126	HORIZ.	7'	9'	15'	21'	17'	18'	25'	10'
	VERT.	15'	15'	15'	10'	15'	15'	8'	8'
127	HORIZ.	25'	25'	0'	0'	0'	6'	0'	6'
	VERT.	12'	12'	0'	0'	0'	4'	0'	15'
128	HORIZ.	25'	27'	18'	15'	0'	0'	28'	28'
	VERT.	3'	10'	10'	15'	0'	0'	5'	8'
129	HORIZ.	25'	18'	16'	31'	30'	30'	28'	25'
	VERT.	20'	20'	15'	15'	1'	1'	5'	5'
130	HORIZ.	17'	26'	9'	9'	9'	28'	26'	26'
	VERT.	25'	20'	8'	8'	8'	6'	10'	18'

DRIPLINE MEASUREMENTS

TREE NO.	DRIPLINE	N	NE	E	SE	S	SW	W	NW
131	HORIZ.	28'	15'	0'	0'	0'	18'	23'	28'
	VERT.	10'	7'	0'	0'	0'	8'	20'	20'
132	HORIZ.	20'	0'	0'	0'	0'	0'	8'	10'
	VERT.	15'	0'	0'	0'	0'	0'	2'	3'
133	HORIZ.	26'	0'	0'	0'	25'	25'	20'	0'
	VERT.	20'	0'	0'	0'	3'	3'	15'	0'
134	HORIZ.	3'	4'	7'	5'	6'	9'	5'	9'
	VERT.	2'	2'	2'	2'	2'	2'	2'	2'
135	HORIZ.	28'	23'	14'	15'	32'	28'	25'	27'
	VERT.	20'	10'	25'	25'	3'	5'	15'	15'
136	HORIZ.	21'	16'	22'	28'	21'	10'	14'	16'
	VERT.	15'	15'	15'	3'	3'	4'	15'	15'
137	HORIZ.	10'	6'	6'	10'	5'	9'	12'	18'
	VERT.	10'	8'	3'	6'	2'	3'	6'	10'
138	HORIZ.	5'	3'	0'	30'	22'	26'	28'	5'
	VERT.	10'	20'	20'	10'	12'	20'	20'	20'
139	HORIZ.	3'	3'	9'	9'	20'	0'	0'	0'
	VERT.	12'	20'	8'	8'	15'	18'	5'	5'
140	HORIZ.	12'	23'	24'	21'	21'	8'	17'	10'
	VERT.	2'	8'	8'	8'	8'	6'	6'	2'

DRIPLINE MEASUREMENTS

TREE NO.	DRIPLINE	N	NE	E	SE	S	SW	W	NW
141	HORIZ.	4'	4'	4'	7'	8'	7'	4'	4'
	VERT.	4'	4'	4'	3'	4'	4'	6'	6'
142	HORIZ.	13'	7'	8'	10'	21'	17'	23'	12'
	VERT.	6'	3'	7'	2'	1'	2'	5'	3'
143	HORIZ.	21'	26'	27'	29'	15'	25'	23'	20'
	VERT.	12'	15'	115'	3'	6'	10'	15'	12'
144	HORIZ.	14'	22'	21'	17'	14'	14'	15'	11'
	VERT.	8'	5'	8'	10'	10'	12'	12'	4'
145	HORIZ.	18'	25'	21'	20'	27'	28'	25'	18'
	VERT.	3'	3'	3'	3'	3'	3'	3'	3'
146	HORIZ.	30'	21'	0'	0'	0'	0'	0'	17'
	VERT.	0'	0'	0'	0'	0'	0'	0'	0'
147	HORIZ.	9'	3'	4'	8'	11'	8'	18'	15'
	VERT.	1'	5'	1'	1'	3'	6'	2'	5'
148	HORIZ.	3'	0'	0'	0'	0'	0'	6'	10'
	VERT.	1'	0'	0'	0'	0'	0'	3'	6'
149	HORIZ.	6'	4'	5'	7'	10'	10'	10'	7'
	VERT.	1'	3'	3'	3'	2'	2'	3'	3'
150	HORIZ.	16'	8'	6'	7'	10'	11'	12'	15'
	VERT.	1'	6'	3'	3'	1'	2'	3'	4'

DRIPLINE MEASUREMENTS

TREE NO.	DRIPLINE	N	NE	E	SE	S	SW	W	NW
OP1	HORIZ.	0'	0'	0'	40'	40'	35'	0'	0'
	VERT.	0'	0'	0'	25'	15'	20'	0'	0'
OP2	HORIZ.	55'	44'	45'	40'	60'	45'	55'	50'
	VERT.	8'	20'	40'	40'	15'	10'	10'	10'
OP3	HORIZ.	0'	25'	0'	0'	0'	0'	0'	0'
	VERT.	0'	10'	0'	0'	0'	0'	0'	0'
OP4	HORIZ.	36'	30'	28'	32'	35'	25'	16'	27'
	VERT.	10'	10'	10'	10'	8'	20'	20'	20'
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GLOSSARY

INTRODUCTION

Familiarity with the following definitions is necessary to the basic understanding of the tree ordinance, this tree report, and of the procedures used to evaluate the trees and the site conditions. There are numerous diseases and insects that frequently attack trees. A long discourse in plant pathology or entomology is not a prerequisite to develop a basic understanding of the effects of disease and insects upon living plant tissue but a basic knowledge of disease and insects should include an understanding of the following definitions:

SPECIES/DIMENSIONS

1. **Tree Number** - each protected tree in the field has been assigned a number that corresponds to a tree location on the Tree Location Map.
2. **Species** - is the type of tree that is being evaluated.
3. **Trunk Diameter** - as measured at 4½' above mean natural grade or, traditionally, DBH (diameter at breast height). This may be altered if the measurement cannot be made at 4½' feet or if makes sense to measure above or below that point.
4. **Tree Height** - is the approximate height of each assessed tree.
5. **Crown Spread** - is the approximate, average diameter of the crown or canopy.
6. **Lean Direction** - is the direction the tree is inclined from the natural vertical position.

PHYSICAL CONDITION

1. **Vigor** - is the capacity of a tree for growth and survival. Below are the ratings:

Low - Little new tip growth; poor leaf color; abnormal bark; much dead wood; significantly thinning foliage.

Normal - New tip growth; good leaf color; some insect damage and twig dieback; no significant dieback;

High - New tip growth; good leaf color; dense foliage; usually found in younger trees;

A vigorous tree will more easily ward off disease and/or insect attacks, and should recover from impacts more quickly than a less vigorous tree.

2. **Trunk Cavity/Damage** - A cavity is a hollow area in the trunk, usually due to fire or wood decay. Damage is a damaged area on the trunk, usually due to an external (abiotic) force on the tree.
3. **Water Pocket** - pockets formed at branch crotches that can hold water and possibly weaken the tree's structure (possible hazard).
4. **Trunk Sap Ooze** - the exudation of liquid, usually from wounds; trunk sap ooze.
5. **Codominance** – equal in size and importance, usually associated with either trunks/stems or scaffold limbs/branches in the crown. Often can and should be corrected by pruning.
6. **Included Bark** - bark that is embedded between a branch and its parent stem or between codominant stems causing a weak attachment.
7. **Buried Root Collar** - the root collar is the transition area between the bark and the trunk. Burying the root collar may lead to fungal infection.
8. **Fungal Disease** - diseases that attack live tissue/external signs (i.e. mushrooms, conks) of internal wood decay.

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9. **Insect Damage** - is some form of damage to the parts of the tree caused by insects or mites (e.g. scale, caterpillars, weevils, borers, mites, etc.).
10. **Mainstem Dieback** - death of healthy mainstems from the growing tip back.
11. **Twig/Branch Dieback** - death of twigs from the growing tip back.
12. **Thin Foliage** - defoliation and twig dieback throughout the canopy.
13. **Weak Attachments** - poorly formed branch connection at a crotch.
14. **Branch Cavities** - hollow areas in the limbs in the crown, usually due to the decay of wood.
15. **Over-extended Branch** - a large branch usually growing horizontally that may have excessive end weight and that exerts tremendous stress on its attachment. Can be corrected with reduction pruning.
16. **Epicormic Growth** - growth from adventitious buds along trunk and/or main limbs, rather than on twigs usually due to stress or poor pruning.
17. **Terrain** - refers to the general topography of the land where the tree is found.

RATING

1. **Heritage** - can vary in definition by agency but generally indicates a tree of significant size and age.
2. The **Health** of the trees was visually determined from a macroscopic inspection of signs and symptoms of disease. The following describes our rating system:
 - A - Outstanding** - A healthy and vigorous tree characteristic of its species and free of any significant visible signs of disease or insect damage;
 - B - Above Average** - A healthy and vigorous tree. However, there are minor visible signs of disease and insect damage;
 - C - Average** - Although healthy in overall appearance, there is a normal amount of disease and/or insect damage;
 - D - Below Average/Poor*** - This tree is characterized by exhibiting a greater degree of disease and/or insect damage or loss of structural integrity than normal and appears to be in a state of decline. This tree also exhibits extensive signs of dieback;
 - F - Dead*** - This tree exhibits no signs of life at the time of field evaluation.

*A tree rating of "D" and lower is in a low stage of vigor and naturally a meaningful level of recovery is doubtful. Removal should be considered if it is within the proposed project development.
3. The **Aesthetic/Conformity** quality of the trees was visually determined from an overall inspection of appearance. The following describes our system:
 - A. Outstanding** - The tree is visually symmetrical, having the ideal form and appearance for the species;
 - B. Above Average** - The tree, though may not be perfectly symmetrical, has a nearly ideal form for the species with very little dieback of foliage or twigs and branches;
 - C. Average** - The tree has some asymmetry for the species with some defects that can be corrected and/or has some dieback of foliage and twigs and branches;
 - D. Poor** - The tree has few positive characteristics that probably cannot be corrected and may detract from the beauty of the landscape.

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REMARKS (Some other terms that may be used)

1. **Bark Beetle Frass** – are wood fragments (dust) mixed in the insect's excrement produced by boring.
2. **Basal Growth** – is leaf growth generated from the base of the trunk.
3. **Cable/Brace** – provides support to relieve stress on a weak part of the tree (e.g. where two trunks form a "V" crotch.
4. **Cankers** – are rough swellings with depressed centers resulting in death of tissue that later cracks open and exposes the wood underneath in twigs, branches, and/or trunks. May be a sign of fungal damage.
5. **Chlorotic Leaves** – leaf veins remain normally green but the tissue between veins becomes yellow. Usually caused by nutrient deficiencies.
6. **Compartmentalization** – Physiological process in trees that creates the chemical and physical boundaries that act to limit the spread of disease and the decay organisms. Often seen where branches have been pruned properly.
7. **Crown** – parts of the tree above the trunk, including leaves, branches, and scaffold branches.
8. **Crown-clean pruning** – removal of dead, dying, diseased, rubbing, and structurally unsound branches, etc.
9. **Crown reduction pruning** – Removal of large branches and/or cutting back to large laterals to reduce the height or spread of the crown; sometimes referred to as “drop crotch” pruning or “natural pruning.”
10. **Exfoliating Bark** – the flaking off of bark from trunk, branches and/or twigs.
11. **Exposed Buttress Roots** – when soil is absent at the base of the tree exposing large roots at trunk flare.
12. **Fire Damage** – each tree may be rated on the amount of burn it has received.
13. **Heart Rot** – decay in the center of the tree (heartwood).
14. **Lion-tailing** – an improper pruning technique where internal foliage and branches are removed, leaving twigs and foliage concentrated at the branch ends.
15. **Mistletoe** – is a leafy evergreen, perennial parasite with dark green leathery leaves.
16. **Multiple stems/branches** – single location where several branches are attached often creating weak attachments.
17. **Powdery Mildew** – a white powdery fungus on leaves often found when new growth becomes wet for long periods of time; leaves may be distorted, stunted and drop prematurely.
18. **Reduction cuts** – cutting a branch back to a live lateral branch which will take over as the new end of that branch.
19. **Removal cuts** – a thinning cut back to the trunk or the parent stem (branch) that preserves the branch collar.
20. **Scaffold limb** – A primary structural branch of the crown.
21. **Stub cuts** – an improper pruning technique that leaves a stub that may lead to structural defects.
22. **Topping** – the improper pruning of large limbs, usually growing vertically, to reduce the height of a tree.
23. **Witches Broom** – is an abnormal growth cluster of twigs that may be caused by pruning, insects, mites, fungus, etc.

