HORTICULTURAL Associates

Consultants in Horticulture and Arboriculture

TREE PRESERVATION AND MITIGATION REPORT

149 4th Street Sonoma, CA

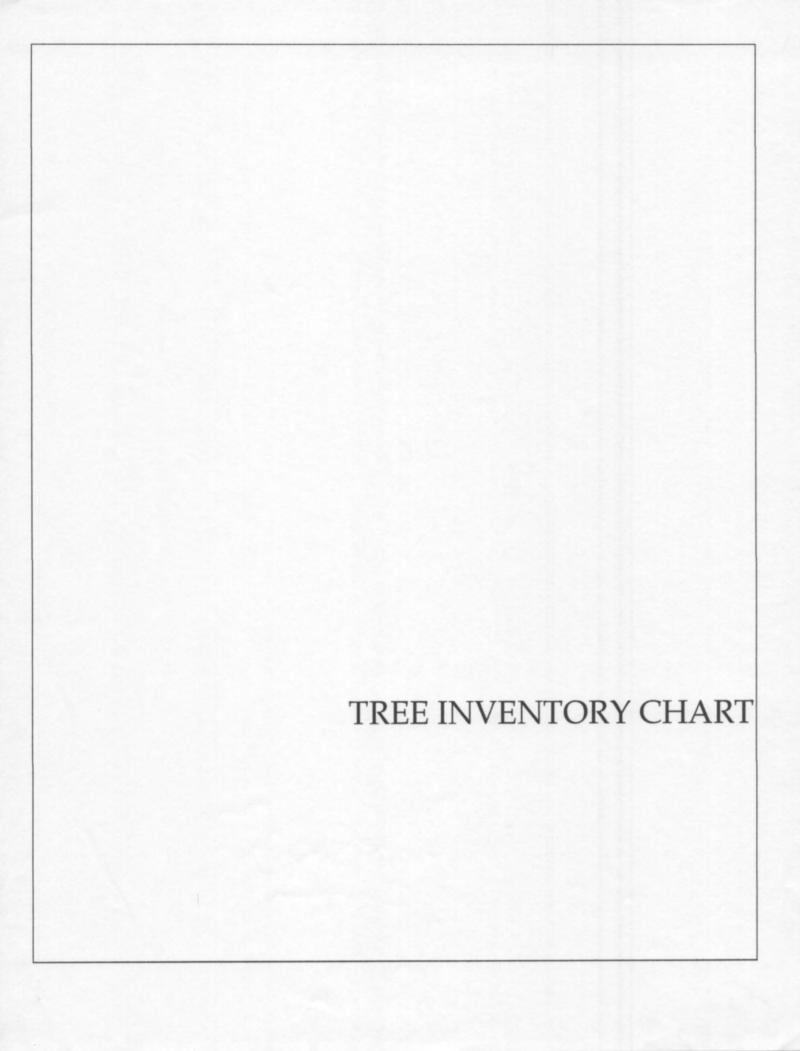
Prepared for:

Caymus Builders 300 Derek Place Roseville, CA 95661

Prepared by:

John C. Meserve Consulting Arborist and Horticulturist American Society of Consulting Arborists ISA Certified Arborist, WE #0478A ISA Tree Risk Assessment Qualified

June 7, 2017



Tree #	Species	Common Name	Trunk (dbh ± inches)	Multiple Trunk Conversion to TPZ (feet)	Height (± feet)	Radius (± feet)	Health 1-5	Structure 1-4	Tag?	Expected Impact	Recommendations
1	Pinus radiata	Monterey Pine	12+12+13	21	40	18	2	2	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
2	Quercus agrifolia	Coast Live Oak	4+5+7	10	20	12	4	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
3	Quercus agrifolia	Coast Live Oak	7+10	12	25	12	4	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
4	Pinus radiata	Monterey Pine	24	24	35	18	2	2	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
5	Olea europaea	Olive	2+4+4+5+6	10	15	12	4	3	Yes	3	2
6	Quercus garryana	Oregon Oak	10	10	22	14	4	3	Yes	3	2
7	Quercus garryana	Oregon Oak	14	14	35	25	4	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
8	Quercus douglasii	Blue Oak	18	18	35	24	4	3	Yes	3	1, 3, 4, 5, 6, 7, 8, 9
9	Quercus douglasii	Blue Oak	16	16	35	24	4	3	Yes	3	2
10	Olea europaea	Olive	4+12+10+10+5	20	30	18	4	3	Yes	3	2
11	Quercus douglasii	Blue Oak	14	14	35	18	4	3	Yes	3	2
12	Quercus douglasii	Blue Oak	5+5+6	9	12	10	4	3	Yes	3	2
13	Quercus douglasii	Blue Oak	12	12	35	18	4	3	Yes	3	2
14	Quercus douglasii	Blue Oak	10	10	30	12	4	3	Yes	3	2
15	Quercus douglasii	Blue Oak	10	10	15	12	4	3	Yes	3	2
16	Quercus douglasii	Blue Oak	12	12	30	18	4	3	Yes	3	2
17	Quercus douglasii	Blue Oak	20	20	40	18	4	3	Yes	3	2
18	Quercus douglasii	Blue Oak	13	13	40	18	4	3	Yes	3	2

Tree #	Species	Common Name	Trunk (dbh ± inches)	Multiple Trunk Conversion to TPZ (feet)	Height (± feet)	Radius (± feet)	Health 1-5	Structure 1-4	Tag?	Expected Impact	Recommendations
19	Quercus douglasii	Blue Oak	10	10	35	14	3	3	Yes	3	2
20	Prunus dulcis	Almond	10	10	30	12	2	3	Yes	3	2
21	Quercus douglasii	Blue Oak	13	13	30	10	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
22	Quercus douglasii	Blue Oak	14	14	35	15	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
23	Quercus douglasii	Blue Oak	12	12	35	15	4	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
24	Quercus douglasii	Blue Oak	20	20	35	22	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
25	Quercus douglasii	Blue Oak	6	6	25	15	2	2	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
26	Olea europaea	Olive	12	12	25	16	4	3	Yes	3	2
27	Quercus douglasii	Blue Oak	5+3	6	8	12	2	2	Yes	3	2
28	Quercus douglasii	Blue Oak	6	6	30	12	3	3	Yes	3	2
29	Quercus agrifolia	Coast Live Oak	6+4	7	22	12	2	3	Yes	3	2
30	Quercus douglasii	Blue Oak	6+9	11	21	15	3	3	Yes	3	3
31	Quercus douglasii	Blue Oak	7	7	35	15	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
32	Quercus douglasii	Blue Oak	6	6	25	14	3	3	Yes	3	2
33	Quercus agrifolia	Coast Live Oak	6+6	8	20	12	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
34	Quercus douglasii	Blue Oak	5+7	9	30	15	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
35	Quercus douglasii	Blue Oak	4	4	20	12	3	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
36	Quercus agrifolia	Coast Live Oak	6+8	10	18	12	4	3	Yes	3	2

Tree #	Species	Common Name	Trunk (dbh ± inches)	Multiple Trunk Conversion to TPZ (feet)	Height (± feet)	Radius (± feet)	Health 1-5	Structure 1-4	Tag?	Expected Impact	Recommendations
37	Quercus douglasii	Blue Oak	8+8	11	30	14	4	3	Yes	3	2
38	Umbellularia californica	California Bay	7	7	25	12	4	3	Yes	3	2
39	Quercus douglasii	Blue Oak	12+18	22	40	22	3	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
40	Quercus agrifolia	Coast Live Oak	10	10	20	14	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
41	Quercus douglasii	Blue Oak	12	12	35	18	4	3	Yes	3	1, 3, 4, 5, 6, 7, 8, 9
42	Quercus agrifolia	Coast Live Oak	13	13	30	25	4	3	Yes	3	2
43	Umbellularia californica	California Bay	6	6	30	12	3	3	Yes	3	2
44	Quercus agrifolia	Coast Live Oak	11+12	16	30	18	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
45	Umbellularia californica	California Bay	7	7	35	14	4	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
46	Quercus agrifolia	Coast Live Oak	18	18	35	25	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
47	Quercus agrifolia	Coast Live Oak	12+16+16	26	40	28	4	2	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
48	Quercus douglasii	Blue Oak	6	6	25	14	3	3	Yes	3	2
49	Quercus douglasii	Blue Oak	6	6	30	16	3	3	Yes	3	2
50	Quercus douglasii	Blue Oak	7	7	30	16	3	3	Yes	3	2
51	Quercus douglasii	Blue Oak	6	6	22	16	4	3	Yes	3	2
52	Quercus douglasii	Blue Oak	7	7	30	15	4	3	Yes	3	2
53	Quercus douglasii	Blue Oak	7	7	30	15	4	3	Yes	3	2
54	Quercus douglasii	Blue Oak	6+8+12	16	35	20	3	2	Yes	3	2

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55	Quercus douglasii	Blue Oak	6	6	18	10	4	3	Yes	3	2
56	Olea europaea	Olive	4	4	20	10	4	3	Yes	3	2
57	Quercus agrifolia	Coast Live Oak	9	9	21	12	3	2	Yes	3	2
58	Quercus douglasii	Blue Oak	10+10	14	30	16	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
59	Quercus agrifolia	Coast Live Oak	12	12	14	10	4	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
60	Quercus agrifolia	Coast Live Oak	17	17	35	18	4	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
61	Quercus douglasii	Blue Oak	14+8+8+5	19	40	20	3	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
62	Quercus douglasii	Blue Oak	10+14	17	40	18	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
63	Quercus douglasii	Blue Oak	5+4	6	25	14	3	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
64	Quercus douglasii	Blue Oak	12+13+13	22	40	22	4	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
65	Quercus douglasii	Blue Oak	11	11	20	16	4	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
136	Quercus agrifolia	Coast Live Oak	8	8	20	10	4	3	Yes	3	2
137	Quercus agrifolia	Coast Live Oak	6	6	20	8	4	3	Yes	3	2
138	Quercus agrifolia	Coast Live Oak	4	4	14	5	4	3	Yes	3	2
139	Quercus agrifolia	Coast Live Oak	5	5	14	8	4	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
140	Quercus lobata	Valley Oak	25	25	40	18	3	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
141	Quercus agrifolia	Coast Live Oak	7+9	11	25	12	4	3	Yes	3	2
142	Umbellularia californica	Bay Laurel	3+4+4+9	11	20	10	4	4	Yes	1	1, 3, 4, 5, 6, 7, 8, 9

Tree #	Species	Common Name	Trunk (dbh ± inches)	Multiple Trunk Conversion to TPZ (feet)	Height (± feet)	Radius (± feet)	Health 1-5	Structure 1-4	Tag?	Expected Impact	Recommendations
143	Quercus agrifolia	Coast Live Oak	24+24+10	35	40	20	3	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
144	Olea europaea	Olive	5	5	20	10	4	4	Yes	1	1, 3, 4, 5, 6, 7, 8, 9

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	KEY TO TREE
	INVENTORY CHART
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KEY TO TREE INVENTORY CHART

149 4th Street Sonoma, California

Tree Number

Each tree has been identified in the field with an aluminum tag and reference number. Tags are attached to the trunk at approximately eye level and the *Tree Location Plan* illustrates the location of each numbered tree.

Species

Each tree has been identified by genus, species and common name. Many species have more than one common name.

Trunk

The diameter of each trunk has been estimated at 4.5 feet above adjacent grade. Trunk diameter is a good indicator of age, and is commonly used to determine mitigation replacement requirements.

Height

Height is estimated in feet, using visual assessment.

Radius

Radius is estimated in feet, using visual assessment. Since many canopies are asymmetrical, it is not uncommon for a radius estimate to be an average of the canopy size, or different that what is actually present. Radius is generally used as an area of root zone to be protected from development activity

Health

The following descriptions are used to rate the health of a tree. Trees with a rating of 4 or 5 are very good candidates for preservation and will tolerate more construction impacts than trees in poorer condition. Trees with a rating of 3 may or may not be good candidates for preservation, depending on the species and expected construction impacts. Trees with a rating of 1 or 2 are generally poor candidates for preservation.

- (5) Excellent health and vigor are exceptional, no pest, disease, or distress symptoms.
- (4) Good health and vigor are average, no significant or specific distress symptoms, no significant pest or disease.
- (3) Fair health and vigor are somewhat compromised, distress is visible, pest or disease may be present and affecting health, problems are generally correctable.
- (2) Marginal health and vigor are significantly compromised, distress is highly visible and present to the degree that survivability is in question.
- (1) Poor decline has progressed beyond the point of being able to return to a healthy condition again. Long-term survival is not expected. This designation includes dead trees.

Structure

The following descriptions are used to rate the structural integrity of a tree. Trees with a rating of 3 or 4 are generally stable, sound trees which do not require significant pruning, although cleaning, thinning, or raising the canopy might be desirable. Trees with a rating of 2 are generally poor candidates for preservation unless they are preserved well away from improvements or active use areas. Significant time and effort would be required to reconstruct the canopy and improve structural integrity. Trees with a rating of 1 are hazardous and should be removed.

- (4) Good structure minor structural problems may be present which do not require corrective action.
- (3) Moderate structure normal, typical structural issues which can be corrected with pruning.
- (2) Marginal structure serious structural problems are present, which may or may not be correctable with pruning, cabling, bracing, etc.
- (1) Poor structure hazardous structural condition that cannot be effectively corrected with pruning or other measures, may require removal depending on location and the presence of targets.

Development Impacts

Considering the proximity of construction activities, type of activities, tree species, and tree condition the following ratings are used to estimate the amount of impact on tree health and stability. Most trees will tolerate a (1) rating, many trees could tolerate a (2) rating with careful consideration and mitigation, but trees with a (3) rating are poor candidates for preservation due to their very close proximity to construction or because they are located within the footprint of construction and cannot be preserved.

- (3) Significant impact on long-term tree integrity can be expected as a result of proposed development.
- (2) Moderate impact on long-term tree integrity can be expected as a result of proposed development.
- (1) Minor impact on long-term tree integrity can be expected as a result of proposed development.
- (0) No impact is expected

Recommendations

Recommendations are provided for removal or preservation. For those being preserved, protection measures and mitigation procedures to offset impacts and improve tree health are provided.

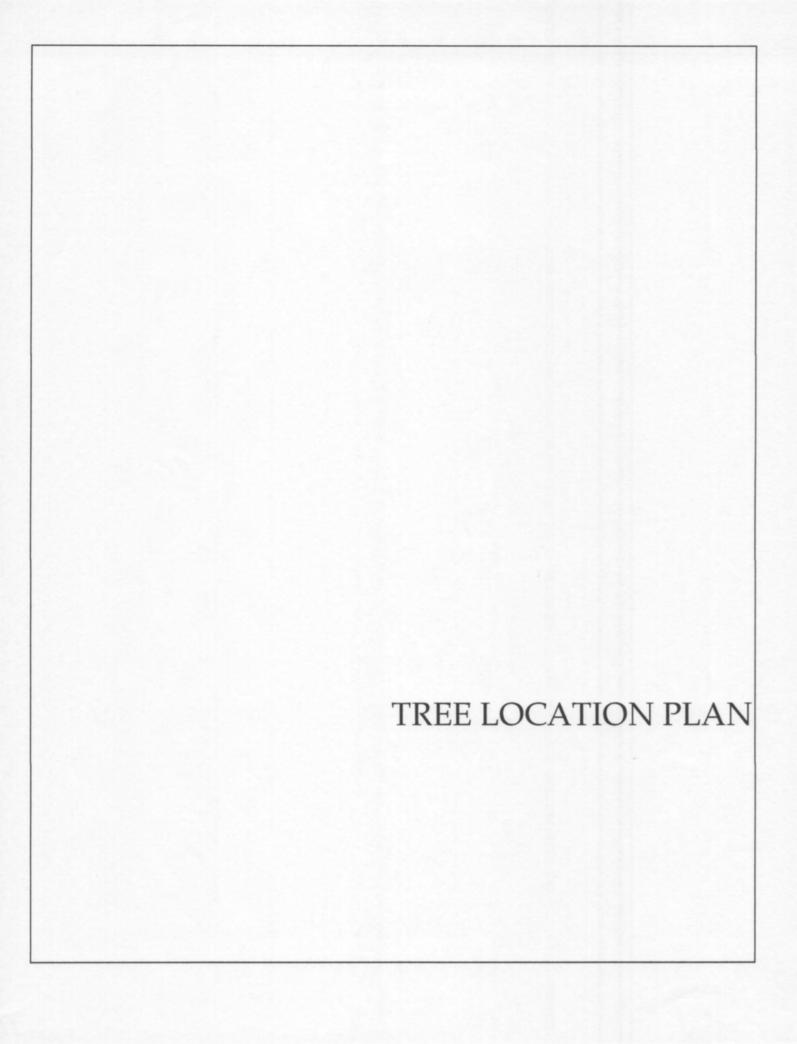
- (1) Preservation appears to be possible.
- (2) Removal is required due to significant development impacts.

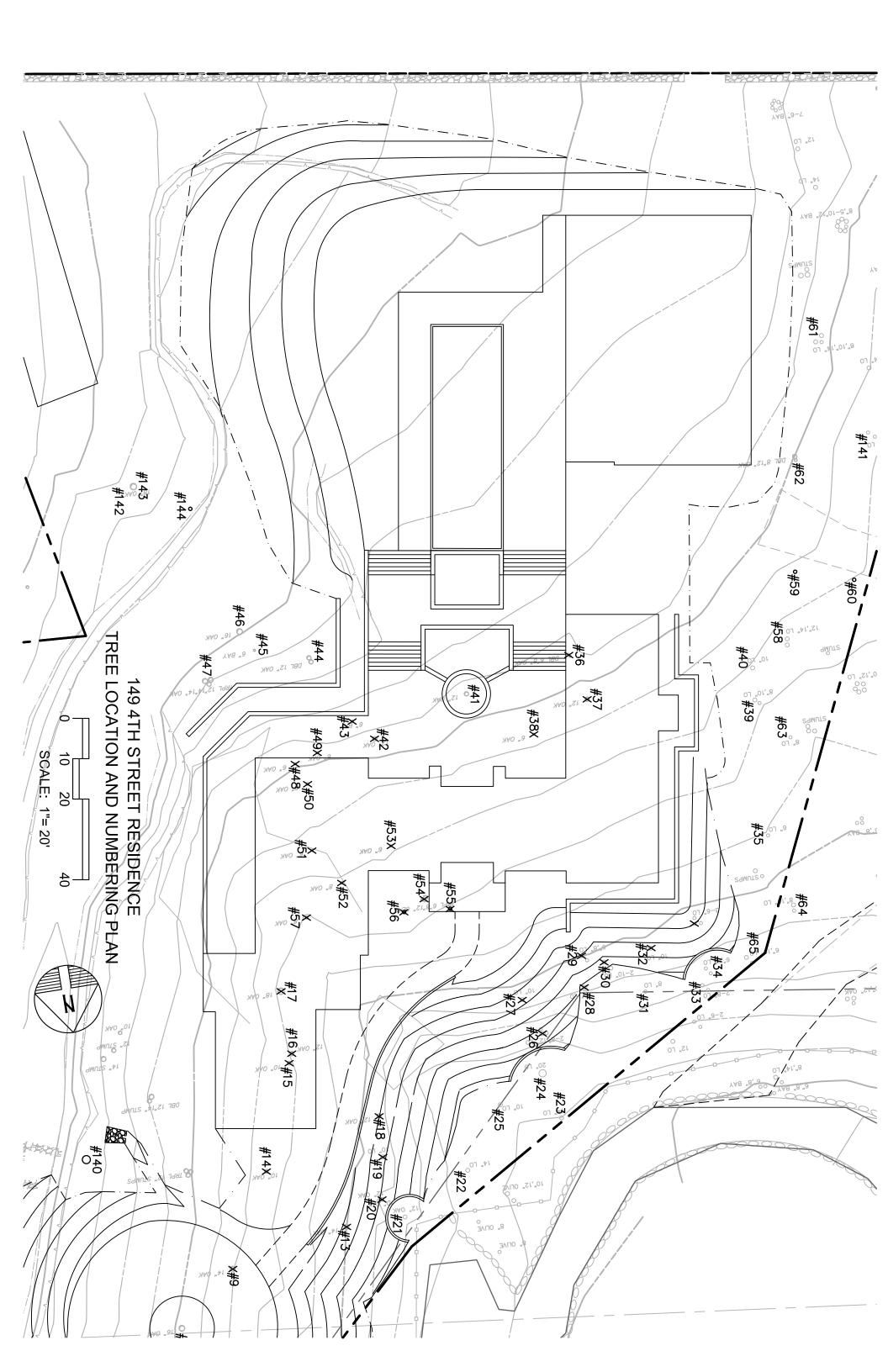
(3) Install temporary protective fencing prior to beginning any grading or construction at the site. Tree protection fencing shall be located at the edge of the Tree Protection Zone (TPZ), which is designated as one foot from the trunk for each one-inch of trunk diameter as documented in the attached Tree Inventory. As an example, a trunk diameter of 12 inches requires a protective fence 12 feet from the trunk.

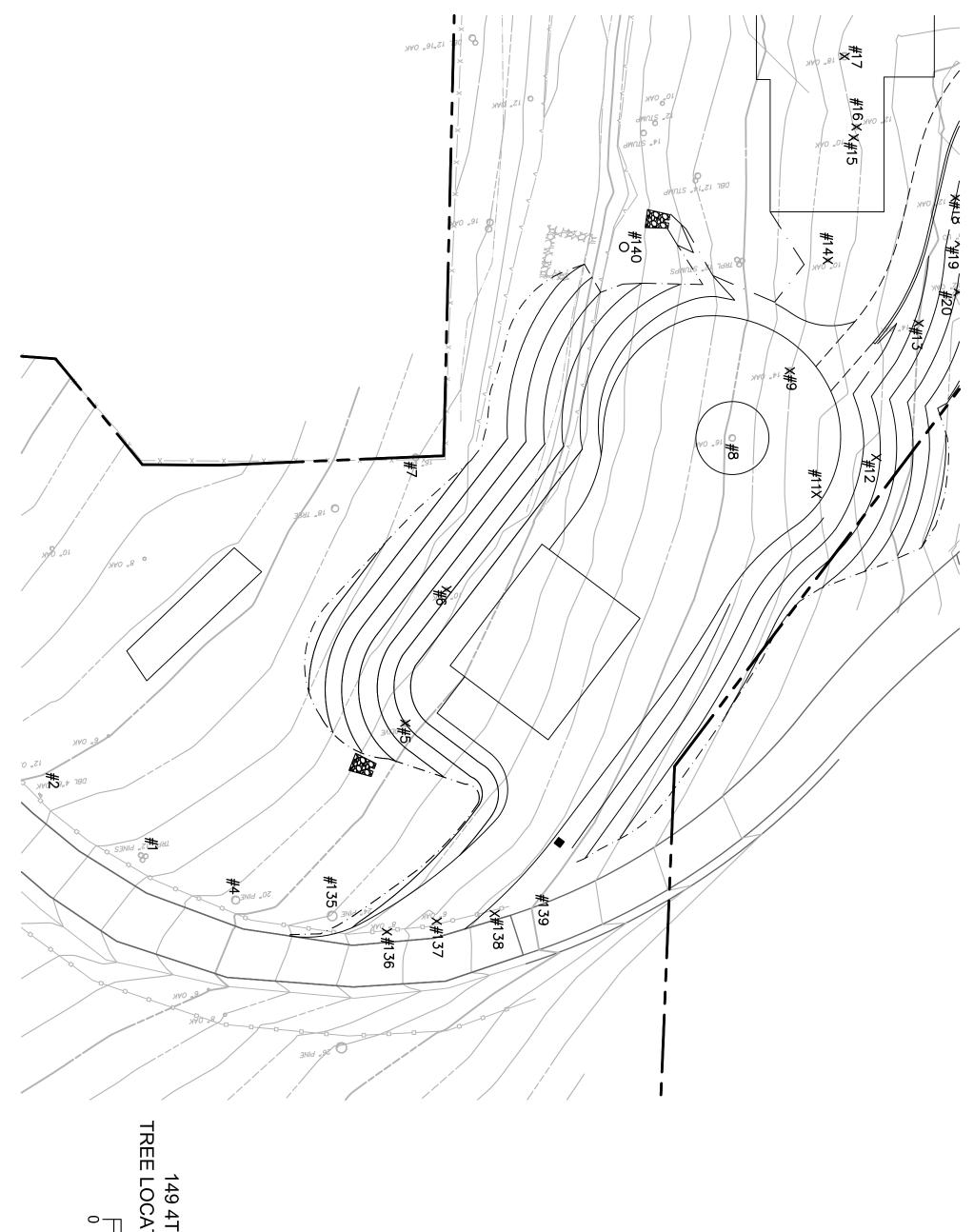
Fencing must be retained in the designated location for the duration of all construction activity in the area. Fences may not be modified for any reason without the written approval of the project arborist.

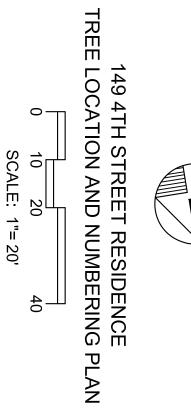
Tree protection fencing must conform to the Tree Fencing Detail included in this report, or an approved equivalent.

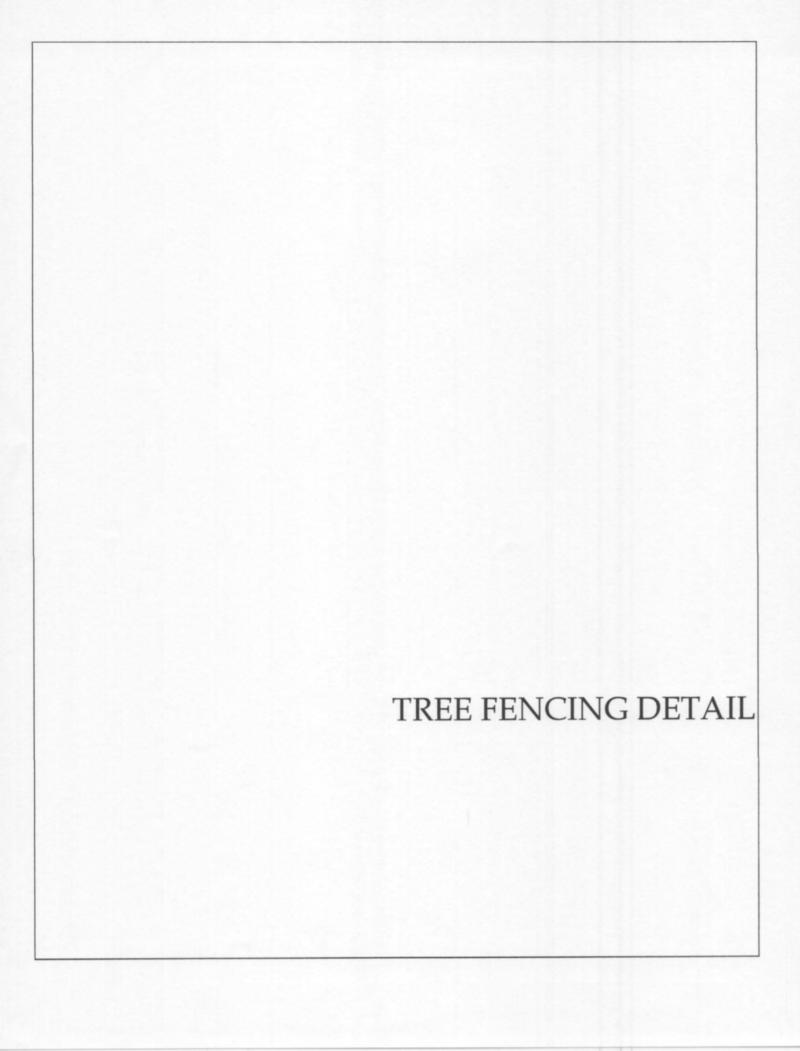
- (4) Maintain existing grade within the fenced portion of the dripline. Route drainage swales and all underground work outside the dripline.
- (5) Place a 4" layer of chipped bark mulch over the soil surface within the Tree Protection Zone prior to installing temporary fencing. Maintain this layer of mulch throughout construction.
- (6) Prune to clean, raise, or provide necessary clearance, per International Society of Arboriculture Pruning Standards. Pruning to occur by, or under the supervision of, an Arborist certified by the International Society of Arboriculture.
- (7) Any approved grading that occurs within the designated Tree Protection Zone (TPZ) must be completed under the direction of the project arborist. All roots greater than one inch in diameter shall be cleanly pruned prior to cut grading activity using a sharp pruning saw, cut-off saw, or other approved tool that provides a clean cut. Cut roots must be protected from desiccation if they are exposed to air for more than 24 hours by covering the root end or cut root area with a wet fabric material. Burlap or used carpeting works well for this purpose. No sealant is required on cut roots.
- (8) Trees that receive impacts within their designated Tree Protection Zones (TPZ) may require post construction mitigation measures to assist in their recovery. Mitigation measures will be determined by the project arborist on a tree-by-tree basis depending on the extent of impact. Measures could include, but are not limited to, additional mulching and periodic irrigation.
- (9) Removal of trees approved for removal has the potential to significantly impact adjacent trees that are being preserved, and the project arborist must direct these demolition activities. Trees being removed may not be pushed out of the ground to keep from damaging preserved tree root systems and will require trunk grinding. Removal activities may not damage the canopies of adjacent trees. Removal equipment may not work within the designated Tree Protection Zones of preserved trees.

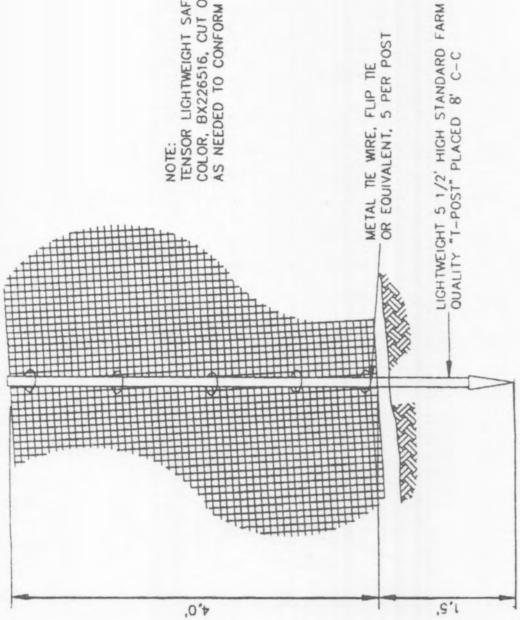












AS NEEDED TO CONFORM TO SLOPING TERRAIN. TENSOR LIGHTWEIGHT SAFTY GRID, ORANGE COLOR, BX226516, CUT OR FOLD AT POSTS NOTE:

HORTICULTURAL Associates

Consultants in Horticulture and Arboriculture

TREE PRESERVATION AND MITIGATION REPORT

Lot 227 Brazil Street Sonoma, CA

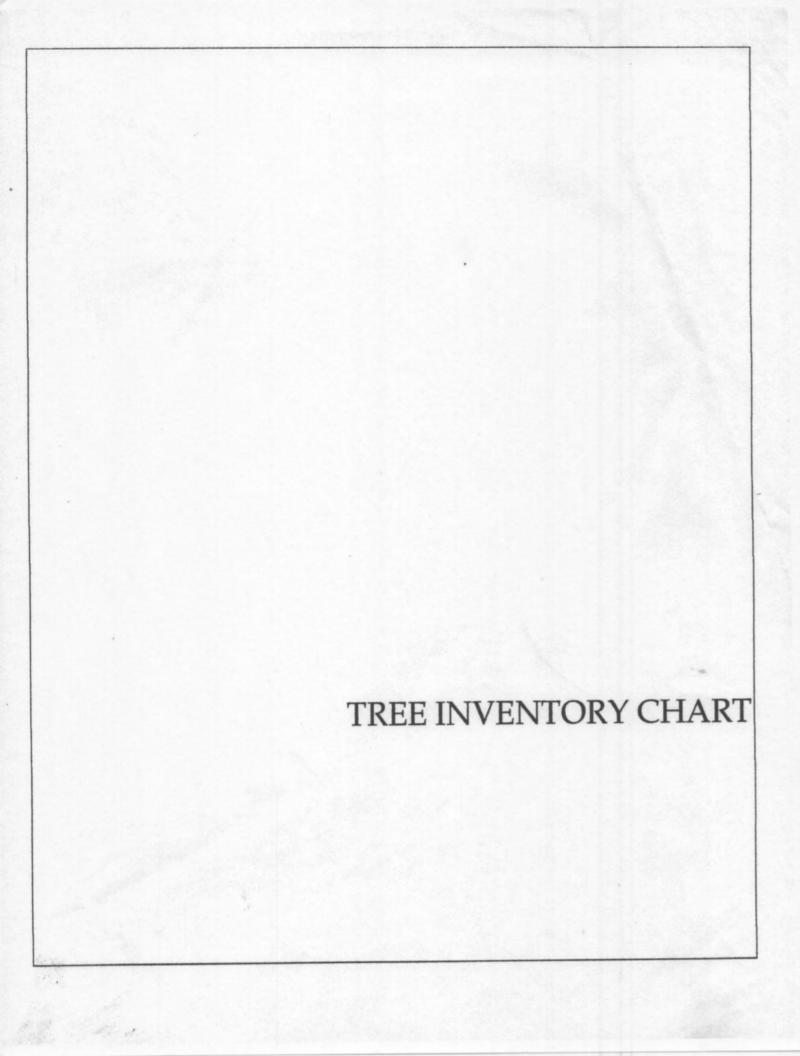
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TREE INVENTORY Lot 227 Sonoma, CA

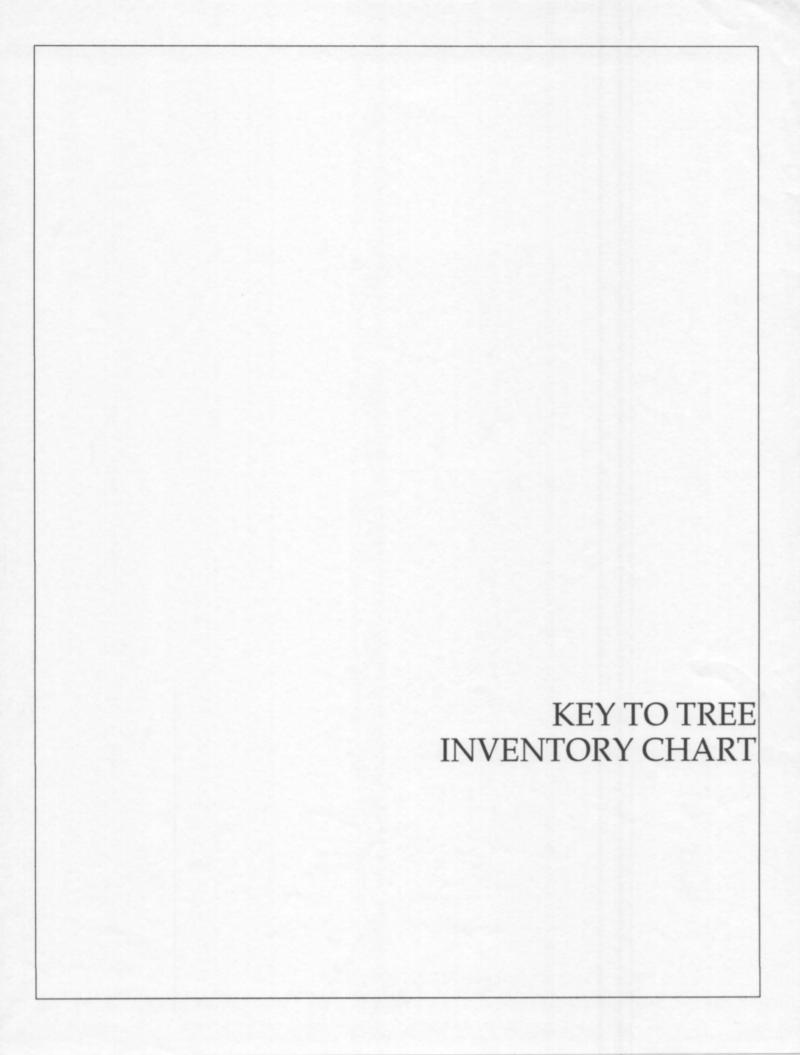
Tree #	Species	Common Name	Trunk (dbh ± inches)	Multiple Trunk Conversion to TPZ (feet)	Height (± feet)	Radius (± feet)	Health 1-5	Structure 1-4	Tag?	Expected Impact	Recommendations
74	Umbellularia californica	California Bay	7	7	15	10	4	3	Yes	3	2
75	Umbellularia californica	California Bay	5+5	7	15	10	4	3	Yes	3	2
76	Umbellularia californica	California Bay	7	7	15	10	4	3	Yes	3	2
78	Quercus agrifolia	Coast Live Oak	8+10	13	14	12	3	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
79	Quercus agrifolia	Coast Live Oak	6+8	10	16	12	3	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
80	Quercus agrifolia	Coast Live Oak	18+18+12	28	21	15	3	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
81	Quercus agrifolia	Coast Live Oak	10	10	20	14	3	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
82	Quercus agrifolia	Coast Live Oak	4+4+6+6	10	18	12	3	3	Yes	3	2
83	Quercus agrifolia	Coast Live Oak	10+12+13	20	21	15	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
84	Quercus agrifolia	Coast Live Oak	12	12	25	18	4	3	Yes	3	2
85	Quercus agrifolia	Coast Live Oak	14+15	21	30	18	4	3	Yes	3	2
86	Quercus agrifolia	Coast Live Oak	24	24	40	28	4	3	Yes	3	2
87	Quercus agrifolia	Coast Live Oak	12+12+6	18	20	20	3	3	Yes	3	2
145	Quercus agrifolia	Coast Live Oak	6+8+9	13	20	14	3	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
146	Quercus agrifolia	Coast Live Oak	6+10	12	25	15	3	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
147	Quercus agrifolia	Coast Live Oak	12+10+6+6+6+5+9	21	25	21	3	2.5	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
148	Quercus agrifolia	Coast Live Oak	12+12+6+6+5+12	21	25	22	3	2.5	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
149	Quercus agrifolia	Coast Live Oak	8+8+6+6+5+7	17	20	20	3	2.5	Yes	1	1, 3, 4, 5, 6, 7, 8, 9

TREE INVENTORY Lot 227 Sonoma, CA

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150	Quercus agrifolia	Coast Live Oak	12+12+14+14+10	28	21	20	3	2.5	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
151	Quercus agrifolia	Coast Live Oak	5+16	17	20	15	3	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
152	Olea Europaea	Olive	8+4+4	10	20	10	4	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
153	Quercus agrifolia	Coast Live Oak	6+6	8	15	10	4	4	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
154	Quercus agrifolia	Coast Live Oak	4	4	15	8	4	4	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
155	Quercus agrifolia	Coast Live Oak	12+12	17	18	25	3	3	Yes	3	1, 3, 4, 5, 6, 7, 8, 9
156	Quercus agrifolia	Coast Live Oak	5	5	6	14	2	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
157	Quercus agrifolia	Coast Live Oak	5+5+7+8+10+12	20	40	21	3	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
158	Quercus agrifolia	Coast Live Oak	12+5+10+15	22	40	20	3	3	Yes	3	2
159	Quercus agrifolia	Coast Live Oak	6	6	20	15	3	3	Yes	3	2
160	Quercus agrifolia	Coast Live Oak	5+4+3	7	20	14	3	3	Yes	3	2
161	Quercus agrifolia	Coast Live Oak	6+6	8	12	18	3	3	Yes	3	2
162	Quercus agrifolia	Coast Live Oak	6+5+12+12	19	35	18	3	3	Yes	3	2
163	Aesculus californica	California Buckeye	5	5	10	12	4	3	Yes	3	2
164	Quercus agrifolia	Coast Live Oak	5+4+10+11	17	20	14	3	3	Yes	3	2
165	Quercus agrifolia	Coast Live Oak	8	8	24	12	3	3	Yes	3	2
166	Quercus agrifolia	Coast Live Oak	5+7+9	17	10	10	3	3	Yes	3	2
167	Quercus agrifolia	Coast Live Oak	6	6	10	12	3	3	Yes	3	2

TREE INVENTORY Lot 227 Sonoma, CA

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168	Quercus agrifolia	Coast Live Oak	9	9	6	10	3	3	Yes	3	2



KEY TO TREE INVENTORY CHART

Lot 227 Sonoma, California

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- (4) Good structure minor structural problems may be present which do not require corrective action.
- (3) Moderate structure normal, typical structural issues which can be corrected with pruning.
- (2) Marginal structure serious structural problems are present, which may or may not be correctable with pruning, cabling, bracing, etc.
- (1) Poor structure hazardous structural condition that cannot be effectively corrected with pruning or other measures, may require removal depending on location and the presence of targets.

Development Impacts

Considering the proximity of construction activities, type of activities, tree species, and tree condition the following ratings are used to estimate the amount of impact on tree health and stability. Most trees will tolerate a (1) rating, many trees could tolerate a (2) rating with careful consideration and mitigation, but trees with a (3) rating are poor candidates for preservation due to their very close proximity to construction or because they are located within the footprint of construction and cannot be preserved.

- (3) Significant impact on long-term tree integrity can be expected as a result of proposed development.
- (2) Moderate impact on long-term tree integrity can be expected as a result of proposed development.
- Minor impact on long-term tree integrity can be expected as a result of proposed development.
- (0) No impact is expected

Recommendations

Recommendations are provided for removal or preservation. For those being preserved, protection measures and mitigation procedures to offset impacts and improve tree health are provided.

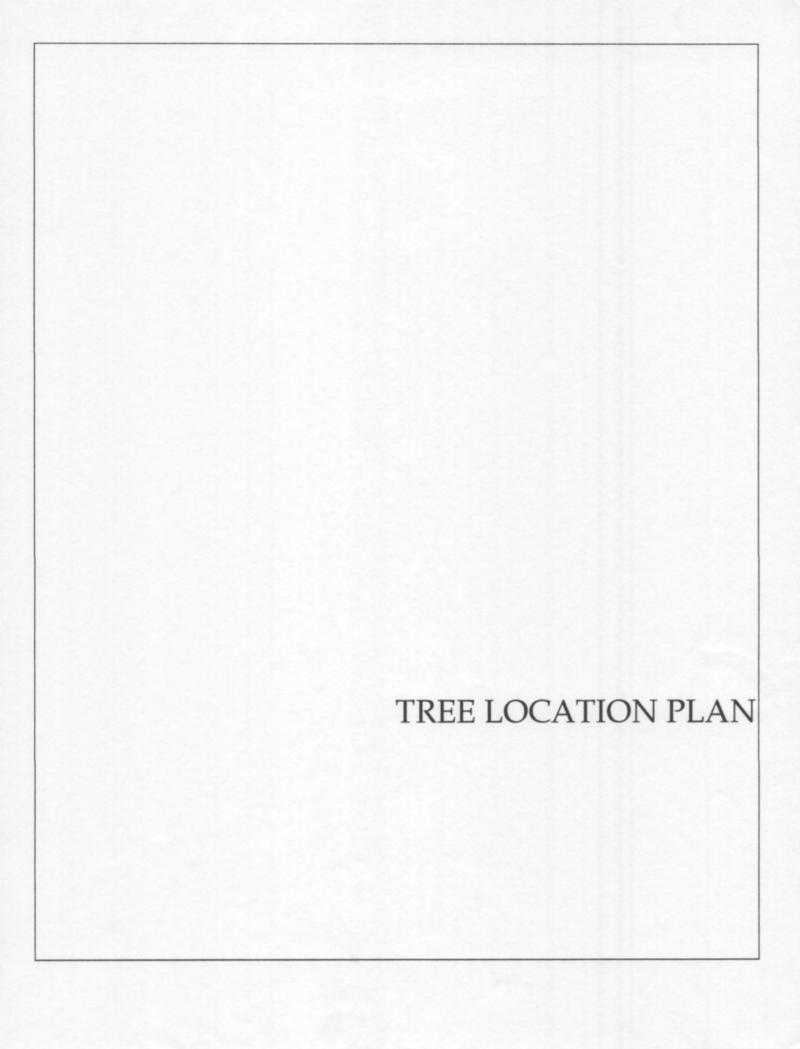
- (1) Preservation appears to be possible.
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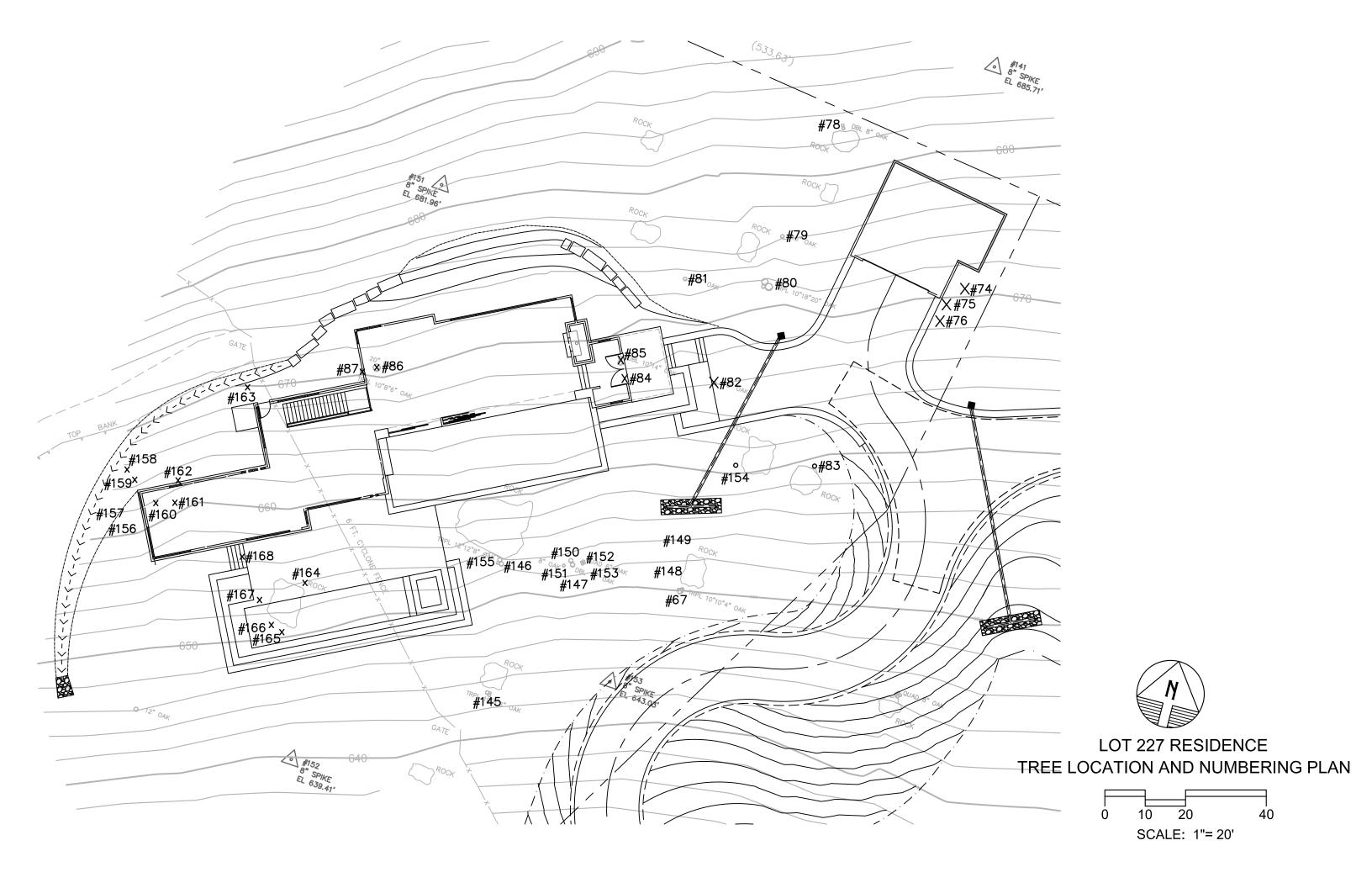
(3) Install temporary protective fencing prior to beginning any grading or construction at the site. Tree protection fencing shall be located at the edge of the Tree Protection Zone (TPZ), which is designated as one foot from the trunk for each one-inch of trunk diameter as documented in the attached Tree Inventory. As an example, a trunk diameter of 12 inches requires a protective fence 12 feet from the trunk.

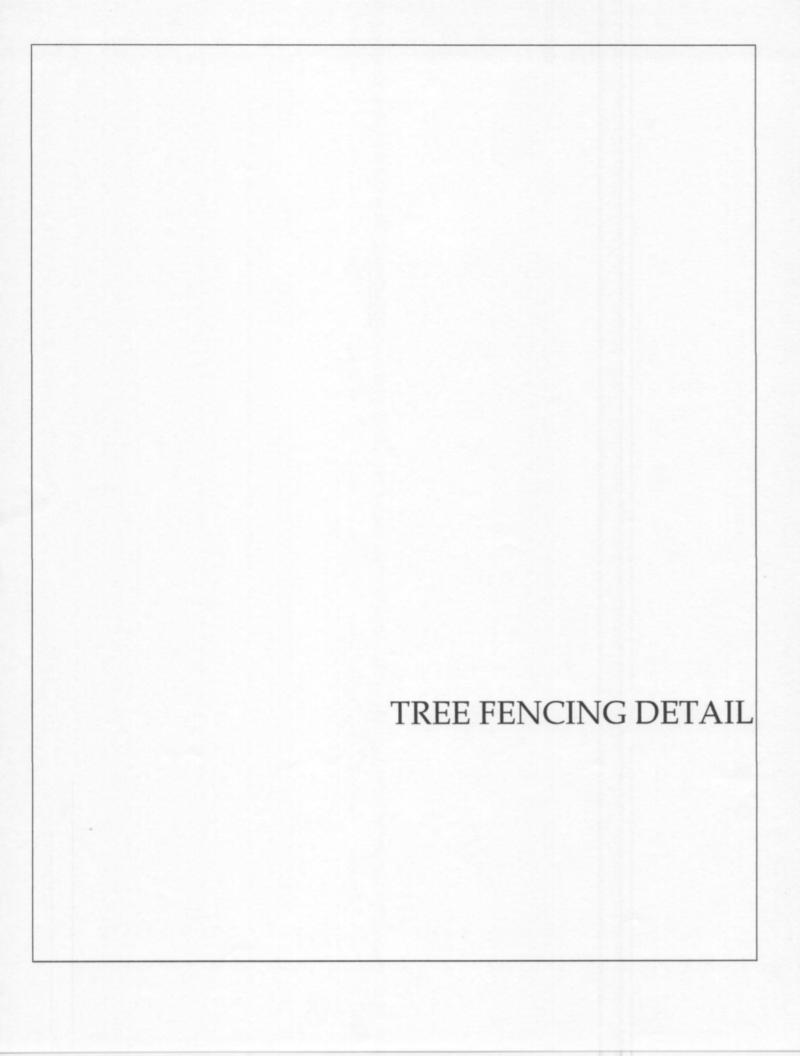
Fencing must be retained in the designated location for the duration of all construction activity in the area. Fences may not be modified for any reason without the written approval of the project arborist.

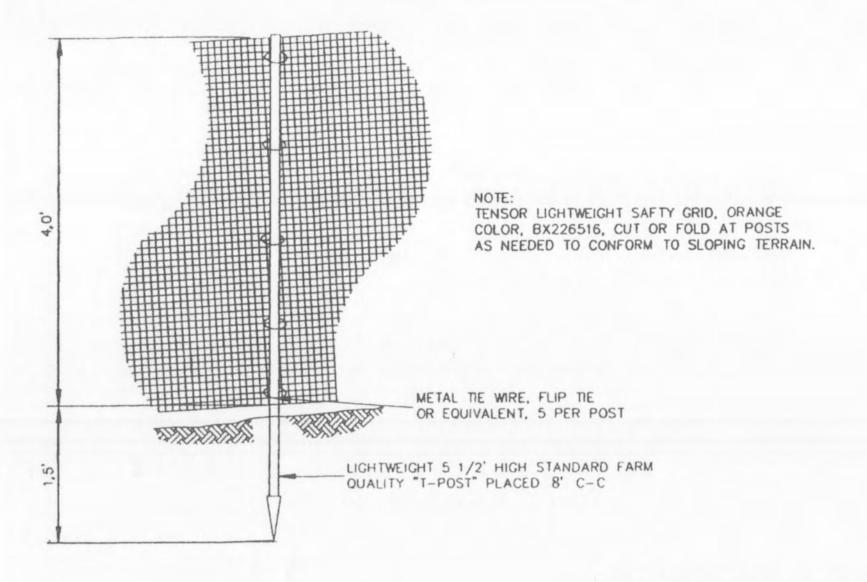
Tree protection fencing must conform to the Tree Fencing Detail included in this report, or an approved equivalent.

- (4) Maintain existing grade within the fenced portion of the dripline. Route drainage swales and all underground work outside the dripline.
- (5) Place a 4" layer of chipped bark mulch over the soil surface within the Tree Protection Zone prior to installing temporary fencing. Maintain this layer of mulch throughout construction.
- (6) Prune to clean, raise, or provide necessary clearance, per International Society of Arboriculture Pruning Standards. Pruning to occur by, or under the supervision of, an Arborist certified by the International Society of Arboriculture.
- (7) Any approved grading that occurs within the designated Tree Protection Zone (TPZ) must be completed under the direction of the project arborist. All roots greater than one inch in diameter shall be cleanly pruned prior to cut grading activity using a sharp pruning saw, cut-off saw, or other approved tool that provides a clean cut. Cut roots must be protected from desiccation if they are exposed to air for more than 24 hours by covering the root end or cut root area with a wet fabric material. Burlap or used carpeting works well for this purpose. No sealant is required on cut roots.
- (8) Trees that receive impacts within their designated Tree Protection Zones (TPZ) may require post construction mitigation measures to assist in their recovery. Mitigation measures will be determined by the project arborist on a tree-by-tree basis depending on the extent of impact. Measures could include, but are not limited to, additional mulching and periodic irrigation.
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HORTICULTURAL Associates

Consultants in Horticulture and Arboriculture

TREE PRESERVATION AND MITIGATION REPORT

Lot 228 Brazil Street Sonoma, CA

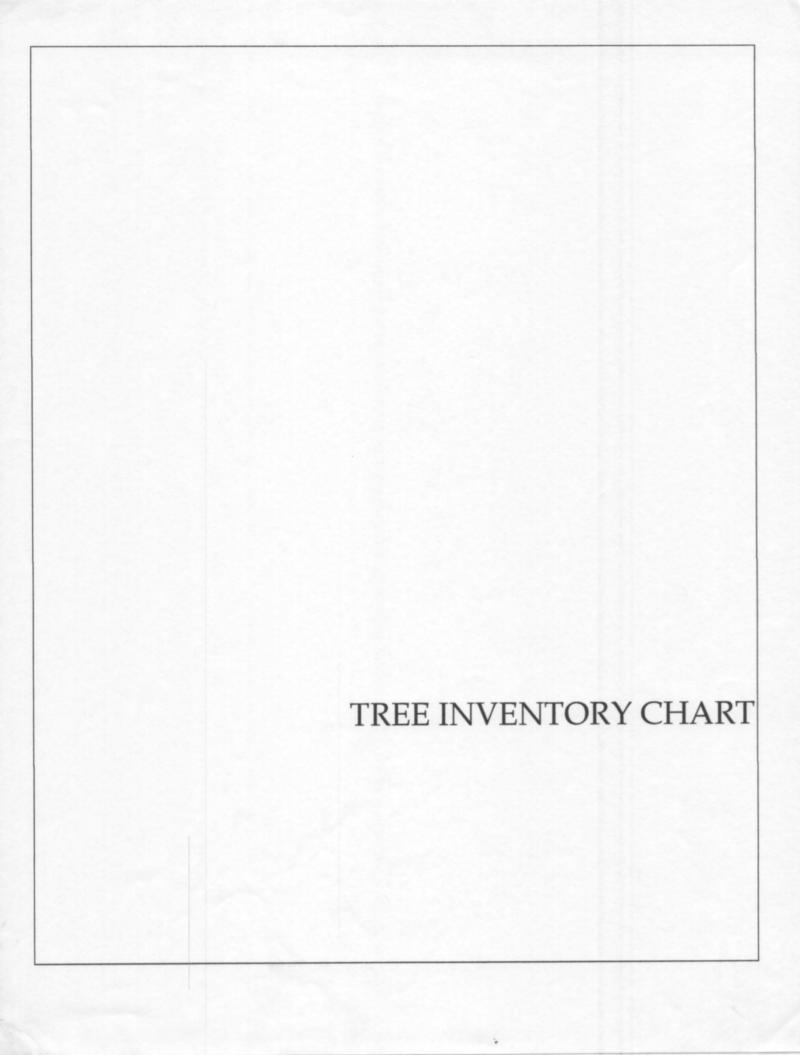
Prepared for:

Caymus Builders 300 Derek Place Roseville, CA 95661

Prepared by:

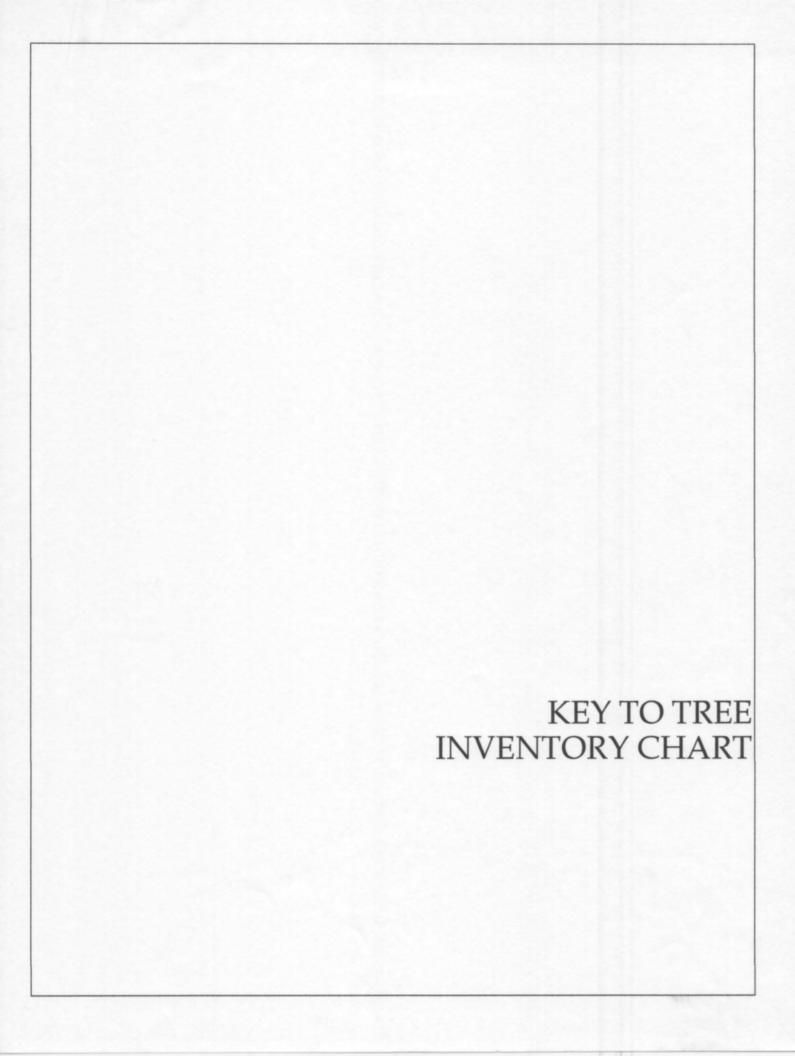
John C. Meserve Consulting Arborist and Horticulturist American Society of Consulting Arborists ISA Certified Arborist, WE #0478A ISA Tree Risk Assessment Qualified

June 7, 2017



SINGLE LOT TREE INVENTORY Lot 228 Sonoma, CA

Tree #	Species	Common Name	Trunk (DBH Inches)	Multiple Trunk Conversion to TPZ (feet)	Height (± feet)	Radius (± feet)	Health 1-5	Structure 1-4	Tag?	Expected Impact	Recommendations
68	Quercus douglasii	Blue Oak	8+8+4	12	18	14	3	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
69	Quercus agrifolia	Coast Live Oak	18+15+14	28	21	16	4	3	Yes	3	2
70	Quercus agrifolia	Coast Live Oak	24	24	16	22	4	2	Yes	3	1, 3, 4, 5, 6, 7, 8, 9
71	Umbellularia californica	California Bay	4+4+4	7	15	12	4	3	Yes	3	1, 3, 4, 5, 6, 7, 8, 9
72	Quercus agrifolia	Coast Live Oak	22	22	12	24	4	3	Yes	1.5	1, 3, 4, 5, 6, 7, 8, 9
73	Quercus agrifolia	Coast Live Oak	18+18	25	25	24	4	3	Yes	1.5	1, 3, 4, 5, 6, 7, 8, 9
88	Quercus douglasii	Blue Oak	3x12+14+14+15	32	30	20	3	3	Yes	3	2



KEY TO TREE INVENTORY CHART

Lot 228 Sonoma, California

Tree Number

Each tree has been identified in the field with an aluminum tag and reference number. Tags are attached to the trunk at approximately eye level and the *Tree Location Plan* illustrates the location of each numbered tree.

Species

Each tree has been identified by genus, species and common name. Many species have more than one common name.

Trunk

The diameter of each trunk has been estimated at 4.5 feet above adjacent grade. Trunk diameter is a good indicator of age, and is commonly used to determine mitigation replacement requirements.

Height

Height is estimated in feet, using visual assessment.

Radius

Radius is estimated in feet, using visual assessment. Since many canopies are asymmetrical, it is not uncommon for a radius estimate to be an average of the canopy size, or different that what is actually present. Radius is generally used as an area of root zone to be protected from development activity

Health

The following descriptions are used to rate the health of a tree. Trees with a rating of 4 or 5 are very good candidates for preservation and will tolerate more construction impacts than trees in poorer condition. Trees with a rating of 3 may or may not be good candidates for preservation, depending on the species and expected construction impacts. Trees with a rating of 1 or 2 are generally poor candidates for preservation.

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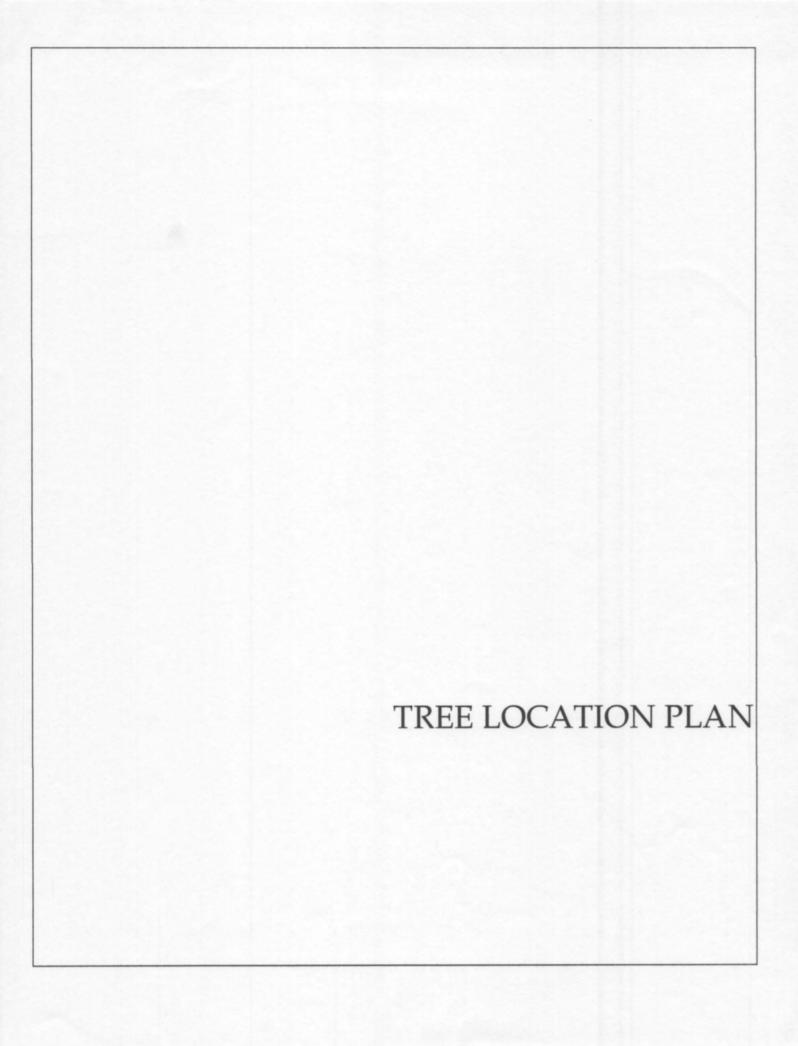
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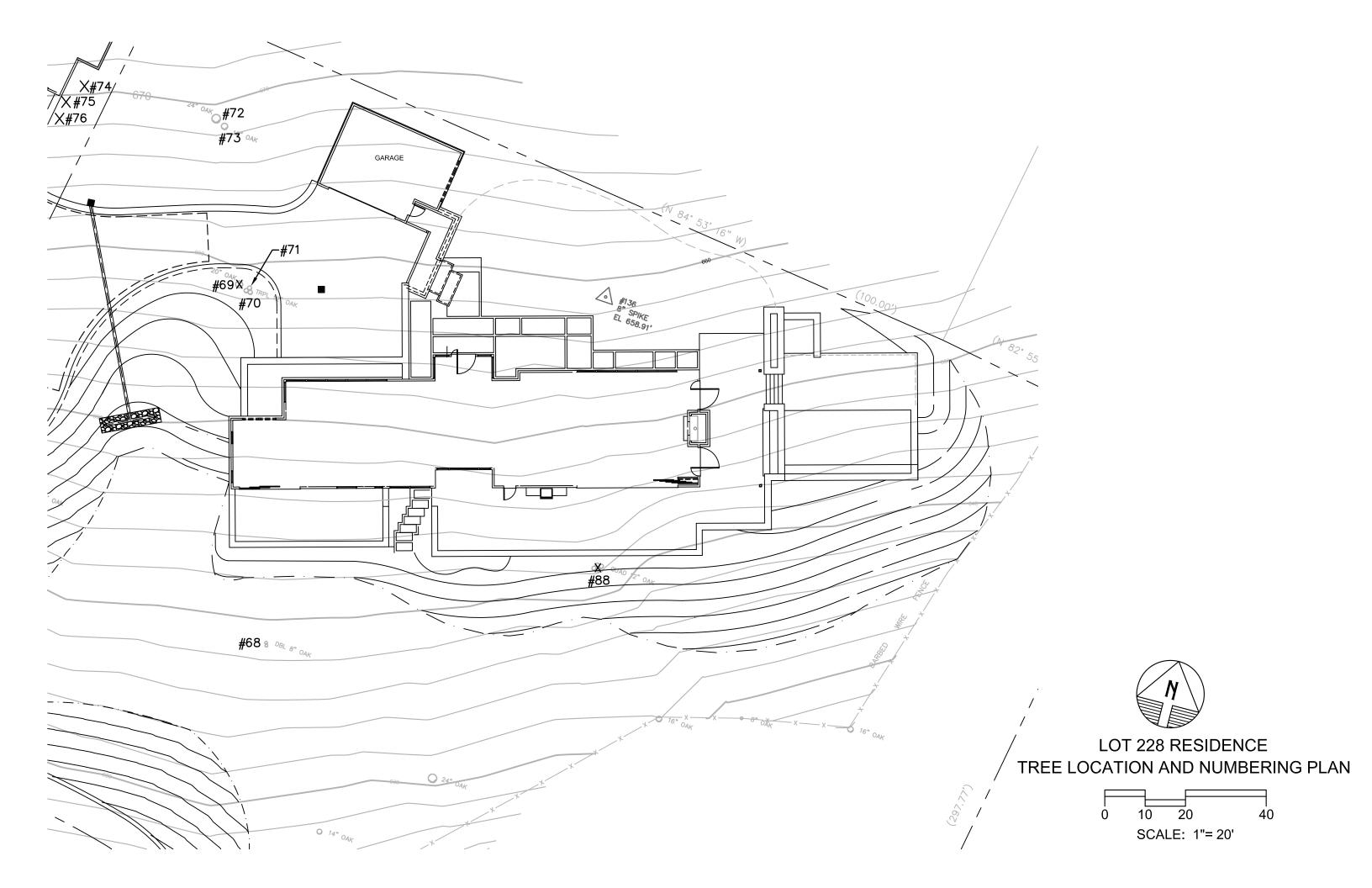
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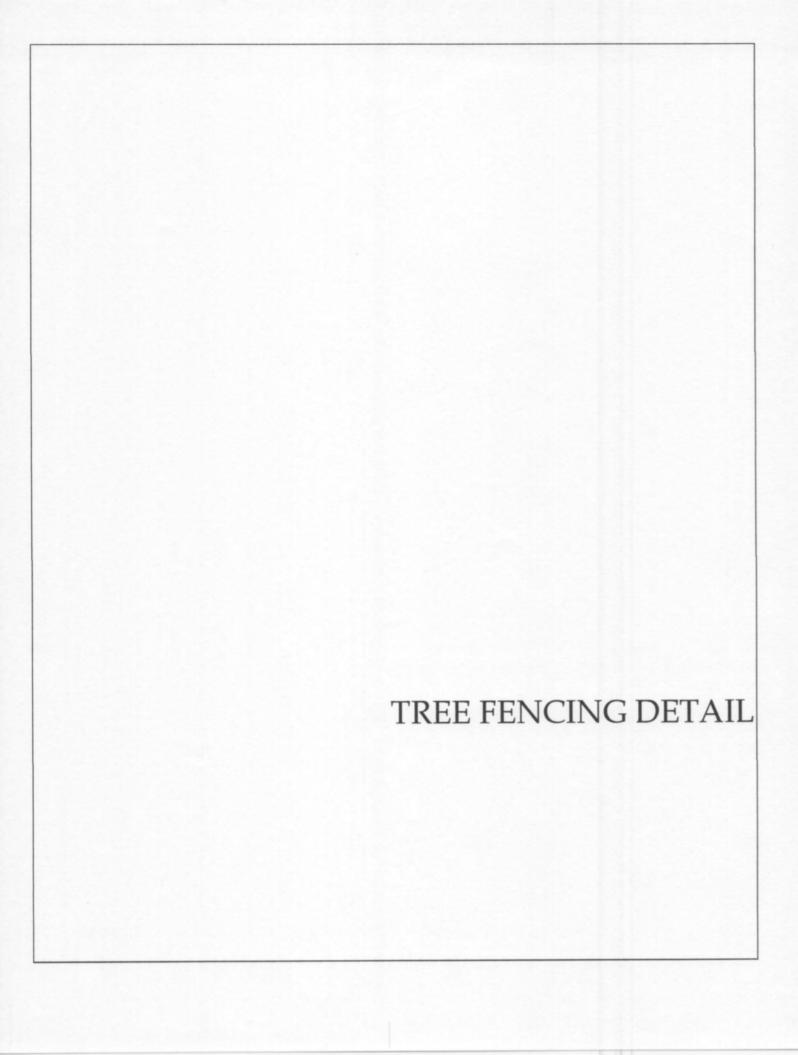
Fencing must be retained in the designated location for the duration of all construction activity in the area. Fences may not be modified for any reason without the written approval of the project arborist.

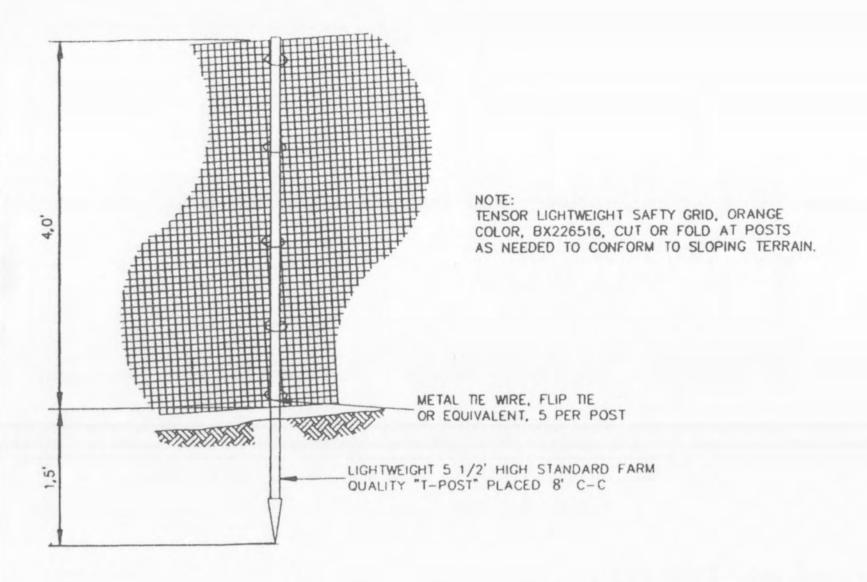
Tree protection fencing must conform to the Tree Fencing Detail included in this report, or an approved equivalent.

- (4) Maintain existing grade within the fenced portion of the dripline. Route drainage swales and all underground work outside the dripline.
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HORTICULTURAL Associates

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TREE PRESERVATION AND MITIGATION REPORT

Access Driveway Brazil Street Sonoma, CA

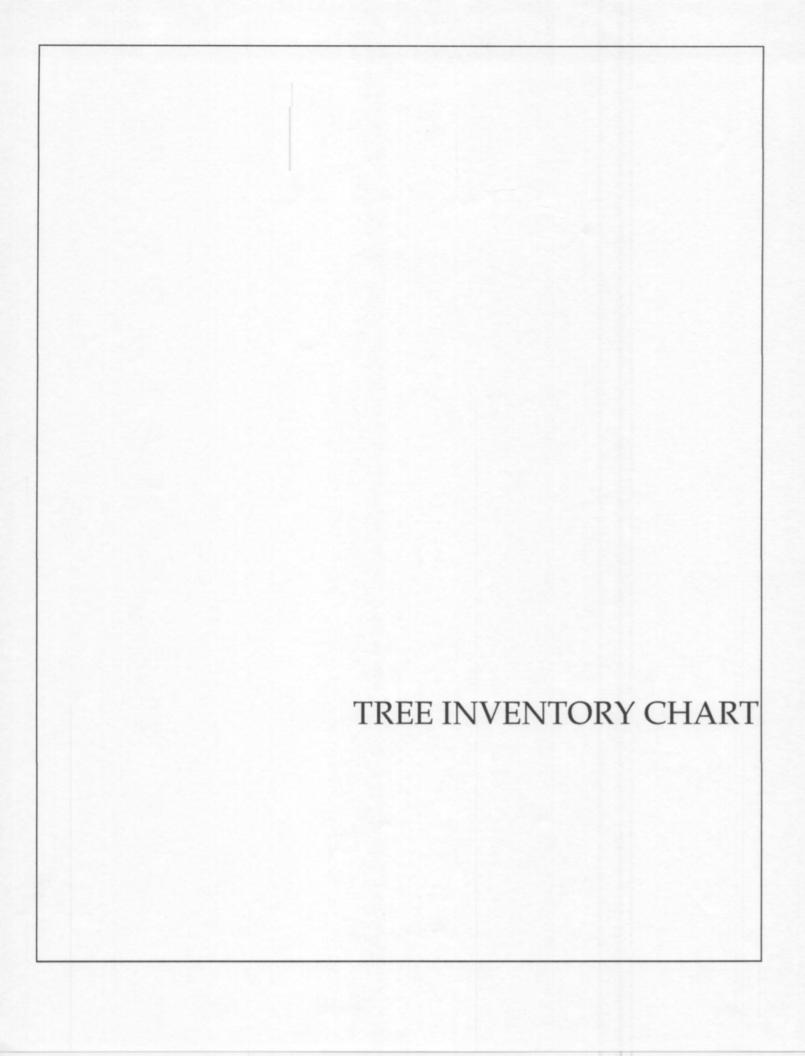
Prepared for:

Caymus Builders 300 Derek Place Roseville, CA 95661

Prepared by:

John C. Meserve Consulting Arborist and Horticulturist American Society of Consulting Arborists ISA Certified Arborist, WE #0478A ISA Tree Risk Assessment Qualified

June 7, 2017



TREE INVENTORY Access Driveway Sonoma, CA

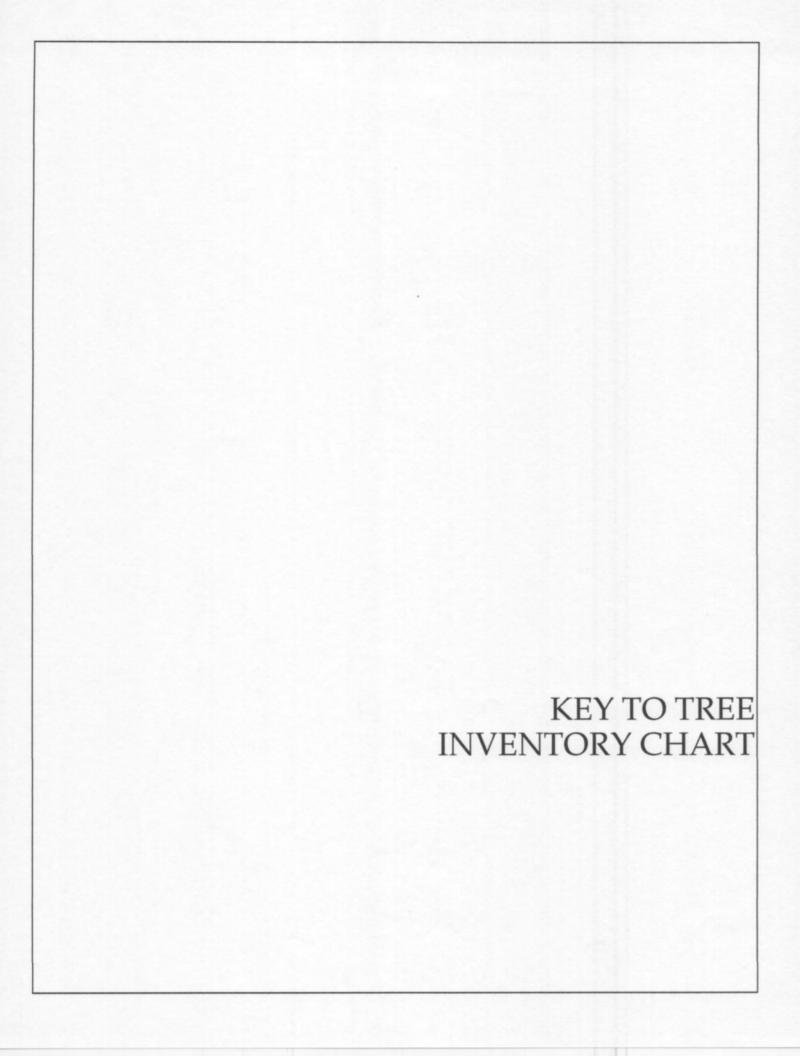
Tree #	Species	Common Name	Trunk (dbh ± inches)	Multiple Trunk Conversion to TPZ (feet)	Height (± feet)	Radius (± feet)	Health 1-5	Structure 1-4	Tag?	Expected Impact	Recommendations
66	Quercus agrifolia	Coast Live Oak	5+5+7+10+12	19	15	18	3	2	Yes	3	2
67	Quercus agrifolia	Coast Live Oak	3x4+3x10+5	22	18	18	3	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
89	Olea europaea	Olive	7+7	10	15	12	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
92	Quercus douglasii	Blue Oak	15	15	30	15	4	3	Yes	3	1, 3, 4, 5, 6, 7, 8, 9
93	Olea europaea	Olive	5+10	11	30	14	3	3	Yes	3	2
95	Quercus agrifolia	Coast Live Oak	3x12+2x10+4	25	22	16	3	3	Yes	3	1, 3, 4, 5, 6, 7, 8, 9
96	Quercus agrifolia	Coast Live Oak	15+5	16	25	16	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
97	Quercus douglasii	Blue Oak	6+5	8	20	14	3	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
98	Quercus agrifolia	Coast Live Oak	3x6+7	13	21	14	3	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
99	Quercus agrifolia	Coast Live Oak	3x8+2x12+10	24	18	21	3	2	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
100	Quercus agrifolia	Coast Live Oak	7+7+12+13	20	25	18	3	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
101	Quercus agrifolia	Coast Live Oak	10+10+12	19	25	20	3	3	Yes	3	2
102	Olea europaea	Olive	4x4	8	18	10	3	3	Yes	3	2
103	Quercus agrifolia	Coast Live Oak	12	12	18	18	4	3	Yes	3	2
104	Quercus agrifolia	Coast Live Oak	11	11	15	12	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
105	Quercus agrifolia	Coast Live Oak	10x4	13	30	18	3	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
106	Quercus agrifolia	Coast Live Oak	6	6	14	19	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
107	Quercus agrifolia	Coast Live Oak	25	25	25	20	3	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9

TREE INVENTORY Access Driveway Sonoma, CA

Tree #	Species	Common Name	Trunk (dbh ± inches)	Multiple Trunk Conversion to TPZ (feet)	Height (± feet)	Radius (± feet)	Health 1-5	Structure 1-4	Tag?	Expected Impact	Recommendations
108	Quercus agrifolia	Coast Live Oak	5+8+10	14	18	18	2	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
109	Quercus agrifolia	Coast Live Oak	12+12+6+18	25	45	22	4	3	Yes	3	2
110	Quercus agrifolia	Coast Live Oak	10+10+8+8+6	19	35	18	4	3	Yes	3	2
111	Quercus agrifolia	Coast Live Oak	10+10+12+12	22	45	24	4	3	Yes	3	2
112	Quercus agrifolia	Coast Live Oak	14+14+12	23	40	21	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
113	Olea europaea	Olive	6+4+2+2	8	16	14	4	3	Yes	3	2
114	Quercus agrifolia	Coast Live Oak	10+14	17	35	18	4	3	No	1	1, 3, 4, 5, 6, 7, 8, 9
115	Quercus agrifolia	Coast Live Oak	12	12	35	18	4	3	No	1	1, 3, 4, 5, 6, 7, 8, 9
116	Quercus agrifolia	Coast Live Oak	12	12	35	18	4	3	No	1	1, 3, 4, 5, 6, 7, 8, 9
117	Quercus agrifolia	Coast Live Oak	8	8	35	18	4	3	No	1	1, 3, 4, 5, 6, 7, 8, 9
118	Quercus agrifolia	Coast Live Oak	14	14	35	20	4	3	No	1	1, 3, 4, 5, 6, 7, 8, 9
119	Quercus agrifolia	Coast Live Oak	13	13	35	20	4	3	No	1	1, 3, 4, 5, 6, 7, 8, 9
120	Quercus agrifolia	Coast Live Oak	16	16	40	20	4	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
121	Quercus agrifolia	Coast Live Oak	12+9	15	40	20	4	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
122	Quercus agrifolia	Coast Live Oak	12	12	25	21	4	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
123	Quercus agrifolia	Coast Live Oak	10	10	40	18	4	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9
124	Quercus agrifolia	Coast Live Oak	8	8	35	14	4	3	Yes	3	2
125	Quercus agrifolia	Coast Live Oak	8+8+4	12	30	15	3	3	Yes	3	2

TREE INVENTORY Access Driveway Sonoma, CA

Tree #	Species	Common Name	Trunk (dbh ± inches)	Multiple Trunk Conversion to TPZ (feet)	Height (± feet)	Radius (± feet)	Health 1-5	Structure 1-4	Tag?	Expected Impact	Recommendations
126	Quercus agrifolia	Coast Live Oak	3x12+2x15+4+14	33	45	30	2	2	Yes	3	1, 3, 4, 5, 6, 7, 8, 9
127	Quercus agrifolia	Coast Live Oak	18	18	40	20	4	3	Yes	3	2
128	Quercus agrifolia	Coast Live Oak	3x18+3x12	40	40	30	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
175	Quercus agrifolia	Coast Live Oak	4x12+3x15	35	45	30	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
176	Quercus agrifolia	Coast Live Oak	8+4	9	22	12	4	3	Yes	3	1, 3, 4, 5, 6, 7, 8, 9
177	Quercus agrifolia	Coast Live Oak	13	13	40	25	4	3	Yes	2	1, 3, 4, 5, 6, 7, 8, 9
178	Quercus agrifolia	Coast Live Oak	5+12+13	18	40	25	4	3	Yes	3	2
179	Quercus agrifolia	Coast Live Oak	8	8	30	16	4	4	Yes	3	1, 3, 4, 5, 6, 7, 8, 9
180	Quercus agrifolia	Coast Live Oak	6+8	10	25	15	3	3	Yes	3	1, 3, 4, 5, 6, 7, 8, 9
181	Quercus agrifolia	Coast Live Oak	12+15+20	28	45	25	4	3	Yes	3	2
182	Olea europaea	Olive	6+5+4+3+3	10	18	12	4	3	Yes	3	2
183	Quercus agrifolia	Coast Live Oak	6+10+10+12+14	23	45	28	4	3	Yes	1	1, 3, 4, 5, 6, 7, 8, 9



KEY TO TREE INVENTORY CHART

Access Driveway Sonoma, California

Tree Number

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Radius is estimated in feet, using visual assessment. Since many canopies are asymmetrical, it is not uncommon for a radius estimate to be an average of the canopy size, or different that what is actually present. Radius is generally used as an area of root zone to be protected from development activity

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