

HORTICULTURAL *Associates*

Consultants in Horticulture and Arboriculture

TREE PRESERVATION AND MITIGATION REPORT

Round Barn Village
Santa Rosa, CA

Prepared For:

City Ventures
444 Spear Street, Suite 200
San Francisco, CA 94105

Prepared by:

John C. Meserve
Consulting Arborist and Horticulturist
International Society of Arboriculture
ISA Certified Arborist, WE #0478A

City of Santa Rosa

March 28, 2018

APR 09 2018

Planning & Economic
Development Department

March 28, 2018

Charity Wagner
City Ventures
444 Spear Street, Suite 200
San Francisco, CA 94105

Re: Completed *Tree Preservation and Mitigation Report*, Round Barn Village project site, Santa Rosa, California

Charity,

Attached you will find our completed *Tree Preservation and Mitigation Report* for the above noted site in Santa Rosa. A total of 265 trees were evaluated in the area of the project footprint, and this includes all trees that are present over 4 inches in trunk diameter per the Santa Rosa Tree Ordinance. Many other trees are found at the site in areas that will not be developed and these have not been included in this study.

Each tree is identified in the field with a numbered aluminum tag placed on the trunk at approximately eye level.

All trees in this report was evaluated and documented for species, size, health, and structural condition. The *Tree Inventory Chart* also includes information about expected impacts of the proposed development plan and recommendations for action based on the plan reviewed. The *Tree Location Plan* shows the location and numbering sequence of all evaluated trees. A *Tree Protection Fence* detail is included, as well as *Tree Protection Guidelines*.

The topographic plans that were provided for our use identified the locations of most trees, and others were added and located by eye if they were greater than 4 inches in diameter.

This report is intended to be a basic inventory of trees present at this site, which includes a general review of tree health and structural condition. No in-depth evaluation has occurred on any tree, and assessment has included only external visual examination without probing, drilling, coring, root collar examination, root excavation, or dissecting any tree part. Failures, deficiencies, and problems may occur in these trees in the future, and this inventory in no way guarantees or provides a warranty for their condition.

EXISTING SITE CONDITION SUMMARY

The project site consists of large open fields and hills, and the foundation remnants of a former winery. An abandoned home site is also present where numerous large and

established ornamental trees were observed. The entire site burned in October of 2018 and many trees were damaged. A wide range of fire damage was observed, and most native species will eventually regenerate over time. Many of the ornamentals however, may not recover.

EXISTING TREE SUMMARY

Native tree species found on the site include Coast Live Oak, California Bay, Madrone, Oregon Oak, Black Oak, Douglas Fir, and Coast Redwood.

Non-native species include Canary Island Date Palm, Blue Gum, Monkey Puzzle Tree, Tree, Black Locust, Hawthorn, Windmill Palm, Deodar Cedar, Mexican Fan Palm, Black Acacia, Cypress species, Eucalyptus species, Linden Tree, Camphor, Green Wattle, Olive, and Plum.

SPECIES DISCUSSION

The Eucalyptus found at this site are considered to be an exotic invasive species which negatively impact native stands of trees and native understory vegetation. They produce prolific volumes of seed which disperse to surrounding areas and are spread in local drainages and waterways. Eucalyptus are also considered to be a pyrophytic species that are highly flammable. Removal of all Eucalyptus from the site will improve the ecosystem of the entire Fountaingrove area and beyond, and is strongly recommended. While technically a protected species in Santa Rosa, requiring mitigation in the form of replacement trees, I would consider asking for a mitigation waiver from the City.


CONSTRUCTION IMPACT SUMMARY

Of the 265 trees in this specific inventory it appears that all trees included will require removal.

This does not include the many hundreds of other trees present at the site that are outside the project footprint.

Please feel free to contact me if you have questions regarding this report, or if further discussion would be helpful.

Regards,


John C. Meserve
Consulting Arborist and Horticulturist
International Society of Arboriculture
ISA Certified Arborist, WE #0478A



TREE INVENTORY CHART

TREE INVENTORY

Round Barn Village

Santa Rosa, CA

March 28, 2018

Tree #	Species	Common Name	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Expected Impact	Recommendations
1	<i>Quercus agrifolia</i>	Coast Live Oak	21.5+26.5	35	28	3	2	3	2
2	<i>Quercus agrifolia</i>	Coast Live Oak	15.5	35	22	3	3	3	2
3	<i>Phoenix canariensis</i>	Canary Island Date Palm	22	40	16	3	3	3	2
4	<i>Quercus garryana</i>	Oregon White Oak	22	45	30	3	3	3	2
5	<i>Quercus kelloggii</i>	Black Oak	10+12	30	18	2	2	3	2
6	<i>Quercus garryana</i>	Oregon White Oak	24	45	28	3	3	3	2
7	<i>Quercus kelloggii</i>	Black Oak	23.5	40	30	3	2	3	2
8	<i>Quercus agrifolia</i>	Coast Live Oak	16	40	26	2	2	3	2
9	<i>Quercus agrifolia</i>	Coast Live Oak	5.5+2.5	16	10	2	2	3	2
10	<i>Arbutus menziesii</i>	Madrone	5.5	18	8	1	1	3	3
11	<i>Pseudotsuga menziesii</i>	Douglas-fir	5	17	10	1	1	3	3
12	<i>Quercus agrifolia</i>	Coast Live Oak	6	16	9	1	1	3	3
13	<i>Pseudotsuga menziesii</i>	Douglas-fir	5.5	25	11	1	1	3	3
14	<i>Sequoia sempervirens</i>	Coast Redwood	10+10.5+42+10	100	22	3	3	3	2
15	<i>Crataegus cordata</i>	Hawthorn	15+14.5	30	24	1	1	3	3
16	<i>Quercus agrifolia</i>	Coast Live Oak	12.5	20	14	2	3	3	2

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Tree #	Species	Common Name	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Expected Impact	Recommendations
17	<i>Trachycarpus fortunei</i>	Windmill Palm	8	12	2	1	1	3	3
18	<i>Trachycarpus fortunei</i>	Windmill Palm	6	12	1	1	1	3	3
19	<i>Trachycarpus fortunei</i>	Windmill Palm	6.5	9	1	1	1	3	3
20	<i>Cedrus deodara</i>	Deodar Cedar	18.5	40	28	1	1	3	3
21	<i>Sequoia sempervirens</i>	Coast Redwood	34	70	24	2	2	3	3
22	<i>Quercus agrifolia</i>	Coast Live Oak	8.5	20	12	2	3	3	2
23	<i>Quercus agrifolia</i>	Coast Live Oak	6	14	12	2	3	3	2
24	<i>Quercus agrifolia</i>	Coast Live Oak	6+6+5+8+4	16	14	2	3	3	2
25	<i>Quercus agrifolia</i>	Coast Live Oak	5	14	8	2	3	3	2
26	<i>Quercus agrifolia</i>	Coast Live Oak	14+12+8.5	32	20	2	3	3	2
27	<i>Quercus agrifolia</i>	Coast Live Oak	7+11.5+10+17.5	25	18	2	2	3	2
28	<i>Quercus agrifolia</i>	Coast Live Oak	4+3	14	10	4	3	3	2
29	<i>Quercus agrifolia</i>	Coast Live Oak	7	18	14	4	3	3	2
30	<i>Quercus garryana</i>	Oregon White Oak	17.5	45	20	3	3	3	2
31	<i>Umbellularia californica</i>	California Bay	8+8+4.5+6+3++ 6.5+7.5+3.5+7	30	18	3	3	3	2
32	<i>Washingtonia robusta</i>	Mexican Fan Palm	7	14	4	3	3	3	2

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33	<i>Washingtonia robusta</i>	Mexican Fan Palm	7.5	14	1	1	1	3	3
34	<i>Quercus agrifolia</i>	Coast Live Oak	5	14	12	3	3	3	2
35	<i>Washingtonia robusta</i>	Mexican Fan Palm	8	20	1	1	1	3	3
36	<i>Umbellularia californica</i>	California Bay	9.5+8+11.5+4.5+10+6.5	35	20	3	3	3	3
37	<i>Acacia melanoxylon</i>	Black Acacia	14	35	30	3	3	3	2
38	<i>Acacia melanoxylon</i>	Black Acacia	13+14+14+14.5	35	30	3	3	3	2
39	<i>Araucaria araucana</i>	Monkey Puzzle Tree	50.5	75	24	4	3-2	3	2
40	<i>Acacia melanoxylon</i>	Black Acacia	5.5	35	12	2	3	3	2
41	<i>Acacia melanoxylon</i>	Black Acacia	6+3	35	10	2	2	3	2
42	<i>Acacia melanoxylon</i>	Black Acacia	5.5	35	10	2	2	3	2
43	<i>Acacia melanoxylon</i>	Black Acacia	4.5	35	10	2	2	3	2
44	<i>Acacia melanoxylon</i>	Black Acacia	4.5	20	4	2	2	3	2
45	<i>Umbellularia californica</i>	California Bay	15+16.5+29	45	30	3	2	3	2
46	<i>Quercus agrifolia</i>	Coast Live Oak	18	30	26	4	2	3	2
47	<i>Quercus agrifolia</i>	Coast Live Oak	6.5	16	14	3	3	3	2
48	<i>Acacia melanoxylon</i>	Black Acacia	5+5	40	12	2	2	3	2

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49	<i>Acacia melanoxylon</i>	Black Acacia	6+6.5+2.5+2+3	40	14	2	2	3	2
50	<i>Acacia melanoxylon</i>	Black Acacia	5.5+5.5+3	40	12	2	2	3	2
51	<i>Acacia melanoxylon</i>	Black Acacia	7.5+7	40	14	3	3	3	2
52	<i>Acacia melanoxylon</i>	Black Acacia	5.5+6.5+4	35	12	2	2	3	2
53	<i>Acacia melanoxylon</i>	Black Acacia	6+3+5+3.5+5+5.5+4	35	14	2	2	3	2
54	<i>Acacia melanoxylon</i>	Black Acacia	4.5+3.5	35	10	2	2	3	2
55	<i>Acacia melanoxylon</i>	Black Acacia	4.5+3	35	10	2	2	3	2
56	<i>Acacia melanoxylon</i>	Black Acacia	5+4+4+4.5	30	10	2	2	3	2
57	<i>Acacia melanoxylon</i>	Black Acacia	5	28	8	2	2	3	2
58	<i>Quercus agrifolia</i>	Coast Live Oak	6+4.5	16	12	2	2	3	2
59	<i>Quercus agrifolia</i>	Coast Live Oak	4.5+3+3	16	12	2	2	3	2
60	<i>Acacia melanoxylon</i>	Black Acacia	7	35	14	2	2	3	2
61	<i>Acacia melanoxylon</i>	Black Acacia	6.5+5.5+4+3+4+4	40	16	3	3	3	2
62	<i>Acacia melanoxylon</i>	Black Acacia	7.5	35	14	3	3	3	2
63	<i>Acacia melanoxylon</i>	Black Acacia	3+3+7+6.5+4	40	14	3	3	3	2
64	<i>Acacia melanoxylon</i>	Black Acacia	5	22	10	3	1	3	3

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65	<i>Acacia melanoxylon</i>	Black Acacia	5.5+2.5+3	30	10	1	1	3	3
66	<i>Acacia melanoxylon</i>	Black Acacia	4+2.5	30	10	1	1	3	3
67	<i>Acacia melanoxylon</i>	Black Acacia	2+4.5+4.5+3+3+2.5	35	10	1	1	3	3
68	<i>Acacia melanoxylon</i>	Black Acacia	5.5	35	8	1	1	3	3
69	<i>Acacia melanoxylon</i>	Black Acacia	33	60	30	3	2	3	3
70	<i>Acacia melanoxylon</i>	Black Acacia	4.5	20	6	2	3	3	2
71	<i>Acacia melanoxylon</i>	Black Acacia	4+4+3.5	20	8	3	3	3	2
72	<i>Acacia melanoxylon</i>	Black Acacia	5.5+3.5	30	8	2	3	3	2
73	<i>Cedrus deodara</i>	Deodar Cedar	23	40	18	3	2	3	2
74	<i>Acacia melanoxylon</i>	Black Acacia	8.5	40	16	3	3	3	2
75	<i>Acacia melanoxylon</i>	Black Acacia	6.5+4+3+2+3+3+3+3+3+3	40	16	3	3	3	2
76	<i>Acacia melanoxylon</i>	Black Acacia	6.5+6.5+6.5	40	14	3	3	3	2
77	<i>Acacia melanoxylon</i>	Black Acacia	4.5+4.5	30	12	3	3	3	2
78	<i>Acacia melanoxylon</i>	Black Acacia	5	30	12	2	3	3	2
79	<i>Quercus agrifolia</i>	Coast Live Oak	13.5+18+16.5	35	28	3	3	3	2
80	<i>Eucalyptus species</i>	Gum	20	35	30	3	2	3	5

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81	<i>Eucalyptus species</i>	Gum	11.5+19	45	30	3	2	3	5
82	<i>Quercus agrifolia</i>	Coast Live Oak	4+3	16	14	3	3	3	2
83	<i>Eucalyptus species</i>	Gum	13.5+6+8.5	40	20	2	2	3	5
84	<i>Quercus agrifolia</i>	Coast Live Oak	6.5+6	16	14	1	1	3	3
85	<i>Quercus agrifolia</i>	Coast Live Oak	8.5	20	16	2	2	3	2
86	<i>Eucalyptus species</i>	Gum	10+4.5+12.5+14	45	26	2	2	3	5
87	<i>Eucalyptus species</i>	Gum	8.5+6.5+7+10.5+13	40	28	2	2	3	5
88	<i>Quercus agrifolia</i>	Coast Live Oak	5	12	5	1	1	3	3
89	<i>Quercus agrifolia</i>	Coast Live Oak	7.5+5	16	12	2	3	3	3
90	<i>Quercus agrifolia</i>	Coast Live Oak	27	35	24	3	3	3	2
91	<i>Quercus agrifolia</i>	Coast Live Oak	17.5+20+11.5	30	30	3	3-2	3	2
92	<i>Cupressus sp.</i>	Cypress	13.5	45	18	2	2	3	2
93	<i>Calocedrus decurrens</i>	Incense Cedar	25	60	20	2	1	3	3
94	<i>Phoenix canariensis</i>	Canary Island Date Palm	31	50	18	2	3	3	2
95	<i>Arbutus menziesii</i>	Madrone	20.5+4	20	16	1	2	3	2
96	<i>Tilia cordata</i>	Linden	16.5	30	16	2	3	3	2

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97	<i>Quercus agrifolia</i>	Coast Live Oak	9.5	18	14	2	2	3	2
98	<i>Quercus agrifolia</i>	Coast Live Oak	5+3	16	12	2	2	3	2
99	<i>Quercus agrifolia</i>	Coast Live Oak	9	20	14	2	3	3	2
100	<i>Photinia fraseri</i>	Photinia	11.5+7.5+16.5+6.5 +5	35	20	2	1	3	3
101	<i>Quercus agrifolia</i>	Coast Live Oak	5.5	22	14	2	2	3	2
101	<i>Quercus agrifolia</i>	Coast Live Oak	5.5	22	14	2	2	3	2
103	<i>Sequoia sempervirens</i>	Coast Redwood	15	40	14	2	2	3	2
104	<i>Quercus agrifolia</i>	Coast Live Oak	9.5	30	14	2	3	3	2
105	<i>Quercus agrifolia</i>	Coast Live Oak	9	20	16	3	3	3	2
106	<i>Sequoia sempervirens</i>	Coast Redwood	13.5	40	14	3	2	3	2
107	<i>Quercus agrifolia</i>	Coast Live Oak	7	20	14	2	3	3	2
108	<i>Sequoia sempervirens</i>	Coast Redwood	12.5	35	12	2	2	3	2
109	<i>Sequoia sempervirens</i>	Coast Redwood	13	38	10	2	2	3	2
110	<i>Quercus agrifolia</i>	Coast Live Oak	23.5	40	26	3	3	3	2
111	<i>Sequoia sempervirens</i>	Coast Redwood	13.5	40	14	2	2	3	2
112	<i>Quercus agrifolia</i>	Coast Live Oak	5.5+4	18	12	2	3	3	2

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Tree #	Species	Common Name	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Expected Impact	Recommendations
113	<i>Araucaria araucana</i>	Monkey Puzzle Tree	53.5	70	22	2	2	3	2
114	<i>Cedrus deodara</i>	Deodar Cedar	27	45	18	2	2	3	2
115	<i>Robinia pseudoacacia</i>	Black Locust	5.5+3	22	12	2	2	3	2
116	<i>Robinia pseudoacacia</i>	Black Locust	4.5	16	7	1	1	3	3
117	<i>Robinia pseudoacacia</i>	Black Locust	6.5	30	14	2	2	3	2
118	<i>Robinia pseudoacacia</i>	Black Locust	6.5	28	14	2	2	3	2
119	<i>Robinia pseudoacacia</i>	Black Locust	5+7+5+4.5+4.5+7.5+10	30	22	2	2	3	2
120	<i>Acacia melanoxylon</i>	Black Acacia	4.5+3.5	20	6	2	2	3	2
121	<i>Acacia melanoxylon</i>	Black Acacia	4.5+3+2+3.5	22	6	3	3	3	2
122	<i>Acacia melanoxylon</i>	Black Acacia	6	22	8	2	3	3	2
123	<i>Washingtonia robusta</i>	Mexican Fan Palm	16	60	14	3	3	3	2
124	<i>Cinnamomum camphora</i>	Camphor	18.5	25	14	2	2	3	2
125	<i>Sequoia sempervirens</i>	Redwood	23	60	16	3	3	3	2
126	<i>Sequoia sempervirens</i>	Redwood	22	60	16	3	3	3	2
127	<i>Quercus agrifolia</i>	Coast Live Oak	4.5+3.5	16	9	4	3	3	2
128	<i>Acacia dealbata</i>	Silver Wattle	5	28	6	2	3	3	2

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129	<i>Phoenix canariensis</i>	Canary Island Date Palm	29	35	18	3	3	3	2
130	<i>Sequoia sempervirens</i>	Coast Redwood	15	30	16	2	2	3	2
131	<i>Sequoia sempervirens</i>	Coast Redwood	20	45	18	3	3	3	2
132	<i>Quercus agrifolia</i>	Coast Live Oak	4.5	16	6	3	3	3	2
133	<i>Sequoia sempervirens</i>	Coast Redwood	19.5	45	14	3	3	3	2
134	<i>Sequoia sempervirens</i>	Coast Redwood	16.5	45	12	3	3	3	2
135	<i>Sequoia sempervirens</i>	Coast Redwood	17	40	16	2	2	3	2
136	<i>Sequoia sempervirens</i>	Coast Redwood	9	30	14	1	1	3	3
137	<i>Sequoia sempervirens</i>	Coast Redwood	27.5	65	20	3	3-2	3	2
138	<i>Sequoia sempervirens</i>	Coast Redwood	7.5	20	12	1	1	3	3
139	<i>Quercus agrifolia</i>	Coast Live Oak	7.5+7	20	16	3	3	3	2
140	<i>Quercus agrifolia</i>	Coast Live Oak	10+4+3	25	14	3	3	3	2
141	<i>Quercus agrifolia</i>	Coast Live Oak	13.5	25	18	2	3	3	2
142	<i>Quercus agrifolia</i>	Coast Live Oak	6	18	12	2	3	3	2
143	<i>Sequoia sempervirens</i>	Coast Live Oak	14.5+9+6.5	30	18	3	3	3	2
144	<i>Quercus agrifolia</i>	Coast Live Oak	10	32	14	2	2	3	2

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145	<i>Quercus kelloggii</i>	Black Oak	17.5+25+16	45	32	2	2	3	2
146	<i>Quercus garryana</i>	Oregon White Oak	17+11	40	24	2	3	3	2
147	<i>Quercus kelloggii</i>	Black Oak	10+10.5+6.5	18	22	3	3	3	2
148	<i>Quercus kelloggii</i>	Black Oak	16+12.5	45	22	3	3	3	2
149	<i>Quercus kelloggii</i>	Black Oak	13.5+12	35	20	3	3	3	2
150	<i>Quercus kelloggii</i>	Black Oak	17.5	45	28	3	3	3	2
151	<i>Quercus kelloggii</i>	Black Oak	19.5	40	22	3	3	3	2
152	<i>Quercus kelloggii</i>	Black Oak	19.5	38	24	4	3	3	2
153	<i>Quercus kelloggii</i>	Black Oak	19+10.5+15	32	22	3	2	3	2
154	<i>Olea europaea</i>	Olive	13	30	18	3	2	3	2
155	<i>Quercus lobata</i>	Valley Oak	17.5	20	18	2	2	3	2
156	<i>Quercus agrifolia</i>	Coast Live Oak	9.5	30	16	3	3	3	2
157	<i>Quercus kelloggii</i>	Black Oak	29	38	28	3	2	3	2
158	<i>Quercus lobata</i>	Valley Oak	18.5	32	22	3	3	3	2
159	<i>Olea europaea</i>	Olive	5+5+3+4+3	18	12	3	3	3	2
160	<i>Quercus lobata</i>	Valley Oak	37	45	34	3	2	3	2

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TREE INVENTORY

Round Barn Village

Santa Rosa, CA

March 28, 2018

Tree #	Species	Common Name	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Expected Impact	Recommendations
161	<i>Quercus kelloggii</i>	Black Oak	8.5	30	20	3	3	3	2
162	<i>Olea europaea</i>	Olive	9+6	20	18	3	2	3	2
163	<i>Olea europaea</i>	Olive	9.5+10+7	20	18	2	3	3	2
164	<i>Quercus garryana</i>	Oregon White Oak	11	25	18	2	2	3	2
165	<i>Olea europaea</i>	Olive	7+8+8+6	20	14	3	3	3	2
166	<i>Quercus agrifolia</i>	Coast Live Oak	30+34	40	28	3	2	3	2
167	<i>Quercus agrifolia</i>	Coast Live Oak	4+3+2+3	14	9	4	3	3	2
168	<i>Quercus agrifolia</i>	Coast Live Oak	8	16	8	4	3	3	2
169	<i>Quercus agrifolia</i>	Coast Live Oak	4	13	4	4	3	3	2
170	<i>Quercus agrifolia</i>	Coast Live Oak	4.5+4.5+5+5.5	16	10	3	3	3	2
171	<i>Quercus lobata</i>	Valley oak	5.5	18	12	3	3	3	2
172	<i>Quercus agrifolia</i>	Coast Live Oak	8	22	14	4	3	3	2
173	<i>Quercus lobata</i>	Valley oak	5	20	12	4	3	3	2
174	<i>Quercus agrifolia</i>	Coast Live Oak	6.5	16	12	4	3	3	2
175	<i>Quercus agrifolia</i>	Coast Live Oak	5.5+4+5+3+4+2+2	16	12	4	3	3	2
176	<i>Quercus agrifolia</i>	Coast Live Oak	8	20	10	2	3	3	2

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TREE INVENTORY

Round Barn Village

Santa Rosa, CA

March 28, 2018

Tree #	Species	Common Name	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Expected Impact	Recommendations
177	<i>Robinia pseudoacacia</i>	Black Locust	8	30	14	2	2	3	2
178	<i>Robinia pseudoacacia</i>	Black Locust	9	28	16	2	2	3	2
179	<i>Quercus agrifolia</i>	Coast Live Oak	15	30	18	3	3	3	2
180	<i>Quercus agrifolia</i>	Coast Live Oak	12.5	30	18	3	3	3	2
181	<i>Quercus agrifolia</i>	Coast Live Oak	8+9+8.5+7	25	14	3	3	3	2
182	<i>Quercus agrifolia</i>	Coast Live Oak	8.5	25	12	3	3	3	2
183	<i>Quercus agrifolia</i>	Coast Live Oak	4.5	18	8	3	3	3	2
184	<i>Quercus agrifolia</i>	Coast Live Oak	8	30	10	3	3	3	2
185	<i>Quercus agrifolia</i>	Coast Live Oak	5.5	12	10	3	3	3	2
186	<i>Quercus agrifolia</i>	Coast Live Oak	7+7	16	10	3	3	3	2
187	<i>Quercus agrifolia</i>	Coast Live Oak	3.5+3.5+3+2+2.5	12	8	1	1	3	3
188	<i>Quercus agrifolia</i>	Coast Live Oak	4	10	3	1	2	3	2
189	<i>Quercus agrifolia</i>	Coast Live Oak	6	14	7	3	3	3	2
190	<i>Crataegus cordata</i>	Hawthorn	6+8+7+7	25	14	3	2	3	2
191	<i>Quercus agrifolia</i>	Coast Live Oak	15.5+13	40	28	3	3	3	2
192	<i>Quercus agrifolia</i>	Coast Live Oak	6	16	10	4	3	3	2

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TREE INVENTORY

March 28, 2018

Round Barn Village
Santa Rosa, CA

Tree #	Species	Common Name	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Expected Impact	Recommendations
193	<i>Quercus kelloggii</i>	Black Oak	17	35	24	3	3	3	2
194	<i>Quercus agrifolia</i>	Coast Live Oak	9	22	12	4	3	3	2
195	<i>Quercus agrifolia</i>	Coast Live Oak	17	35	18	4	3	3	2
196	<i>Quercus agrifolia</i>	Coast Live Oak	6	15	10	4	3	3	2
197	<i>Prunus</i> sp.	Plum	Multiple small trunks	18	16	3	2	3	2
198	<i>Quercus lobata</i>	Valley Oak	15	40	22	4	3	3	2
199	<i>Quercus agrifolia</i>	Coast Live Oak	9.5+6.5+4.5	18	12	4	3	3	2
200	<i>Quercus agrifolia</i>	Coast Live Oak	9.5	18	14	4	3	3	2
201	<i>Quercus agrifolia</i>	Coast Live Oak	5.5+3.5+2+3+4	14	8	4	3	3	2
202	<i>Quercus agrifolia</i>	Coast Live Oak	6.5+10	25	16	4	3	3	2
203	<i>Quercus agrifolia</i>	Coast Live Oak	10.5	25	16	4	3	3	2
204	<i>Quercus lobata</i>	Valley Oak	33	40	22	4	2	3	2
205	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	23+14.5+12.5	60	34	3	2	3	5
206	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	20.5+5+14	50	40	3	2	3	5
207	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	13.5+9+10.5+5+13+11	45	28	3	2	3	5
208	<i>Quercus agrifolia</i>	Coast Live Oak	8.5+6+6+7	16	12	4	3	3	2

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Santa Rosa, CA

March 28, 2018

Tree #	Species	Common Name	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Expected Impact	Recommendations
209	<i>Quercus agrifolia</i>	Coast Live Oak	4+3.5+2+1.5+1	14	9	4	3	3	2
210	<i>Quercus agrifolia</i>	Coast Live Oak	5+6.5+4+2+2+3	16	14	4	3	3	5
211	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	29+5.5+3.5+9	40	30	3	2	3	5
212	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	27.5	50	28	3	2	3	5
213	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	20	45	20	3	2	3	5
214	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	5+2.5+3+2	30	14	2	2	3	5
215	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	5+8	20	12	2	2	3	5
216	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	12.5+24+4.5+6	45	30	3	2	3	5
217	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	7.5+4+4	30	14	2	2	3	5
218	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	5.5+4+3.5	28	14	3	2	3	5
219	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	7+3+6.5	30	16	3	2	3	5
220	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	9.5+9	35	21	3	2	3	5
221	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	8+9.5+7+7+8+4	32	22	3	2	3	5
222	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	7+15+4.5+5.5+9.5	45	22	3	2	3	5
223	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	7.5+3	35	20	3	2	3	5
224	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	7+6.5+13.5+13+10+6.5	45	30	3	2	3	5

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TREE INVENTORY

Round Barn Village

Santa Rosa, CA

March 28, 2018

Tree #	Species	Common Name	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Expected Impact	Recommendations
225	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	5.5	32	9	2	2	3	5
226	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	7+1+2.5	30	12	2	2	3	5
227	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	10.5+19.5+10+10+8+4	60	30	3	2	3	5
228	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	16+15.5+14+9.5	55	30	3	2	3	5
229	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	18+10.5+4+6	45	30	3	2	3	5
230	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	5	28	10	2	2	3	5
231	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	10+6.5+6.5+9+12+4	40	28	3	2	3	5
232	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	10	42	16	2	2	3	5
233	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	10+7.5+5+7+2+2	38	20	3	2	3	5
234	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	10+13.5+7.5	38	24	3	2	3	5
235	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	6.5+8	25	26	3	2	3	5
236	<i>Quercus agrifolia</i>	Coast Live Oak	4+3.5	16	10	4	3	3	2
237	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	3.5+6+4+10+5.5+1+4.5	38	14	4	2	3	5
238	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	9.5	35	16	4	2	3	5
239	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	8+9.5+6	38	16	4	2	3	5
240	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	9+6	38	16	4	2	3	5

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TREE INVENTORY

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Santa Rosa, CA

March 28, 2018

Tree #	Species	Common Name	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Expected Impact	Recommendations
241	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	13+6.5+8.5	35	16	4	2	3	5
242	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	5	35	12	4	2	3	5
243	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	10.5	30	16	3	2	3	5
244	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	4.5	16	12	3	2	3	5
245	<i>Eucalyptus camaldulensis</i>	Red Gum Eucalyptus	11.5	35	18	4	2	3	5
246	<i>Quercus lobata</i>	Valley Oak	14.5	25	18	3	3	3	2
247	<i>Quercus agrifolia</i>	Coast Live Oak	19+12	40	26	3	3	3	2
248	<i>Olea europaea</i>	Olive	7+10.5+4	20	14	2	3	3	2
249	<i>Quercus kelloggii</i>	Black Oak	21+21+21	40	34	3	2	3	2
250	<i>Quercus lobata</i>	Valley Oak	14	25	12	2	2	3	2
251	<i>Quercus kelloggii</i>	Black Oak	24	40	28	3	2	3	2
252	<i>Olea europaea</i>	Olive	17	20	16	2	3	3	2
253	<i>Quercus agrifolia</i>	Coast Live Oak	29	18	18	2	2	3	2
254	<i>Olea europaea</i>	Olive	11+10	20	18	2	2	3	2
255	<i>Quercus garryana</i>	Oregon White Oak	16	35	20	3	2	3	2
256	<i>Quercus agrifolia</i>	Coast Live Oak	18	35	22	3	3	3	2

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TREE INVENTORY

Round Barn Village

Santa Rosa, CA

March 28, 2018

Tree #	Species	Common Name	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Expected Impact	Recommendations
257	<i>Quercus kelloggii</i>	Black Oak	14	38	22	3	3	3	2
258	<i>Quercus kelloggii</i>	Black Oak	26	40	30	4	2	3	2
259	<i>Quercus lobata</i>	Valley Oak	5.5	18	14	4	4	3	2
260	<i>Arbutus menziessi</i>	Madrone	3.5+7	16	12	2	3	3	2
261	<i>Arbutus menziessi</i>	Madrone	4.5	14	6	2	3	3	2
262	<i>Quercus agrifolia</i>	Coast Live Oak	5.5	18	6	3	3	3	2
263	<i>Arbutus menziessi</i>	Madrone	6	14	8	1	1	3	3
264	<i>Quercus agrifolia</i>	Coast Live Oak	6+4+4	14	8	1	1	3	3
265	<i>Quercus agrifolia</i>	Coast Live oak	5+4.5	14	6	2	2	3	2

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KEY TO TREE
INVENTORY CHART

KEY TO TREE INVENTORY CHART

Round Barn Village
Santa Rosa, 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

Each trunk has been measured, to the nearest one half inch, to document its diameter at 4 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.

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 which 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) A significant impact on long term tree integrity can be expected as a result of proposed development.
- (2) A moderate impact on long term tree integrity can be expected as a result of proposed development.
- (1) A very minor or no impact on long term tree integrity can be expected as a result of proposed development.
- (0) No impact is expected

Recommendations

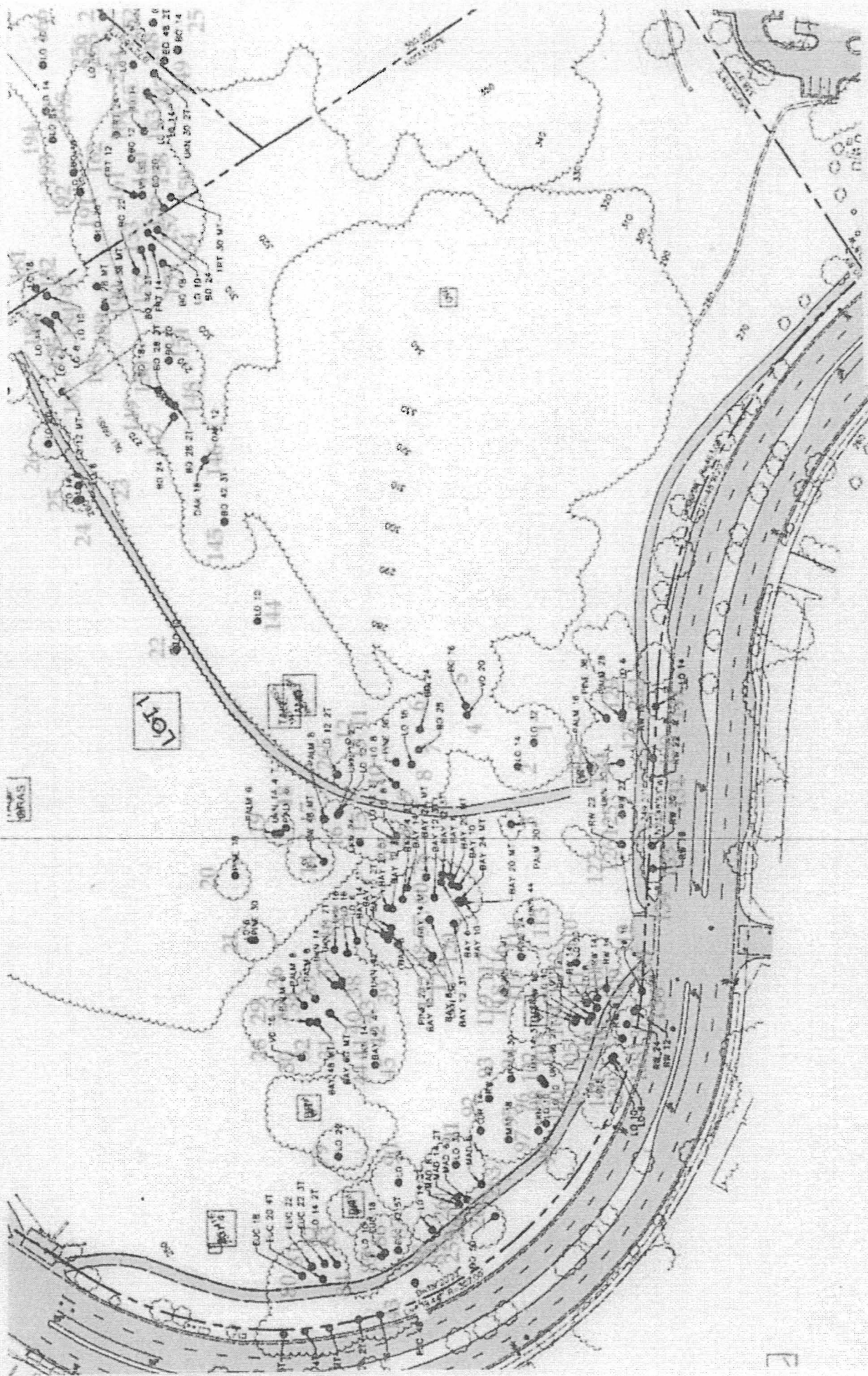
Recommendations are provided for removal or preservation. For those being preserved, protection measures and mitigation procedures to offset impacts and improve tree health are provided.

- (1) Preservation appears to be possible.
- (2) Removal is required due to significant development impacts.
- (3) Removal is recommended due to poor health or hazardous structure.

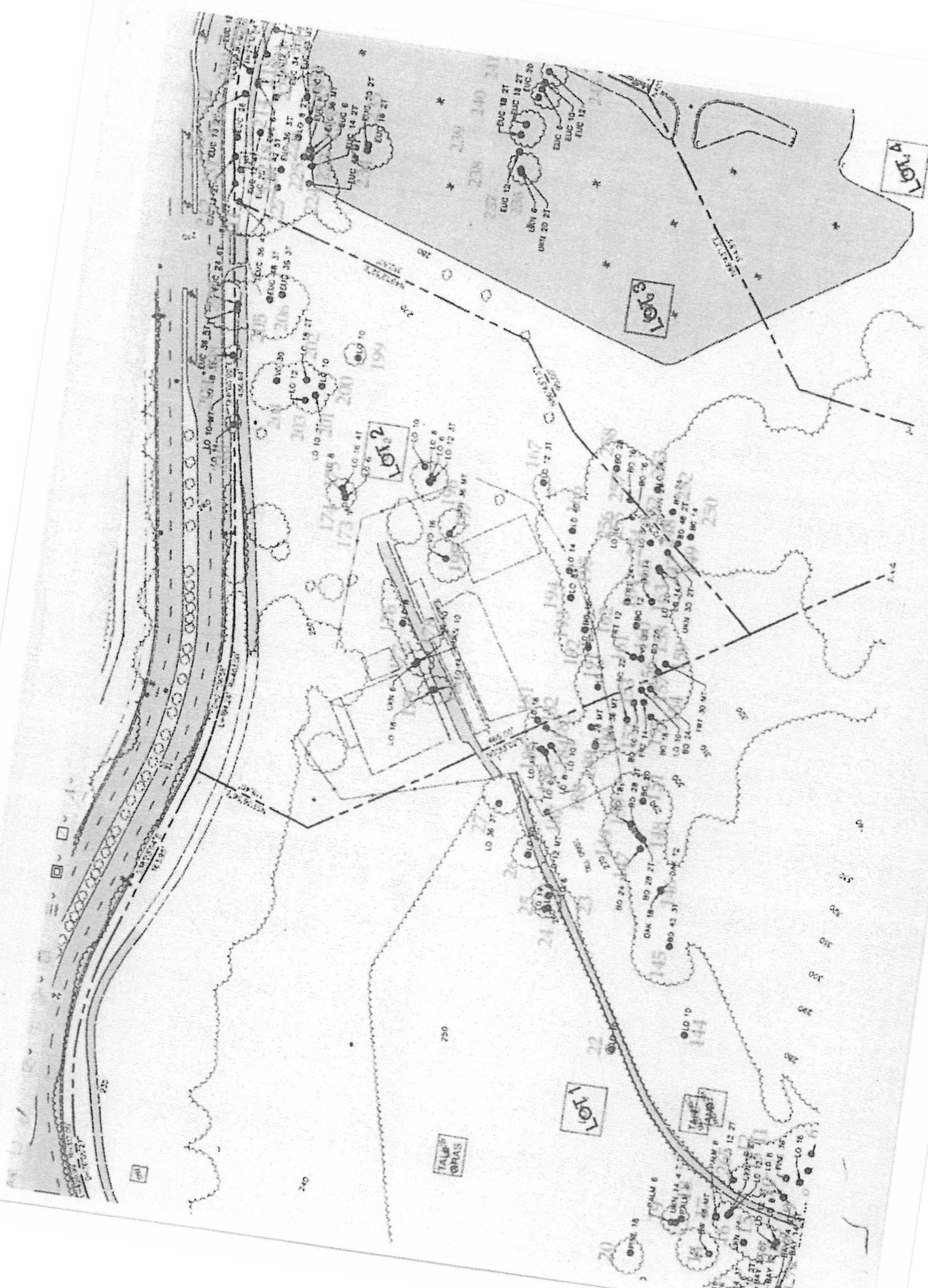
- (4) Removal is required due to significant development impacts and poor existing condition.
- (5) Removal is recommended due to poor species characteristics.
- (6) Install temporary protective fencing at the edge of the dripline, or edge of approved construction, prior to beginning grading or construction. Maintain fencing in place for duration of all construction activity in the area.
- (7) Maintain existing grade within the fenced portion of the dripline. Route drainage swales and all underground work outside the dripline.
- (8) Place a 4" layer of chipped bark mulch over the soil surface within the fenced dripline prior to installing temporary fencing. Maintain this layer of mulch throughout construction.
- (9) Prune to clean, raise, or provide necessary clearance. Prune to reduce branches that are over-loaded, over-extended, largely horizontal, arching, or have foliage concentrated near the branch ends, 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. Pruning Standards are attached to this report.

TREE LOCATION PLAN

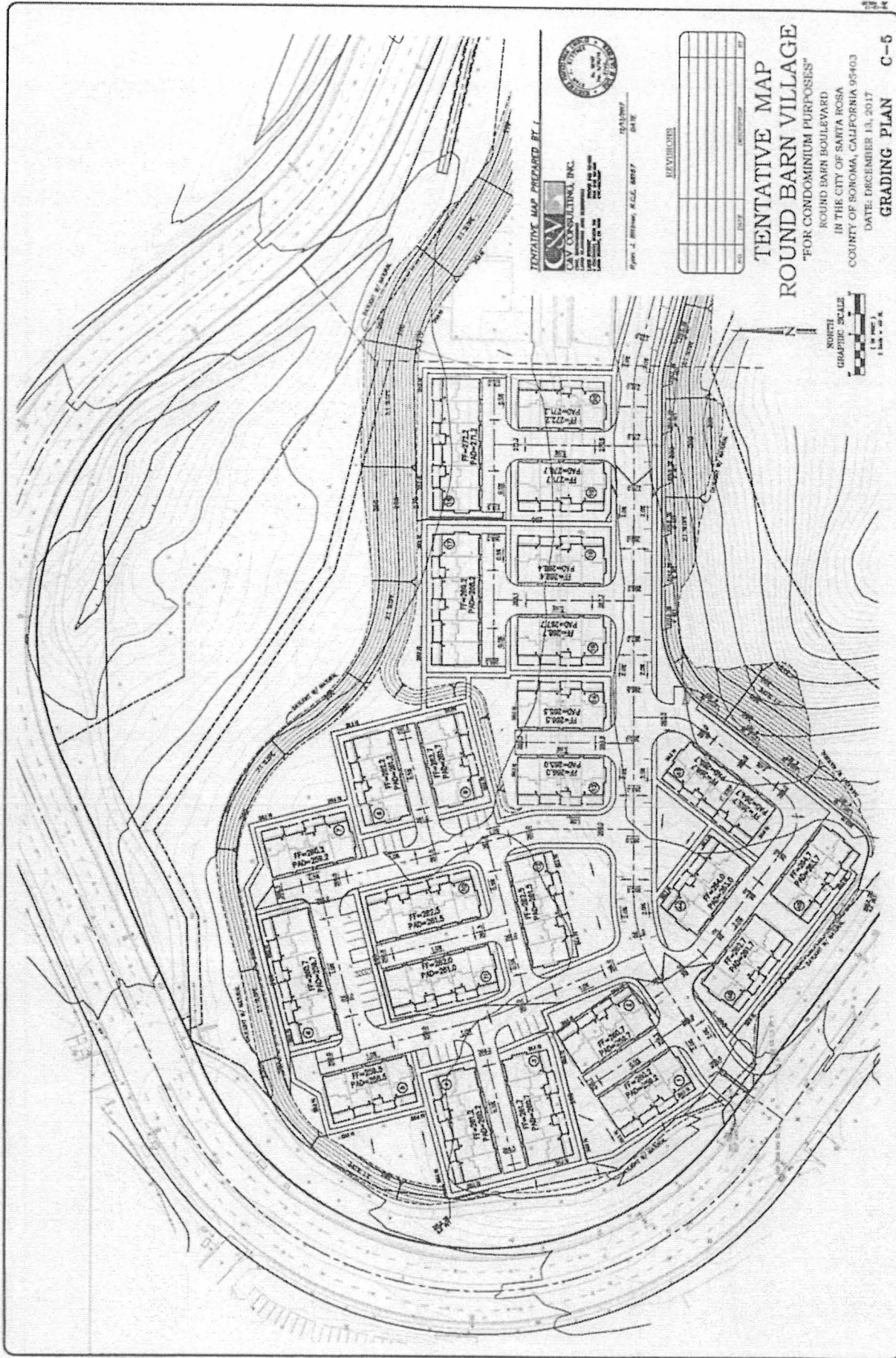


TREE LOCATION AND NUMBERING PLAN
Round Barn Village
Santa Rosa, CA



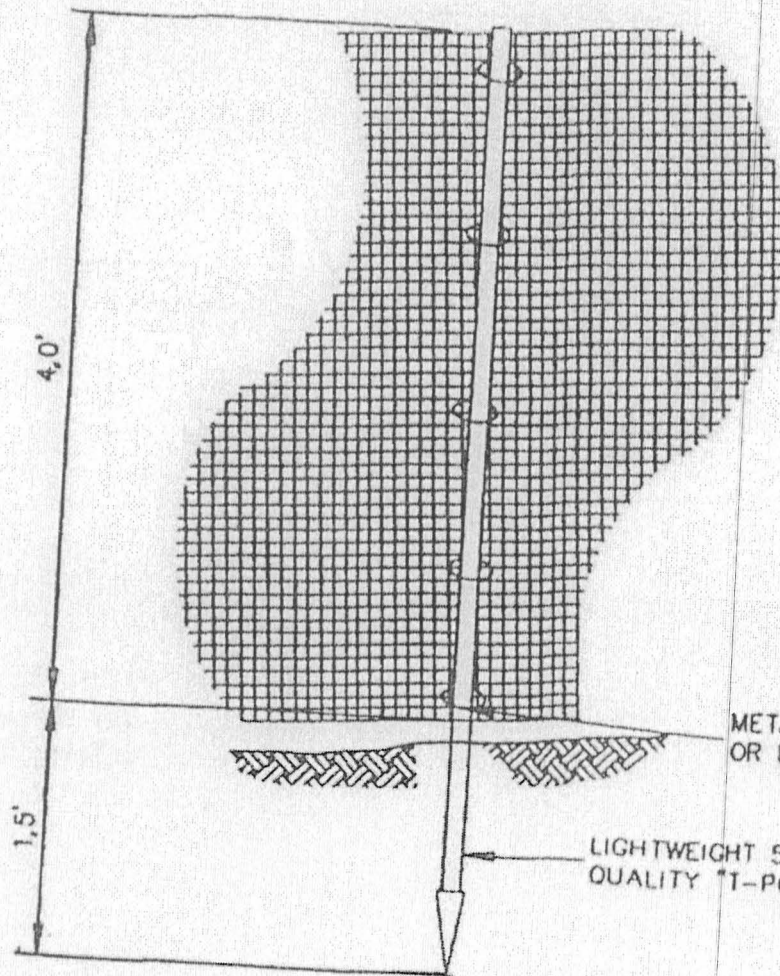
TREE LOCATION AND NUMBERING PLAN
Round Barn Village
Santa Rosa

TENTATIVE MAP



SITE PLAN
EXISTING CONDITIONS

TREE FENCING DETAIL



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

METAL TIE WIRE, FLIP TIE
OR EQUIVALENT, 5 PER POST

LIGHTWEIGHT 5 1/2' HIGH STANDARD FARM
QUALITY "T-POST" PLACED 8' C-C

TREE PROTECTION FENCING DETAIL

TREE PROTECTION GUIDELINES

TREE PROTECTION GUIDELINES

FOR CONSTRUCTION AROUND PRESERVED TREES

TREE PROTECTION ZONE

The Tree Protection Zone around each tree, or group of trees, must be protected at all times with tree protection fencing. No encroachment into the Tree Protection Zone is allowed at any time without approval from the project arborist, and unauthorized entry may be subject to civil action and penalties.

The protected area beneath the canopy of each tree will be designated by the project arborist as the Tree Protection Zone at a location determined to be adequate to ensure long term tree viability and health. The Tree Protection Zone may not be consistent with the canopy dripline in many locations.

TREE PROTECTION FENCING

Prior to initiating any construction activity on a construction project, including demolition, vegetation or approved tree removal, grubbing, or grading, temporary protective fencing shall be installed at each tree or group of trees. Fencing shall be located at the edge of the Tree Protection Zone as specifically designated by the project arborist.

Fencing shall be minimum 4' height at all locations, and shall form a continuous barrier without entry points around all individual trees, or groups of trees. Barrier type fencing such as *Tensar* plastic fencing is recommended, but any fencing system that adequately prevents entry will be considered for approval by the project arborist. The use of post and cable fencing is not acceptable.

Fencing shall be installed in a professional manner using standard quality farm 'T' posts that are placed no more than 8 feet on center. Fencing shall be attached to each post at 5 locations with plastic electrical ties. Fencing shall be stretched tightly between posts in all locations. See fencing detail.

Fencing shall serve as a barrier to prevent encroachment of any type by construction activities including equipment, building materials, storage, outhouses, or personnel.

All encroachment into the fenced Tree Protection Zone must be approved in writing and supervised by the project arborist. Fencing relocation from original placement must also be approved in writing and be approved by the project arborist. Approved Tree Protection Zone encroachment may require additional

mitigation or protection measures that will be determined by the project arborist at the time of the request.

Contractors and subcontractors shall direct all equipment and personnel to remain outside the fenced area at all times until project is complete, and shall instruct personnel and sub-contractors as to the purpose and importance of fencing and preservation. All contractors and subcontractors are notified by this specification that there will be no exceptions without prior written approval.

Fencing shall be upright and functional at all times prior to demolition and grading and through completion of construction in the specific area of protected trees. If the project is to occur in phases fencing may be removed as each phase is completed.

GRADING AND TRENCHING

Any construction activity that necessitates soil excavation in the vicinity of preserved trees shall be avoided where possible, or be appropriately mitigated under the guidance of the project arborist. All contractors must be aware at all times that specific protection measures are defined, and non-conformance may generate stop-work orders.

The designated Tree Protection Zone is defined around all site trees to be preserved. Fences protect the designated areas. No grading or trenching is to occur within this defined area unless so designated by the Improvement Plan, and where designated shall occur under the direct supervision of the project arborist.

Trenching should be routed around the Tree Protection Zone whenever possible. Where trenching has been designated within the Tree protection Zone, utilization of underground technology to bore, tunnel or excavate with high-pressure air or water will be specified. Hand digging will be generally discouraged unless site conditions restrict the use of alternate technology.

All roots greater than one inch in diameter shall be cleanly hand-cut as they are encountered in any trench or in any grading activity. The tearing of roots by equipment of any type shall not be allowed. Mitigation treatment of pruned roots shall be specified by the project arborist as determined by the degree of root pruning, location of root pruning, and potential exposure to desiccation. No pruning paints or sealants shall be used on cut roots.

Where significant roots are encountered mitigation measures such as supplemental irrigation and/or organic mulches may be specified by the project arborist to offset the reduction of root system capacity.

Retaining walls are effective at holding grade changes outside the area of the Tree Protection Zone and are recommended where necessary. Retaining walls shall be constructed in post and beam or drilled pier construction styles where they are necessary near or within the Tree Protection Zone.

Placement of fill soils is generally discouraged within the Tree Protection Zone, but in some approved locations may be approved to cover up to 30% of this area. The species and condition of the tree shall be considered, as well as site and soil conditions, and depth of fill. Retaining walls should be utilized to minimize the area of fill within the Tree Protection Zone. Type of fill soil and placement methods shall be specified by the project arborist.

Grade changes near or within the Tree Protection Zone shall be designed so that surface drainage will not be diverted toward or around the root crown in any manner. Grade shall drain away from root crown at a minimum of 2%. If grading toward the root collar is unavoidable, appropriate surface and/or subsurface drain facilities shall be installed so that water is effectively diverted away from root collar area.

Approved fill soils within the Tree Protection Zone may also be mitigated using aerated gravel layers as specified by the project arborist.

Tree roots will be expected to grow into areas of soil fill, and quality of imported soil shall be considered. Fill soil shall be site topsoil that closely matches that present within the root zone area. When import soil is utilized it must be the same or slightly coarser texture than existing site soil, should have a pH range comparable to site soils, and generally should have acceptable chemical properties for appropriate plant growth. A soil analysis is required prior to soil importation to evaluate import soil for these criteria.

Grade reduction within the designated Tree Protection Zones shall be generally discouraged, and where approved, shall be conducted only after careful consideration and coordination with the project arborist.

Foundations or footings of any type within the Tree Protection Zone shall be constructed using design techniques that eliminate the need for trenching into natural grade. These techniques might include drilled piers, grade beams, bridges, or cantilevered structures.

TREE DAMAGE

Any form of tree damage which occurs during the demolition, grading, or construction process shall be evaluated by the project arborist. Specific mitigation measures will be developed to compensate for or correct the damage. Fines and penalties may also be levied.

Measures may include, but are not limited to, the following:

- pruning to remove damaged limbs or wood
- bark scoring to remove damaged bark and promote callous formation
- alleviation of compaction by lightly scarifying the soil surface
- installation of a specific mulching material
- supplemental irrigation during the growing season for up to 5 years
- treatment with specific amendments intended to promote health, vigor, or root growth
- vertical mulching or soil fracturing to promote root growth
- periodic post-construction monitoring at the developer's expense
- tree replacement, or payment of the established appraised value, if the damage is so severe that long term survival is not expected

MULCHING

Trees will generally benefit from the application of a 4 inch layer of chipped bark mulch over the soil surface within the greater root zone area. Ideal mulch material is a chipped bark containing a wide range of particle sizes. Bark mulches composed of shredded redwood, bark screened for uniformity of size, or chipped lumber are not acceptable.

Chipped bark mulch may not originate from any tree infected with, or exhibiting symptoms of, Sudden Oak Death (SOD) due to the potential of infecting existing site trees.

TREE PRUNING AND TREATMENTS

All recommendations for pruning or other treatments must be completed prior to acceptance of the project. It is strongly recommended that pruning be completed prior to the start of grading to facilitate optimum logistics and access.

All pruning shall be conducted in conformance with International Society of Arboriculture pruning standards and all pruning must occur under the direct supervision of an arborist certified by the International Society of Arboriculture.