

ATTACHMENT "K"

HORTICULTURAL
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Consultants in Horticulture and Arboriculture

TREE INVENTORY REPORT

810 W. Agua Caliente Road
Sonoma, CA

Prepared for:

Randy Devoto
Hanna Center
17000 Arnold Drive
Sonoma, CA 95476.

Prepared by:

John C. Meserve
ISA Certified Arborist, WE #0478A
ISA Qualified Tree Risk Assessor/TRAQ
ASCA Qualified Tree and Plant Appraiser/TPAQ

September 27, 2023

August 27, 2023

Randy Devoto
Hanna Center
17000 Arnold Drive
Sonoma, CA 95476

Re; Updated *Tree Inventory Report* for the Hanna Project at 810 W. Agua Caliente Road, Sonoma, CA

Randy,

Attached you will find our updated *Tree Inventory Report* for the above noted site near Sonoma. A total of 413 trees were evaluated and this includes all trees found near proposed areas of development which are 6 inches or greater in trunk diameter and located within the property boundaries. This report is based on a revised site plan which was forwarded to our office on September 18th, 2023.

All trees in this report were evaluated and documented for species, size, health, and structural condition. The *Tree Inventory Chart* also provides a preliminary recommendation for preservation or removal based on the plan provided. A *Tree Location Plan* shows the location and numbering sequence of all trees. Also included are a *Fencing Detail*, *Tree Preservation Guidelines*, and *Pruning Standards* for your reference.

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. No other trees are included in this report. If other trees need to be included it is the responsibility of the client to provide that direction.

EXISTING SITE CONDITION SUMMARY

The project site consists of a single family home with outbuildings. The balance of the site is open and undeveloped land

EXISTING TREE SUMMARY

Species that are native to the site include Valley Oak, Coast Live Oak, Blue Oak, Oregon Ash, Bay Laurel, Coast Redwood, Buckeye, Madrone, and Incense Cedar. These make up a majority of the trees present.

Ornamental species that are present include Wild Plum, Spruce, Blue Gum, Mulberry, Cypress, and Olive,

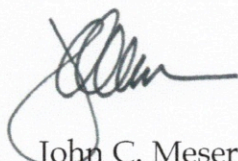
CONSTRUCTION IMPACT SUMMARY

Based on this initial study without benefit of a grading or underground plan it appears that 97 trees will require removal due to the proposed development, 12 trees should be removed because they are poor health or have weak structure, and 304 trees can be preserved.

There are hundreds of other trees at the site that are being preserved which are located away from the immediate areas of development. These have not been included in this study because they will not be impacted by proposed development.

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

Regards,



John C. Meserve

ISA Certified Arborist, WE #0478A

ISA Qualified Tree Risk Assessor/TRAQ

ASCA Qualified Tree and Plant Appraiser/TPAQ



TREE INVENTORY CHART

TREE INVENTORY
HANNA PROJECT
810 W. Agua Caliente Road
Sonoma, CA

Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
1	Quercus agrifolia	Coast Live Oak	9	25	20	4	3	1	1, 6, 7, 8, 9
2	Quercus agrifolia	Coast Live Oak	15	32	17	4	3	1	1, 6, 7, 8, 9
3	Quercus agrifolia	Coast Live Oak	9	15	60	4	3	3	2
4	Quercus agrifolia	Coast Live Oak	5	12	6	4	4	3	2
5	Quercus agrifolia	Coast Live Oak	32	35	29	4	3	3	2
6	Quercus lobata	Valley Oak	25	49	32	4	3	2	1, 6, 7, 8, 9
7	Umbellularia californica	Bay Laurel	27+28	30	21	3	3	1	1, 6, 7, 8, 9
8	Quercus agrifolia	Coast Live Oak	14	28	16	4	3	1	1, 6, 7, 8, 9
9	Quercus agrifolia	Coast Live Oak	29	30	30	4	3	1	1, 6, 7, 8, 9
10	Quercus agrifolia	Coast Live Oak	8+8	20	10	4	4	1	1, 6, 7, 8, 9
11	Quercus agrifolia	Coast Live Oak	18	30	20	4	3	2	1, 6, 7, 8, 9
12	Prunus species	Wild Plum	8	18	15	3	2	2	1, 6, 7, 8, 9
13	Cedrus atlantica	Atlas Cedar	27	65	24	4	3	3	2
14	Quercus agrifolia	Coast Live Oak	13	30	24	4	3	3	2
15	Quercus agrifolia	Coast Live Oak	12	35	18	4	4	3	2

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Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
16	Quercus agrifolia	Coast Live Oak	9+15	35	20	4	3	3	2
17	Quercus agrifolia	Coast Live Oak	17	40	22	4	4	3	2
18	Quercus agrifolia	Coast Live Oak	16	38	22	4	2	3	2
19	Quercus agrifolia	Coast Live Oak	17	38	18	4	4	2	1, 6, 7, 8, 9
20	Cedrus atlantica	Atlas Cedar	40	75	33	4	3	3	2
21	Cupressus sp	Cypress species	20	55	18	3	2	3	2
22	Olea europaea	Olive	7+5+5+6+2+2+3+3	35	20	4	3	2	1, 6, 7, 8, 9
23	Olea europaea	Olive	8+4+15	32	20	3	3	2	1, 6, 7, 8, 9
24	Quercus lobata	Valley Oak	33	70	40	4	3	2	1, 6, 7, 8, 9
25	Prunus sp	Wild Plum	7+9	22	16	3	3	3	2
26	Quercus agrifolia	Coast Live Oak	8+11	28	18	4	4	3	2
27	Quercus agrifolia	Coast Live Oak	11+10+13	25	16	4	4	3	2
28	Quercus agrifolia	Coast Live Oak	15	35	20	4	3	3	2
29	Quercus agrifolia	Coast Live Oak	11	35	18	4	4	3	2
30	Morus alba	Mulberry	13+8+9	26	14	4	2	3	2

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Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
31	Morus alba	Mulberry	19	30	21	4	3	3	2
32	Umbellularia californica	Bay Laurel	5+5+4	25	15	4	4	1	1, 6, 7, 8, 9
33	Sequoia sempervirens	Coast Redwood	41	79	19	4	4	1	1, 6, 7, 8, 9
34	Prunus sp	Wild Plum	6+4+4+3	28	12	4	3	1	1, 6, 7, 8, 9
35	Picea sp.	Spruce	12	33	10	4	3	3	2
36	Quercus lobata	Valley Oak	17+12+10	39	23	4	3	3	2
37	Quercus lobata	Valley Oak	31	38	30	4	3	3	2
38	Quercus agrifolia	Coast Live Oak	7+6+8+6+6	21	12	4	4	3	2
39	Quercus agrifolia	Coast Live Oak	8+5+4+5+5+8+4+7+4	20	12	3	4	3	2
40	Quercus lobata	Valley Oak	39	41	32	4	4	1	1, 6, 7, 8, 9
41	Quercus lobata	Valley Oak	46	50	46	4	3	1	1, 6, 7, 8, 9
42	Quercus lobata	Valley Oak	42	57	36	4	3	1	1, 6, 7, 8, 9
43	Quercus lobata	Valley Oak	27	49	42	4	3	1	1, 6, 7, 8, 9
44	Aesculus californica	Buckeye	11+8	20	16	4	3	2	1, 6, 7, 8, 9
45	Umbellularia californica	Bay Laurel	12+10+9	43	14	3	3	1	1, 6, 7, 8, 9

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Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
46	<i>Aesculus californica</i>	Buckeye	13	25	16	4	3	2	1, 6, 7, 8, 9
47	<i>Quercus lobata</i>	Valley Oak	21	37	31	4	3	3	2
48	<i>Aesculus californica</i>	Buckeye	17+12+11	32	25	4	3	2	1, 6, 7, 8, 9
49	<i>Eucalyptus globulus</i>	Blue Gum	77	87	42	4	3	3	2
50	<i>Olea europaea</i>	Olive	6+6+5	22	13	3	3	2	1, 6, 7, 8, 9
51	<i>Olea europaea</i>	Olive	11+9+6	31	14	4	3	3	2
52	<i>Olea europaea</i>	Olive	9	20	13	4	3	3	2
53	<i>Quercus lobata</i>	Valley Oak	17	33	18	4	3	3	2
54	<i>Quercus lobata</i>	Valley Oak	48	42	28	4	3	3	2
55	<i>Eucalyptus globulus</i>	Blue Gum	93+38	100	42	4	3	2	1, 6, 7, 8, 9
56	<i>Quercus lobata</i>	Valley Oak	57	43	47	4	3	2	1, 6, 7, 8, 9
57	<i>Aesculus californica</i>	Buckeye	9+8	12	17	4	3	2	1, 6, 7, 8, 9
58	<i>Aesculus californica</i>	Buckeye	9	24	19	4	3	2	1, 6, 7, 8, 9
59	<i>Aesculus californica</i>	Buckeye	12+10	19	20	4	3	1	1, 6, 7, 8, 9
60	<i>Aesculus californica</i>	Buckeye	6+3	21	10	4	3	1	1, 6, 7, 8, 9

Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
61	Aesculus californica	Buckeye	9+6	19	15	4	3	1	1, 6, 7, 8, 9
62	Aesculus californica	Buckeye	19+12	26	24	4	3	2	1, 6, 7, 8, 9
63	Morus alba	Mulberry	31	28	12	2	2	2	3
64	Quercus lobata	Valley Oak	32	36	32	4	3	1	1, 6, 7, 8, 9
65	Quercus lobata	Valley Oak	65	53	25	4	3	2	1, 6, 7, 8, 9
66	Quercus lobata	Valley Oak	35	56	41	4	3	3	2
67	Aesculus californica	Buckeye	11	10	30	4	3	3	2
68	Aesculus californica	Buckeye	13+10	21	12	4	3	3	2
69	Quercus agrifolia	Coast Live Oak	22	29	29	4	3	3	2
70	Quercus lobata	Valley Oak	41	75	16	1	1	2	3
71	Aesculus californica	Buckeye	17+12+9	12	30	3	2	2	1, 6, 7, 8, 9
72	Aesculus californica	Buckeye	6+5	12	12	4	3	2	1, 6, 7, 8, 9
73	Quercus agrifolia	Coast Live Oak	31	23	12	3	3	3	2
74	Quercus lobata	Valley Oak	23	43	22	4	3	3	2
75	Prunus sp	Wild Plum	6+6+5+5+3+3+3	16	16	3	3	3	2

Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
76	Quercus agrifolia	Coast Live Oak	27	12	10	2	1	3	3
77	Aesculus californica	Buckeye	10	23	13	4	3	2	1, 6, 7, 8, 9
78	Aesculus californica	Buckeye	12+12+6	29	19	3	3	2	1, 6, 7, 8, 9
79	Umbellularia californica	Bay Laurel	23+22	54	41	3	2	1	1, 6, 7, 8, 9
80	Aesculus californica	Buckeye	14+11	21	13	4	3	1	1, 6, 7, 8, 9
81	Umbellularia californica	Bay Laurel	14	46	18	4	3	1	1, 6, 7, 8, 9
82	Umbellularia californica	Bay Laurel	16	44	32	4	3	2	1, 6, 7, 8, 9
83	Quercus lobata	Valley Oak	24	54	22	4	3	1	1, 6, 7, 8, 9
84	Prunus sp	Wild Plum	5+3+3	20	10	4	3	1	1, 6, 7, 8, 9
85	Quercus lobata	Valley Oak	29	47	22	4	3	3	2
86	Quercus agrifolia	Coast Live Oak	27+25.	40	25	3	2	3	2
87	Umbellularia californica	Bay Laurel	16	34	26	4	3	3	2
88	Umbellularia californica	Bay Laurel	23	48	26	4	3	3	2
89	Quercus lobata	Valley Oak	19	39	27	4	3	3	2
90	Quercus lobata	Valley Oak	25	35	33	4	3	3	2

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Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
91	Quercus lobata	Valley Oak	19	42	21	4	3	2	1, 6, 7, 8, 9
92	Quercus agrifolia	Coast Live Oak	34	42	30	3	2	3	2
93	Quercus lobata	Valley Oak	30	48	26	4	3	3	2
94	Quercus lobata	Valley Oak	31	46	25	4	3	1	1, 6, 7, 8, 9
95	Quercus lobata	Valley Oak	31	40	32	4	4	2	1, 6, 7, 8, 9
96	Quercus lobata	Valley Oak	20	32	31	4	3	1	1, 6, 7, 8, 9
97	Quercus lobata	Valley Oak	34	37	39	4	3	1	1, 6, 7, 8, 9
98	Quercus lobata	Valley Oak	22	41	25	4	3	1	1, 6, 7, 8, 9
99	Quercus lobata	Valley Oak	29	20	40	2	2	1	3
100	Aesculus californica	Buckeye	15+4+4+4	31	16	4	3	2	1, 6, 7, 8, 9
101	Umbellularia californica	Bay Laurel	17+15+12+10	61	20	4	3	3	2
102	Quercus lobata	Valley Oak	35	68	46	4	3	3	2
103	Arbutus menziesii	Madrone	46	56	43	4	3	1	1, 6, 7, 8, 9
104	Quercus agrifolia	Coast Live Oak	9+4	43	13	4	3	1	1, 6, 7, 8, 9
105	Umbellularia californica	Bay Laurel	21	56	46	4	3	1	1, 6, 7, 8, 9

Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
106	Quercus lobata	Valley Oak	29	56	44	4	3	1	1, 6, 7, 8, 9
107	Quercus lobata	Valley Oak	35	58	45	3	3	2	1, 6, 7, 8, 9
108	Quercus agrifolia	Coast Live Oak	34	23	31	4	3	2	1, 6, 7, 8, 9
109	Aesculus californica	Buckeye	15+11	31	24	4	3	1	1, 6, 7, 8, 9
110	Aesculus californica	Buckeye	14	40	25	4	3	1	1, 6, 7, 8, 9
111	Aesculus californica	Buckeye	12+4	27	21	4	3	1	1, 6, 7, 8, 9
112	Quercus agrifolia	Coast Live Oak	10+9+9+8+5	24	22	1	3	2	3
113	Quercus lobata	Valley Oak	7	25	14	4	3	3	2
114	Quercus agrifolia	Coast Live Oak	13+11+5	25	17	4	3	3	2
115	Quercus agrifolia	Coast Live Oak	14	25	14	4	3	3	2
116	Quercus agrifolia	Valley Oak	8+7	10	5	4	3	2	1, 6, 7, 8, 9
117	Quercus agrifolia	Valley Oak	13+11+11+5	28	16	4	3	1	1, 6, 7, 8, 9
118	Quercus lobata	Valley Oak	20	28	20	4	3	1	1, 6, 7, 8, 9
119	Quercus agrifolia	Coast Live Oak	20	25	14	4	3	1	1, 6, 7, 8, 9
120	Quercus lobata	Valley Oak	14	28	16	4	3	1	1, 6, 7, 8, 9

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Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
121	Quercus lobata	Valley Oak	5	20	5	4	3	1	1, 6, 7, 8, 9
122	Quercus lobata	Valley Oak	10+8	25	10	4	3	1	1, 6, 7, 8, 9
123	Quercus lobata	Valley Oak	6	25	16	4	3	1	1, 6, 7, 8, 9
124	Quercus lobata	Valley Oak	19	25	30	3	3	1	1, 6, 7, 8, 9
125	Quercus lobata	Valley Oak	6	15	15	4	3	1	1, 6, 7, 8, 9
126	Quercus lobata	Valley Oak	8	25	14	4	3	1	1, 6, 7, 8, 9
127	Quercus agrifolia	Coast Live Oak	7	15	20	4	3	1	1, 6, 7, 8, 9
128	Quercus lobata	Valley Oak	10	25	25	4	3	1	1, 6, 7, 8, 9
129	Quercus agrifolia	Coast Live Oak	6	20	10	4	3	1	1, 6, 7, 8, 9
130	Quercus agrifolia	Coast Live Oak	15+14	25	19	4	3	1	1, 6, 7, 8, 9
131	Quercus lobata	Valley Oak	14	22	16	4	3	1	1, 6, 7, 8, 9
132	Quercus agrifolia	Coast Live Oak	10	16	11	3	3	1	1, 6, 7, 8, 9
133	Quercus lobata	Valley Oak	19	28	25	4	3	1	1, 6, 7, 8, 9
134	Quercus lobata	Valley Oak	19	32	21	4	3	1	1, 6, 7, 8, 9
135	Quercus agrifolia	Coast Live Oak	10+9+9+8+8	23	15	4	3	2	1, 6, 7, 8, 9

Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
136	Quercus agrifolia	Coast Live Oak	12+11+8+3+3	30	13	4	3	3	2
137	Quercus agrifolia	Coast Live Oak	12+4+4	20	11	3	2	3	2
138	Quercus lobata	Valley Oak	5	25	10	4	3	3	2
139	Quercus agrifolia	Coast Live Oak	17+14+9	25	18	4	3	3	2
140	Quercus agrifolia	Coast Live Oak	14+9	18	14	4	3	2	1, 6, 7, 8, 9
141	Quercus lobata	Valley Oak	18+14	25	27	4	3	1	1, 6, 7, 8, 9
142	Quercus lobata	Valley Oak	17	30	28	4	3	1	1, 6, 7, 8, 9
143	Quercus lobata	Valley Oak	5	18	13	4	3	1	1, 6, 7, 8, 9
144	Quercus lobata	Valley Oak	17+8+6+6	35	22	4	3	1	1, 6, 7, 8, 9
145	Quercus agrifolia	Coast Live Oak	7	16	14	4	3	1	1, 6, 7, 8, 9
146	Quercus lobata	Valley Oak	5	17	12	4	3	1	1, 6, 7, 8, 9
147	Quercus lobata	Valley Oak	26	35	24	4	3	1	1, 6, 7, 8, 9
148	Quercus agrifolia	Coast Live Oak	13+6+3	25	18	4	3	1	1, 6, 7, 8, 9
149	Quercus agrifolia	Coast Live Oak	14+12+7	23	20	4	3	1	1, 6, 7, 8, 9
150	Umbellularia californica	Bay Laurel	5+5	23	11	4	3	1	1, 6, 7, 8, 9

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Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
151	Quercus agrifolia	Coast Live Oak	21	25	27	4	3	1	1, 6, 7, 8, 9
152	Quercus agrifolia	Coast Live Oak	7	25	13	4	3	1	1, 6, 7, 8, 9
153	Quercus agrifolia	Coast Live Oak	11	25	15	4	3	1	1, 6, 7, 8, 9
154	Umbellularia californica	Bay Laurel	9	15	17	4	3	1	1, 6, 7, 8, 9
155	Quercus lobata	Valley Oak	8	25	16	4	3	1	1, 6, 7, 8, 9
156	Umbellularia californica	Bay Laurel	13+7	25	16	3	3	1	1, 6, 7, 8, 9
157	Umbellularia californica	Bay Laurel	16+11+6+6+3	30	20	4	3	1	1, 6, 7, 8, 9
158	Umbellularia californica	Bay Laurel	13+11+11+9+8	29	14	4	3	1	1, 6, 7, 8, 9
159	Umbellularia californica	Bay Laurel	13+11+7+6	30	25	4	3	1	1, 6, 7, 8, 9
160	Umbellularia californica	Bay Laurel	15+14+14	33	28	4	3	1	1, 6, 7, 8, 9
161	Quercus lobata	Valley Oak	27	52	22	4	3	1	1, 6, 7, 8, 9
162	Fraxinus latifolia	Oregon Ash	9	25	14	4	3	1	1, 6, 7, 8, 9
163	Fraxinus latifolia	Oregon Ash	8	24	9	4	3	1	1, 6, 7, 8, 9
164	Quercus lobata	Valley Oak	7	23	11	4	3	1	1, 6, 7, 8, 9
165	Quercus lobata	Valley Oak	16+15+10+6	50	31	4	3	1	1, 6, 7, 8, 9

Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
166	Quercus lobata	Valley Oak	6	23	8	4	3	1	1, 6, 7, 8, 9
167	Quercus lobata	Valley Oak	7	23	8	4	3	1	1, 6, 7, 8, 9
168	Quercus lobata	Valley Oak	4	12	6	2	2	1	1, 6, 7, 8, 9
169	Quercus lobata	Valley Oak	6	22	6	4	3	1	1, 6, 7, 8, 9
170	Quercus lobata	Valley Oak	4	23	8	4	3	1	1, 6, 7, 8, 9
171	Quercus lobata	Valley Oak	5	18	6	4	3	1	1, 6, 7, 8, 9
172	Quercus lobata	Valley Oak	4	16	5	3	3	1	1, 6, 7, 8, 9
173	Umbellularia californica	Bay Laurel	4+4+4+3	16	14	3	3	1	1, 6, 7, 8, 9
174	Quercus lobata	Valley Oak	11	38	32	4	3	1	1, 6, 7, 8, 9
175	Quercus lobata	Valley Oak	6+6	26	11	3	3	1	1, 6, 7, 8, 9
176	Quercus lobata	Valley Oak	5	26	11	4	3	1	1, 6, 7, 8, 9
177	Quercus lobata	Valley Oak	13	41	32	4	3	1	1, 6, 7, 8, 9
178	Quercus lobata	Valley Oak	15	47	30	3	3	1	1, 6, 7, 8, 9
179	Quercus lobata	Valley Oak	9+7	42	30	4	3	1	1, 6, 7, 8, 9
180	Quercus lobata	Valley Oak	15	48	25	4	3	1	1, 6, 7, 8, 9

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Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
181	Quercus agrifolia	Coast Live Oak	8	30	15	4	3	1	1, 6, 7, 8, 9
182	Quercus agrifolia	Coast Live Oak	14	27	30	4	3	1	1, 6, 7, 8, 9
183	Quercus lobata	Valley Oak	11	23	31	4	3	1	1, 6, 7, 8, 9
184	Quercus lobata	Valley Oak	9	37	34	4	3	1	1, 6, 7, 8, 9
185	Quercus lobata	Valley Oak	48	65	40	4	3	1	1, 6, 7, 8, 9
186	Quercus agrifolia	Coast Live Oak	11	15	35	4	3	2	1, 6, 7, 8, 9
187	Umbellularia californica	Bay Laurel	15+14	43	33	4	3	3	2
188	Umbellularia californica	Bay Laurel	23+10	55	23	4	3	3	2
189	Umbellularia californica	Bay Laurel	11	30	13	3	3	3	2
190	Quercus agrifolia	Coast Live Oak	9	29	11	4	3	3	2
191	Quercus agrifolia	Coast Live Oak	16+9	27	21	4	3	3	2
192	Quercus agrifolia	Coast Live Oak	14	28	22	4	3	3	2
193	Quercus lobata	Valley Oak	48+24	60	45	4	3	3	2
194	Quercus lobata	Valley Oak	25	40	28	3	3	3	2
195	Quercus agrifolia	Coast Live Oak	9	27	8	4	3	1	1, 6, 7, 8, 9

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Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
196	Quercus agrifolia	Coast Live Oak	10	26	12	4	3	2	1, 6, 7, 8, 9
197	Quercus lobata	Valley Oak	8+8	17	15	4	3	2	1, 6, 7, 8, 9
198	Quercus lobata	Valley Oak	7	29	11	4	3	2	1, 6, 7, 8, 9
199	Quercus agrifolia	Coast Live Oak	10	20	25	4	3	2	1, 6, 7, 8, 9
200	Quercus agrifolia	Coast Live Oak	8	30	12	4	3	2	1, 6, 7, 8, 9
201	Quercus lobata	Valley Oak	5	23	13	4	3	2	1, 6, 7, 8, 9
202	Quercus lobata	Valley Oak	9	21	12	3	3	2	1, 6, 7, 8, 9
203	Quercus lobata	Valley Oak	16+11	31	18	4	3	2	1, 6, 7, 8, 9
204	Quercus douglassii	Blue Oak	15	37	21	4	3	2	1, 6, 7, 8, 9
205	Quercus agrifolia	Coast Live Oak	20	35	20	4	3	2	1, 6, 7, 8, 9
206	Quercus agrifolia	Coast Live Oak	6	16	7	4	3	1	1, 6, 7, 8, 9
207	Fraxinus latifolia	Oregon Ash	23	24	27	4	3	1	1, 6, 7, 8, 9
208	Fraxinus latifolia	Oregon Ash	20	32	20	4	3	3	2
209	Fraxinus latifolia	Oregon Ash	14	32	20	4	3	3	2
210	Quercus agrifolia	Coast Live Oak	14	34 ¹⁴	25	4	3	3	2

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Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5')	Height	Radius	Health	Structure	Construction Impacts	Recommendations
211	Quercus agrifolia	Coast Live Oak	7	24	12	3	3	1	1, 6, 7, 8, 9
212	Quercus agrifolia	Coast Live Oak	12	25	15	4	3	3	2
213	Quercus agrifolia	Coast Live Oak	20	21	12	4	3	1	1, 6, 7, 8, 9
214	Quercus agrifolia	Coast Live Oak	17	22	14	4	3	1	1, 6, 7, 8, 9
215	Quercus agrifolia	Coast Live Oak	16	24	13	4	3	1	1, 6, 7, 8, 9
216	Quercus agrifolia	Coast Live Oak	19	23	12	4	3	1	1, 6, 7, 8, 9
217	Quercus agrifolia	Coast Live Oak	14	23	27	4	3	1	1, 6, 7, 8, 9
218	Quercus agrifolia	Coast Live Oak	17	26	15	3	3	1	1, 6, 7, 8, 9
219	Quercus agrifolia	Coast Live Oak	10	27	15	4	3	3	2
220	Quercus agrifolia	Coast Live Oak	6	15	20	4	3	3	2
221	Quercus agrifolia	Coast Live Oak	6+3	21	14	3	3	3	2
222	Quercus agrifolia	Coast Live Oak	5	10	10	3	3	1	1, 6, 7, 8, 9
223	Umbellularia californica	Bay Laurel	6+5+4+4+4	23	12	4	3	1	1, 6, 7, 8, 9
224	Quercus agrifolia	Coast Live Oak	7	31	15	4	3	1	1, 6, 7, 8, 9
225	Quercus agrifolia	Coast Live Oak	11	31	15	4	3	1	1, 6, 7, 8, 9

Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
226	Quercus agrifolia	Coast Live Oak	10	27	11	4	3	1	1, 6, 7, 8, 9
227	Quercus agrifolia	Coast Live Oak	9	23	17	4	3	1	1, 6, 7, 8, 9
228	Umbellularia californica	Bay Laurel	5	23	10	3	3	1	1, 6, 7, 8, 9
229	Umbellularia californica	Bay Laurel	4+3+2	23	11	4	3	1	1, 6, 7, 8, 9
230	Fraxinus latifolia	Oregon Ash	8+5	25	10	3	3	1	1, 6, 7, 8, 9
231	Quercus agrifolia	Coast Live Oak	18+16	37	25	4	3	1	1, 6, 7, 8, 9
232	Quercus agrifolia	Coast Live Oak	10	28	25	4	3	1	1, 6, 7, 8, 9
233	Quercus agrifolia	Coast Live Oak	14	28	25	4	3	1	1, 6, 7, 8, 9
234	Quercus lobata	Valley Oak	11	31	20	4	3	1	1, 6, 7, 8, 9
235	Quercus agrifolia	Coast Live Oak	10+9	25	23	4	3	1	1, 6, 7, 8, 9
236	Quercus agrifolia	Coast Live Oak	15+15+15+5	26	28	4	3	1	1, 6, 7, 8, 9
237	Quercus agrifolia	Coast Live Oak	3	10	6	4	3	1	1, 6, 7, 8, 9
238	Quercus lobata	Valley Oak	9	22	15	3	3	1	1, 6, 7, 8, 9
239	Quercus agrifolia	Coast Live Oak	9+7	21	14	4	3	1	1, 6, 7, 8, 9
240	Quercus agrifolia	Coast Live Oak	13	21	14	3	3	1	1, 6, 7, 8, 9

Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
241	Quercus lobata	Valley Oak	15	26	25	4	3	1	1, 6, 7, 8, 9
242	Quercus agrifolia	Coast Live Oak	13	23	20	3	3	3	2
243	Arbutus menziesii	Madrone	11+10+9+7	26	18	4	3	3	2
244	Quercus agrifolia	Coast Live Oak	13+13+10+8+5	28	20	4	3	1	1, 6, 7, 8, 9
245	Quercus agrifolia	Coast Live Oak	6	25	6	4	3	1	1, 6, 7, 8, 9
246	Quercus agrifolia	Coast Live Oak	7	25	8	4	3	1	1, 6, 7, 8, 9
247	Quercus lobata	Valley Oak	8+5	27	14	4	3	1	1, 6, 7, 8, 9
248	Quercus agrifolia	Coast Live Oak	7	21	20	3	3	1	1, 6, 7, 8, 9
249	Quercus agrifolia	Coast Live Oak	6	20	15	3	3	1	1, 6, 7, 8, 9
250	Quercus agrifolia	Coast Live Oak	12+11+2	30	16	4	3	1	1, 6, 7, 8, 9
251	Quercus agrifolia	Coast Live Oak	10+9	23	18	3	3	1	1, 6, 7, 8, 9
252	Quercus agrifolia	Coast Live Oak	11	27	18	4	3	1	1, 6, 7, 8, 9
253	Quercus agrifolia	Coast Live Oak	13+5+1+1	25	18	4	3	1	1, 6, 7, 8, 9
254	Quercus lobata	Valley Oak	8	31	18	4	3	1	1, 6, 7, 8, 9
255	Quercus agrifolia	Coast Live Oak	11	30	19	4	3	1	1, 6, 7, 8, 9

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Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
256	Quercus agrifolia	Coast Live Oak	12+11+4	29	20	4	3	1	1, 6, 7, 8, 9
257	Quercus agrifolia	Coast Live Oak	23	27	24	4	3	1	1, 6, 7, 8, 9
258	Quercus agrifolia	Coast Live Oak	20+15+6	35	18	4	3	1	1, 6, 7, 8, 9
259	Quercus agrifolia	Coast Live Oak	19+17	35	31	3	3	1	1, 6, 7, 8, 9
260	Quercus lobata	Valley Oak	13	34	14	3	3	3	2
261	Quercus agrifolia	Coast Live Oak	13	25	19	3	3	2	1, 6, 7, 8, 9
262	Quercus agrifolia	Coast Live Oak	23+15	31	29	3	3	1	1, 6, 7, 8, 9
263	Quercus agrifolia	Coast Live Oak	8	21	12	3	3	1	1, 6, 7, 8, 9
264	Quercus lobata	Valley Oak	36	60	45	4	3	1	1, 6, 7, 8, 9
265	Quercus agrifolia	Coast Live Oak	7	22	12	3	3	1	1, 6, 7, 8, 9
266	Quercus lobata	Valley Oak	23	45	40	4	3	1	1, 6, 7, 8, 9
267	Quercus agrifolia	Coast Live Oak	31	38	25	3	3	1	1, 6, 7, 8, 9
268	Fraxinus latifolia	Oregon Ash	5+3+2	15	14	3	3	1	1, 6, 7, 8, 9
269	Quercus agrifolia	Coast Live Oak	19	28	20	3	3	1	1, 6, 7, 8, 9
270	Umbellularia californica	Bay Laurel	11+7+5	31	18	3	3	1	1, 6, 7, 8, 9

Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
271	Umbellularia californica	Bay Laurel	16	44	23	3	3	1	1, 6, 7, 8, 9
272	Quercus agrifolia	Coast Live Oak	13	38	25	3	3	1	1, 6, 7, 8, 9
273	Quercus agrifolia	Coast Live Oak	17	27	17	3	3	1	1, 6, 7, 8, 9
274	Quercus agrifolia	Coast Live Oak	15	34	18	3	3	1	1, 6, 7, 8, 9
275	Eucalyptus globulus	Blue Gum	40	119	25	3	1	1	3
276	Eucalyptus globulus	Blue Gum	33	122	26	3	3	1	1, 6, 7, 8, 9
277	Eucalyptus globulus	Blue Gum	140	130	60	3	3	1	1, 6, 7, 8, 9
278	Quercus agrifolia	Coast Live Oak	17+11+8	45	26	3	3	1	1, 6, 7, 8, 9
279	Quercus agrifolia	Coast Live Oak	12	37	23	3	3	1	1, 6, 7, 8, 9
280	Quercus agrifolia	Coast Live Oak	11	18	18	3	3	1	1, 6, 7, 8, 9
281	Quercus agrifolia	Coast Live Oak	9	31	15	2	2	1	1, 6, 7, 8, 9
282	Quercus agrifolia	Coast Live Oak	8+4	23	23	3	3	1	1, 6, 7, 8, 9
283	Quercus agrifolia	Coast Live Oak	13	28	20	3	3	1	1, 6, 7, 8, 9
284	Quercus agrifolia	Coast Live Oak	8	12	6	1	2	1	3
285	Quercus agrifolia	Coast Live Oak	12+10+5	28	32	3	3	1	1, 6, 7, 8, 9

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Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
286	Quercus agrifolia	Coast Live Oak	12	25	16	3	3	1	1, 6, 7, 8, 9
287	Quercus agrifolia	Coast Live Oak	14+14+14	26	30	3	3	1	1, 6, 7, 8, 9
288	Quercus agrifolia	Coast Live Oak	17	32	30	3	3	1	1, 6, 7, 8, 9
289	Quercus agrifolia	Coast Live Oak	12+11	21	25	2	2	1	1, 6, 7, 8, 9
290	Quercus agrifolia	Coast Live Oak	22	40	30	4	3	3	2
291	Quercus agrifolia	Coast Live Oak	17+9	40	30	4	3	3	2
292	Quercus agrifolia	Coast Live Oak	25	40	30	4	3	3	2
293	Quercus agrifolia	Coast Live Oak	20	35	20	4	3	1	1, 6, 7, 8, 9
294	Fraxinus latifolia	Coast Live Oak	19	30	18	4	2	1	1, 6, 7, 8, 9
295	Quercus agrifolia	Coast Live Oak	18	32	20	4	2	2	1, 6, 7, 8, 9
296	Quercus agrifolia	Coast Live Oak	11	30	14	4	3	1	1, 6, 7, 8, 9
297	Quercus agrifolia	Coast Live Oak	11	30	18	4	3	1	1, 6, 7, 8, 9
298	Quercus agrifolia	Coast Live Oak	19	14	32	2	1	3	4
299	Eucalyptus globulus	Blue Gum	16	70	18	3	2	3	2
300	Quercus agrifolia	Coast Live Oak		14	18	4	3	3	2

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Tree #	Species	Common Name	Trunk Diameter (DBH@ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
301	Eucalyptus globulus	Blue Gum	28	60	40	3	1	3	4
302	Eucalyptus globulus	Blue Gum	22	85	20	3	2	3	2
303	Quercus agrifolia	Coast Live Oak	11	20	20	4	3	3	2
304	Quercus agrifolia	Coast Live Oak		15	22	4	3	3	2
305	Quercus agrifolia	Coast Live Oak	12	20	22	4	3	3	2
306	Quercus agrifolia	Coast Live Oak	16	35	22	4	3	3	2
307	Eucalyptus globulus	Blue Gum	43	90	40	3	1	3	4
308	Quercus agrifolia	Coast Live Oak	8	14	18	4	3	3	2
309	Quercus agrifolia	Coast Live Oak	15	16	22	4	3	3	2
310	Quercus agrifolia	Coast Live Oak	9	16	28	4	3	3	2
311	Quercus agrifolia	Coast Live Oak	10	18	30	4	3	3	2
312	Quercus agrifolia	Coast Live Oak	14	16	24	4	3	1	1, 6, 7, 8, 9
313	Quercus agrifolia	Coast Live Oak	10	25	20	3	2	1	1, 6, 7, 8, 9
314	Umbellularia californica	Bay Laurel	9+6+4+3+3	33	26	3	3	1	1, 6, 7, 8, 9
315	Quercus agrifolia	Coast Live Oak	16	28	30	4	3	1	1, 6, 7, 8, 9

Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
316	Quercus agrifolia	Coast Live Oak	21	40	30	4	3	1	1, 6, 7, 8, 9
317	Quercus agrifolia	Coast Live Oak	17+12	35	30	4	3	1	1, 6, 7, 8, 9
318	Quercus agrifolia	Coast Live Oak	9	30	20	4	3	1	1, 6, 7, 8, 9
319	Quercus agrifolia	Coast Live Oak	16	31	16	4	3	1	1, 6, 7, 8, 9
320	Quercus agrifolia	Coast Live Oak	18+19	20	40	2	2	1	1, 6, 7, 8, 9
321	Quercus agrifolia	Coast Live Oak	25+7	40	35	4	3	1	1, 6, 7, 8, 9
322	Quercus agrifolia	Coast Live Oak	28	38	35	4	3	1	1, 6, 7, 8, 9
323	Quercus agrifolia	Coast Live Oak	9	35	16	4	3	1	1, 6, 7, 8, 9
324	Quercus lobata	Valley Oak	8+16	30	12	4	3	1	1, 6, 7, 8, 9
325	Quercus agrifolia	Coast Live Oak	16	35	20	3	1	1	4
326	Quercus lobata	Valley Oak	27	60	38	4	3	1	1, 6, 7, 8, 9
327	Aesculus californica	Buckeye	10	30	16	4	3	1	1, 6, 7, 8, 9
328	Umbellularia californica	Bay Laurel	18+19+16	40	40	4	2	1	1, 6, 7, 8, 9
329	Quercus agrifolia	Coast Live Oak	19	45	38	4	3	1	1, 6, 7, 8, 9
330	Eucalyptus globulus	Blue Gum	45	100	50	4	2	1	1, 6, 7, 8, 9

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Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
331	Quercus agrifolia	Coast Live Oak	17+14+13+12+12+12	40	36	4	3	1	1, 6, 7, 8, 9
332	Quercus agrifolia	Coast Live Oak	26+24+19	50	47	4	3	1	1, 6, 7, 8, 9
333	Quercus lobata	Valley Oak	27	61	50	4	3	1	1, 6, 7, 8, 9
334	Quercus agrifolia	Coast Live Oak	17	48	43	4	3	1	1, 6, 7, 8, 9
335	Quercus agrifolia	Coast Live Oak	11	56	35	4	3	1	1, 6, 7, 8, 9
336	Quercus agrifolia	Coast Live Oak	13	49	24	4	3	1	1, 6, 7, 8, 9
337	Quercus agrifolia	Coast Live Oak	18	47	36	4	3	1	1, 6, 7, 8, 9
338	Quercus agrifolia	Coast Live Oak	14	35	20	4	3	1	1, 6, 7, 8, 9
339	Quercus agrifolia	Coast Live Oak	16	20	40	3	3	1	1, 6, 7, 8, 9
340	Umbellularia californica	Bay Laurel	9	33	15	4	3	1	1, 6, 7, 8, 9
341	Aesculus californica	Buckeye	12	36	30	4	3	1	1, 6, 7, 8, 9
342	Umbellularia californica	Bay Laurel	9	28	22	4	3	1	1, 6, 7, 8, 9
343	Quercus agrifolia	Coast Live Oak	31	33	35	4	3	1	1, 6, 7, 8, 9
344	Quercus lobata	Valley Oak	50	77	60	4	3	1	1, 6, 7, 8, 9
345	Quercus lobata	Valley Oak	20	55	60	4	3	1	1, 6, 7, 8, 9

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Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
346	Quercus agrifolia	Coast Live Oak	22+22+17	43	48	4	3	1	1, 6, 7, 8, 9
347	Quercus agrifolia	Coast Live Oak	23	34	31	4	3	1	1, 6, 7, 8, 9
348	Quercus agrifolia	Coast Live Oak	23+19	34	25	4	3	1	1, 6, 7, 8, 9
349	Quercus lobata	Valley Oak	20	45	25	4	3	3	2
350	Quercus agrifolia	Coast Live Oak	19+19	15	40	2	2	1	1, 6, 7, 8, 9
351	Quercus agrifolia	Coast Live Oak	16+25	16	40	2	2	1	1, 6, 7, 8, 9
352	Quercus lobata	Valley Oak	50	43	37	4	3	1	1, 6, 7, 8, 9
353	Umbellularia californica	Bay Laurel	8+7	29	38	3	3	3	2
354	Quercus lobata	Valley Oak	30+17	56	48	3	2	3	2
355	Quercus agrifolia	Coast Live Oak	26+20	29	40	3	2	3	2
356	Calocedrus decurrens	Incense Cedar	41	41	11	3	3	3	2
357	Quercus lobata	Valley Oak	36	35	34	3	3	2	1, 6, 7, 8, 9
358	Quercus agrifolia	Coast Live Oak	38	42	38	4	3	2	1, 6, 7, 8, 9
359	Quercus agrifolia	Coast Live Oak	9	20	15	4	3	2	1, 6, 7, 8, 9
360	Quercus agrifolia	Coast Live Oak	7	22	15	4	3	2	1, 6, 7, 8, 9

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Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
361	Quercus agrifolia	Coast Live Oak	16 +17	24	21	4	3	2	1, 6, 7, 8, 9
362	Quercus agrifolia	Coast Live Oak	20	32	20	4	3	2	1, 6, 7, 8, 9
363	Quercus agrifolia	Coast Live Oak	17	33	25	4	3	1	1, 6, 7, 8, 9
364	Quercus agrifolia	Coast Live Oak	20	45	42	4	3	1	1, 6, 7, 8, 9
365	Quercus agrifolia	Coast Live Oak	37	65	39	3	3	3	2
366	Quercus agrifolia	Coast Live Oak	25	55	37	4	3	3	2
367	Quercus agrifolia	Coast Live Oak	10+10	29	16	4	3	1	1, 6, 7, 8, 9
368	Quercus agrifolia	Coast Live Oak	19	46	38	4	3	1	1, 6, 7, 8, 9
369	Quercus agrifolia	Coast Live Oak	20	35	30	4	3	1	1, 6, 7, 8, 9
370	Quercus agrifolia	Coast Live Oak	18	40	36	3	3	1	1, 6, 7, 8, 9
371	Quercus agrifolia	Coast Live Oak	10	13	30	3	3	1	1, 6, 7, 8, 9
372	Quercus agrifolia	Coast Live Oak	15+8	20	38	3	3	1	1, 6, 7, 8, 9
373	Quercus agrifolia	Coast Live Oak	29	40	46	4	3	1	1, 6, 7, 8, 9
374	Quercus agrifolia	Coast Live Oak	23	35	43	4	3	1	1, 6, 7, 8, 9
375	Quercus lobata	Valley Oak	16	53	52	4	3	1	1, 6, 7, 8, 9

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Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
376	Quercus agrifolia	Coast Live Oak	14	17	41	3	3	1	1, 6, 7, 8, 9
377	Quercus agrifolia	Coast Live Oak	25	38	40	4	3	1	1, 6, 7, 8, 9
378	Quercus lobata	Valley Oak	11	41	33	4	3	1	1, 6, 7, 8, 9
379	Quercus lobata	Valley Oak	20	67	46	4	3	1	1, 6, 7, 8, 9
380	Quercus lobata	Valley Oak	8	35	18	4	3	1	1, 6, 7, 8, 9
381	Quercus lobata	Valley Oak	14	46	28	4	3	1	1, 6, 7, 8, 9
382	Umbellularia californica	Bay Laurel	10	35	18	3	3	1	1, 6, 7, 8, 9
383	Aesculus californica	Buckeye	10+9+8	32	25	4	3	1	1, 6, 7, 8, 9
384	Umbellularia californica	Bay Laurel	9+9+8+6+4	21	30	3	2	1	1, 6, 7, 8, 9
385	Quercus lobata	Valley Oak	21	50	36	4	3	1	1, 6, 7, 8, 9
386	Quercus lobata	Valley Oak	14	55	35	4	3	1	1, 6, 7, 8, 9
387	Quercus agrifolia	Coast Live Oak	14+13+13	25	40	4	3	1	1, 6, 7, 8, 9
388	Quercus lobata	Valley Oak	27	65	51	4	3	1	1, 6, 7, 8, 9
389	Quercus lobata	Valley Oak	21	62	35	4	3	1	1, 6, 7, 8, 9
390	Quercus lobata	Valley Oak	17	40	35	4	3	1	1, 6, 7, 8, 9

TREE INVENTORY
HANNA PROJECT
810 W. Agua Caliente Road
Sonoma, CA

Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
391	Quercus agrifolia	Coast Live Oak	24+13+12+8 +10	44	38	4	3	1	1, 6, 7, 8, 9
392	Quercus lobata	Valley Oak	39	65	43	3	3	1	1, 6, 7, 8, 9
393	Quercus lobata	Valley Oak	20	50	40	4	3	1	1, 6, 7, 8, 9
394	Quercus lobata	Valley Oak	16	48	35	4	3	1	1, 6, 7, 8, 9
395	Quercus lobata	Valley Oak	18	51	27	4	3	1	1, 6, 7, 8, 9
396	Quercus lobata	Valley Oak	42	61	49	4	3	3	2
397	Quercus lobata	Valley Oak	19	40	38	4	3	3	2
398	Quercus lobata	Valley Oak	21+17+17+1 3	61	41	4	3	1	1, 6, 7, 8, 9
399	Quercus agrifolia	Coast Live Oak	19+16	26	35	3	3	1	1, 6, 7, 8, 9
400	Quercus lobata	Valley Oak	18+16+12+1 2	50	38	4	3	1	1, 6, 7, 8, 9
401	Aesculus californica	Buckeye	4+4+3	18	15	3	3	3	2
402	Aesculus californica	Buckeye	5+5	15	15	3	3	3	2
403	Quercus agrifolia	Coast Live Oak	23	28	19	1	1	1	3
404	Quercus lobata	Valley Oak	17	35	16	4	3	1	1, 6, 7, 8, 9
405	Aesculus californica	Buckeye	5	18	15	3	3	1	1, 6, 7, 8, 9

Tree #	Species	Common Name	Trunk Diameter (DBH @ 4.5")	Height	Radius	Health	Structure	Construction Impacts	Recommendations
406	Quercus agrifolia	Coast Live Oak	8	18	15	3	3	1	1, 6, 7, 8, 9
407	Quercus agrifolia	Coast Live Oak	6	13	6	3	3	3	2
408	Quercus lobata	Valley Oak	13	35	15	3	3	3	2
409	Quercus agrifolia	Coast Live Oak	≥wq	28	24	4	3	1	1, 6, 7, 8, 9
410	Olea europaea	Olive	7+3	31	12	4	3	2	1, 6, 7, 8, 9
411	Quercus agrifolia	Coast Live Oak	7	17	12	3	3	1	1, 6, 7, 8, 9
412	Quercus agrifolia	Coast Live Oak	19+6	32	23	4	3	1	1, 6, 7, 8, 9
413	Quercus lobata	Valley Oak	24	62	46	4	3	1	1, 6, 7, 8, 9

KEY TO TREE
INVENTORY CHART

KEY TO TREE INVENTORY CHART
810 Agua Caliente Road
Sonoma, CA

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. 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 in inches to document its diameter at 54" 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.

Construction 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.

- (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 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. No protection required.
- (2) Removal is required due to significant development impacts.
- (3) Removal is required 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 clear the canopy, per International Society of Arboriculture pruning standards.
- (10) This trunk is located off site, but the canopy overhangs the project site.
- (11) Excavation may be required within the TPZ and the dripline for development. Excavation within the TPZ of any type must adhere to the following guidelines:

All roots encountered that are 2 inches or larger in diameter must be cleanly cut as they are encountered by excavating equipment.

Roots may not be ripped from the ground and then trimmed. They must be trimmed as encountered and this will require the use of a ground man working with a suitable power tool.

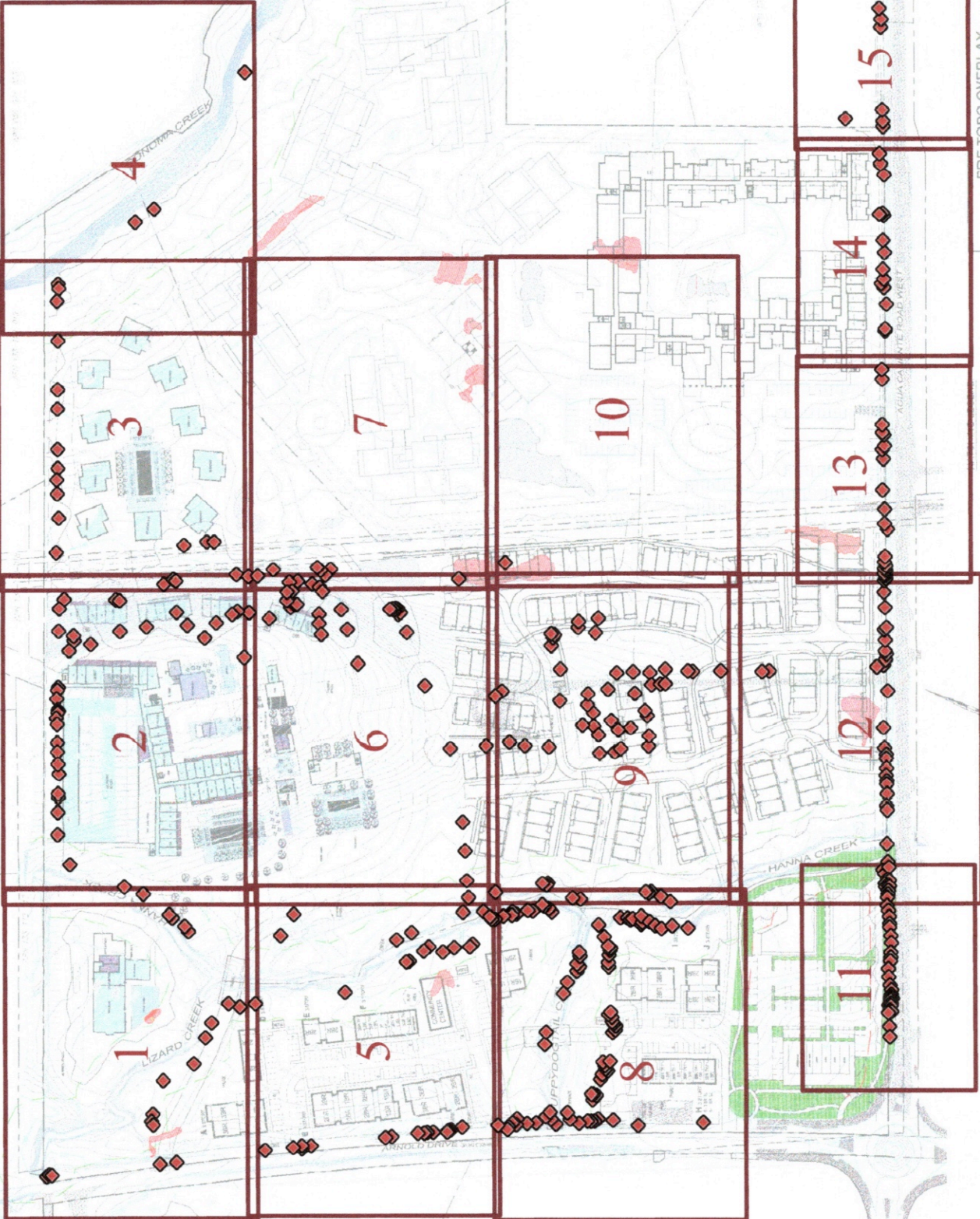
Pruned and exposed roots greater than 2 inches in diameter must be protected from desiccation if left exposed for more than 24 hours. Cover cut roots with heavy cloth, burlap, used carpeting, or similar material that has been soaked in water, until trench or excavation has been backfilled.

If excavation impacts more than 20% of the defined TPZ then supplemental irrigation may be required to offset loss of roots. Excavation in this case should be directed by the project arborist who will determine whether mitigation is required, when, and how.

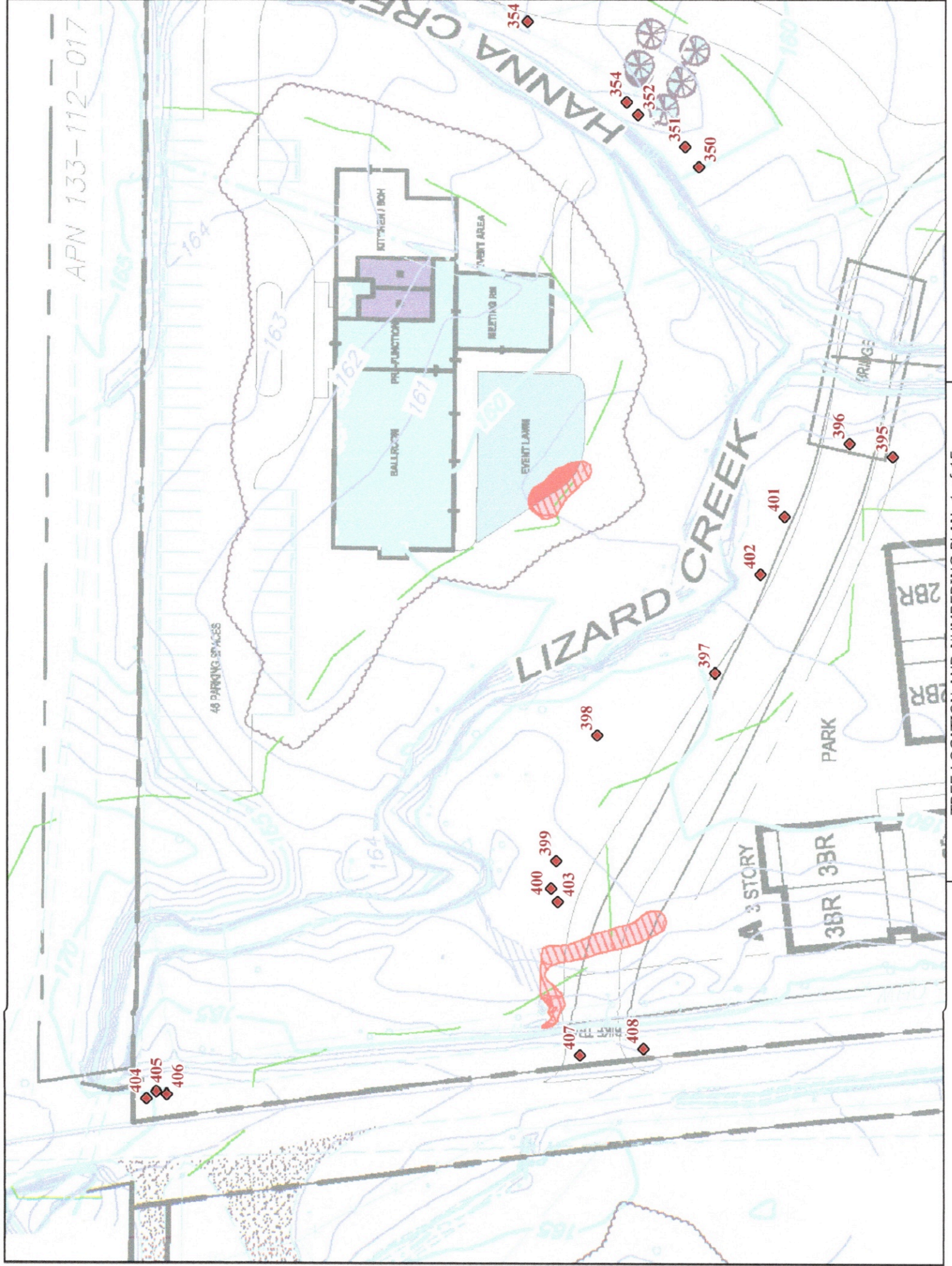
Any excavation within the defined TPZ will require that the tree be monitored on a monthly basis by the project arborist for the duration of construction and for one year beyond completion of construction. Monitoring may determine other mitigation measures that may be required to offset root loss or damage.

TREE LOCATION PLAN

TREE LOCATION AND NUMBERING PLAN
Hanna Project - 810 Agua Caliente Road - Sonoma



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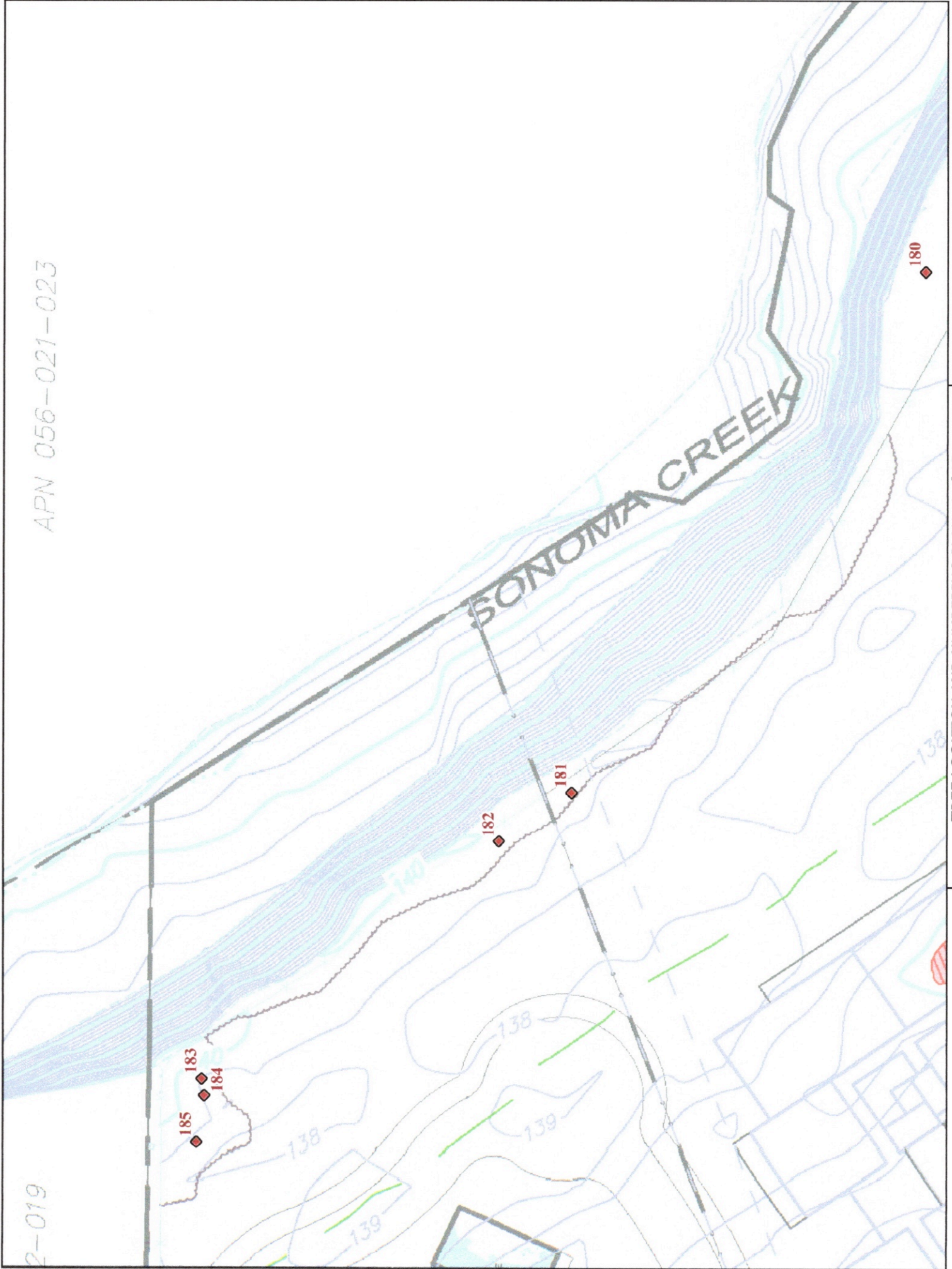
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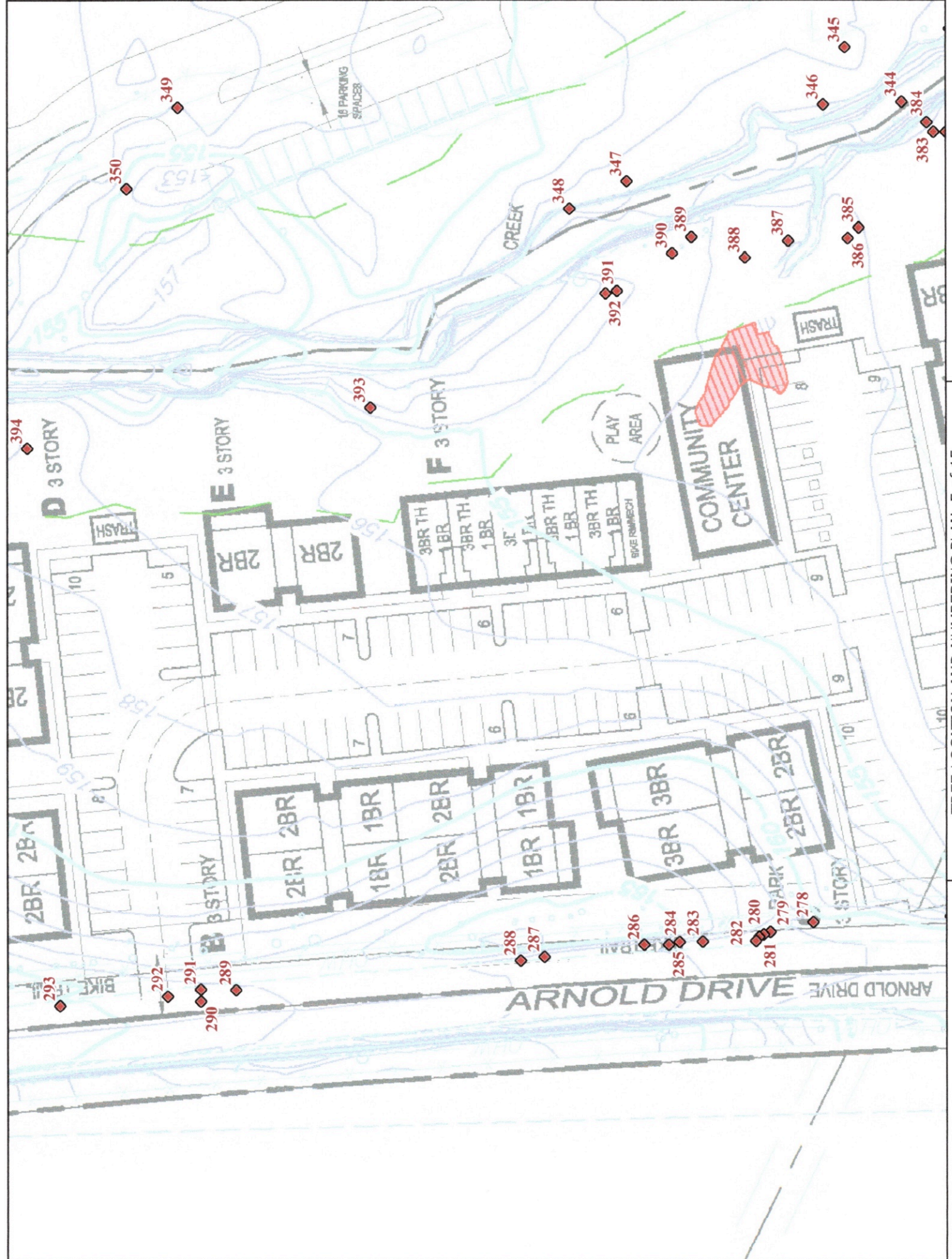
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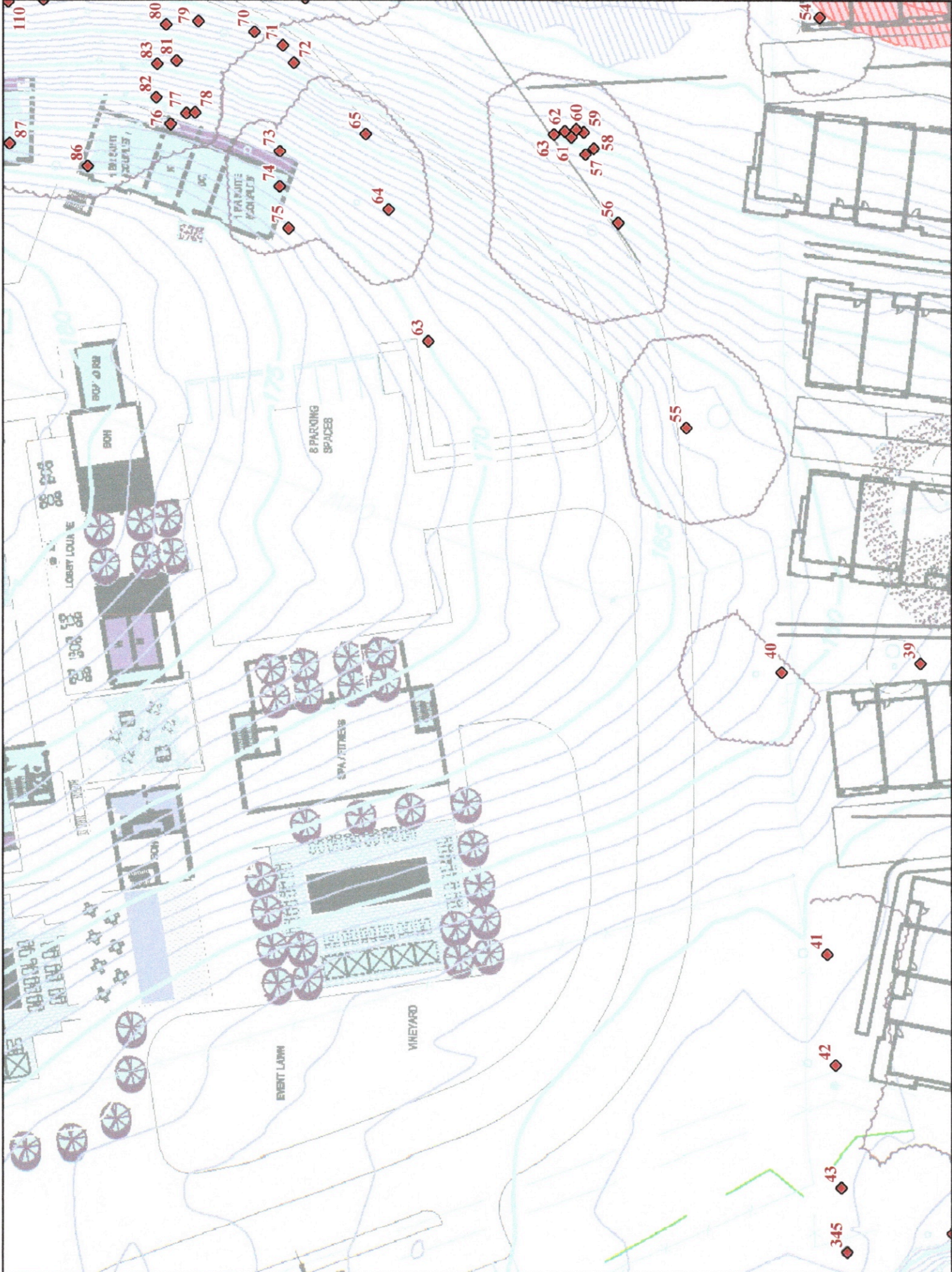
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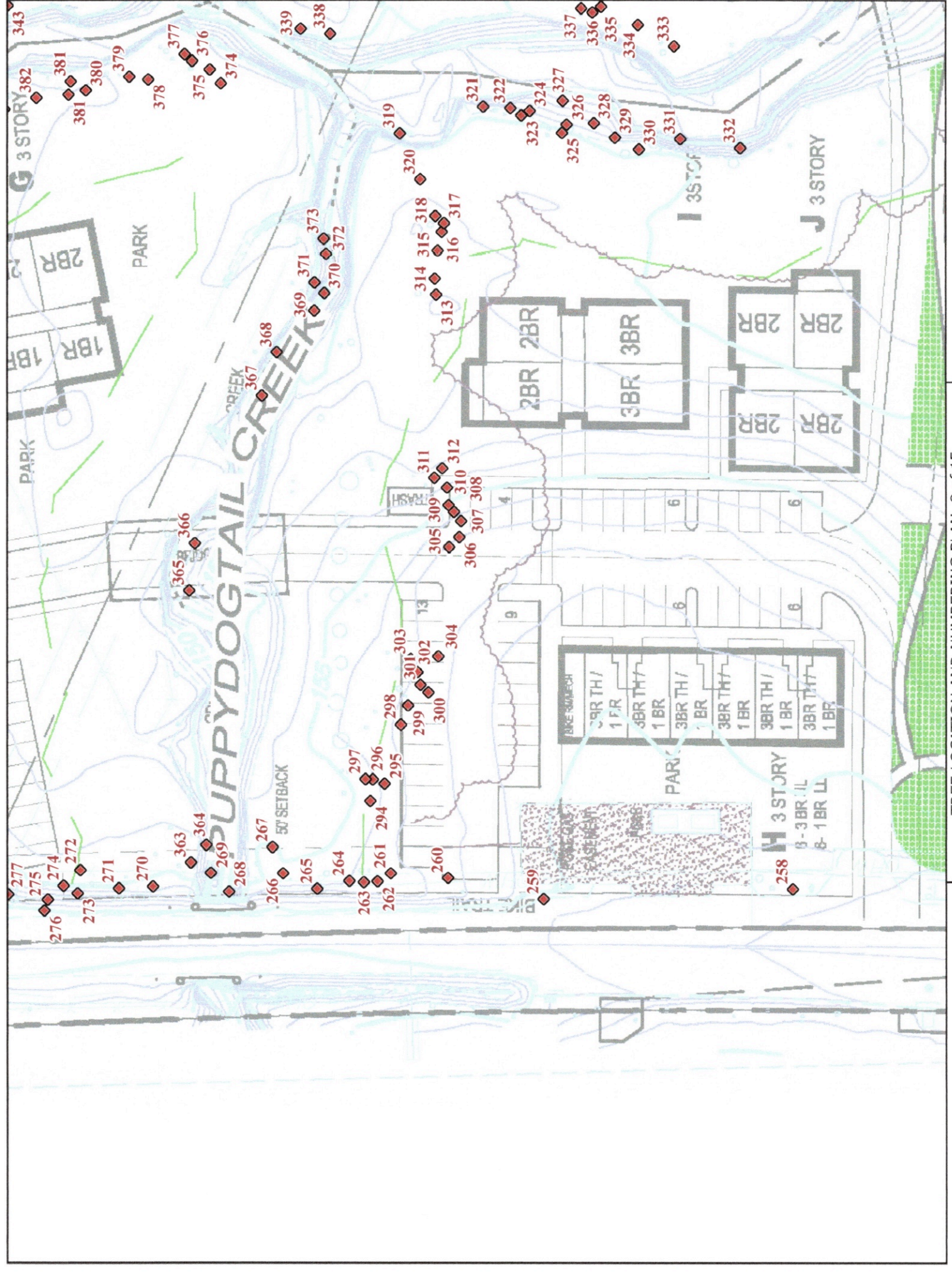
TREE LOCATION AND NUMBERING PLAN 5 of 15
 Hanna Project - 810 Agua Caliente Road - Sonoma



TREE LOCATION AND NUMBERING PLAN 6 of 15
 Hanna Project - 810 Agua Caliente Road - Sonoma



TREE LOCATION AND NUMBERING PLAN 7 of 15
Hanna Project - 810 Agua Caliente Road - Sonoma



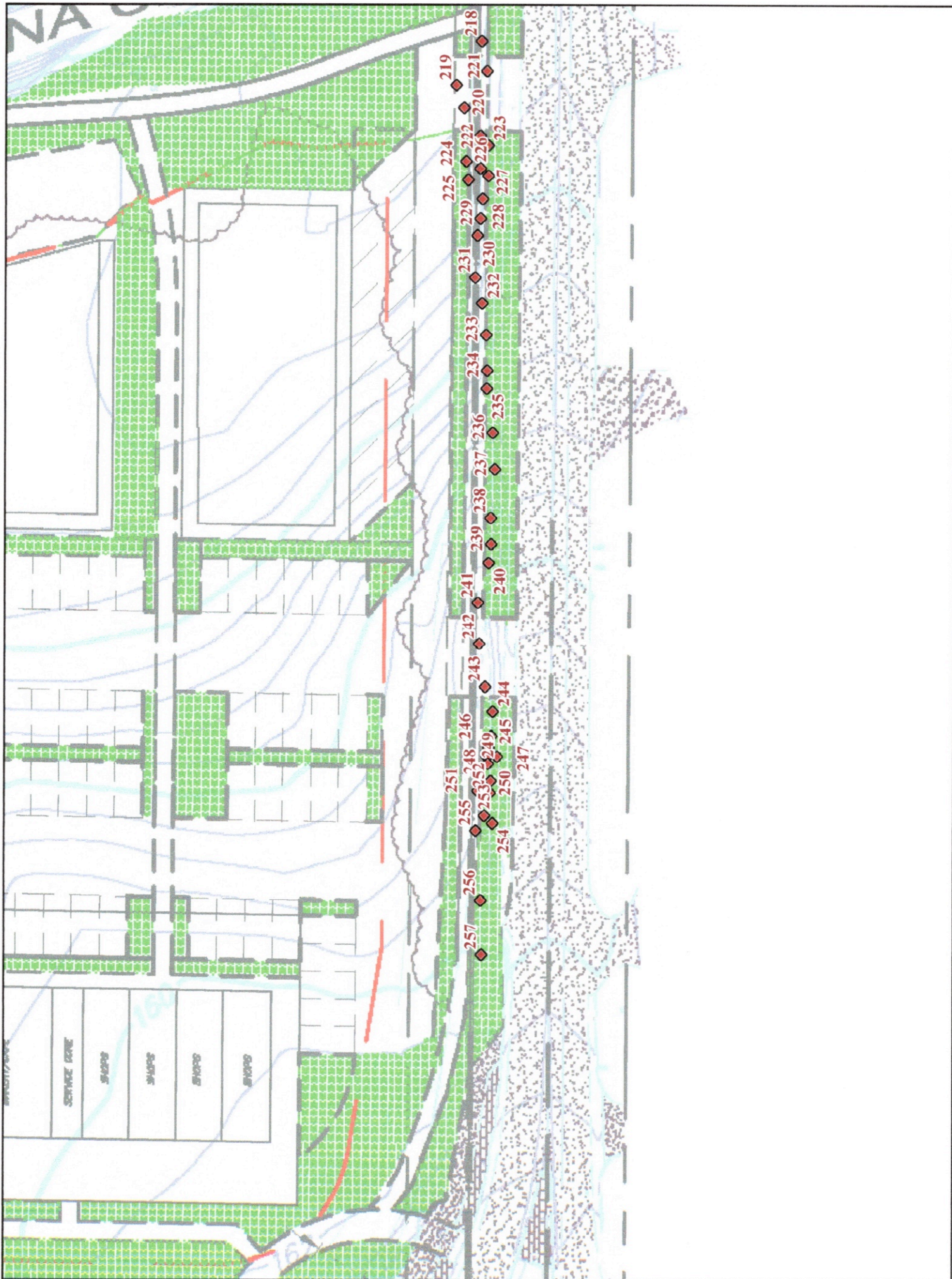
TREE LOCATION AND NUMBERING PLAN 8 of 15
 Hanna Project - 810 Agua Caliente Road - Sonoma



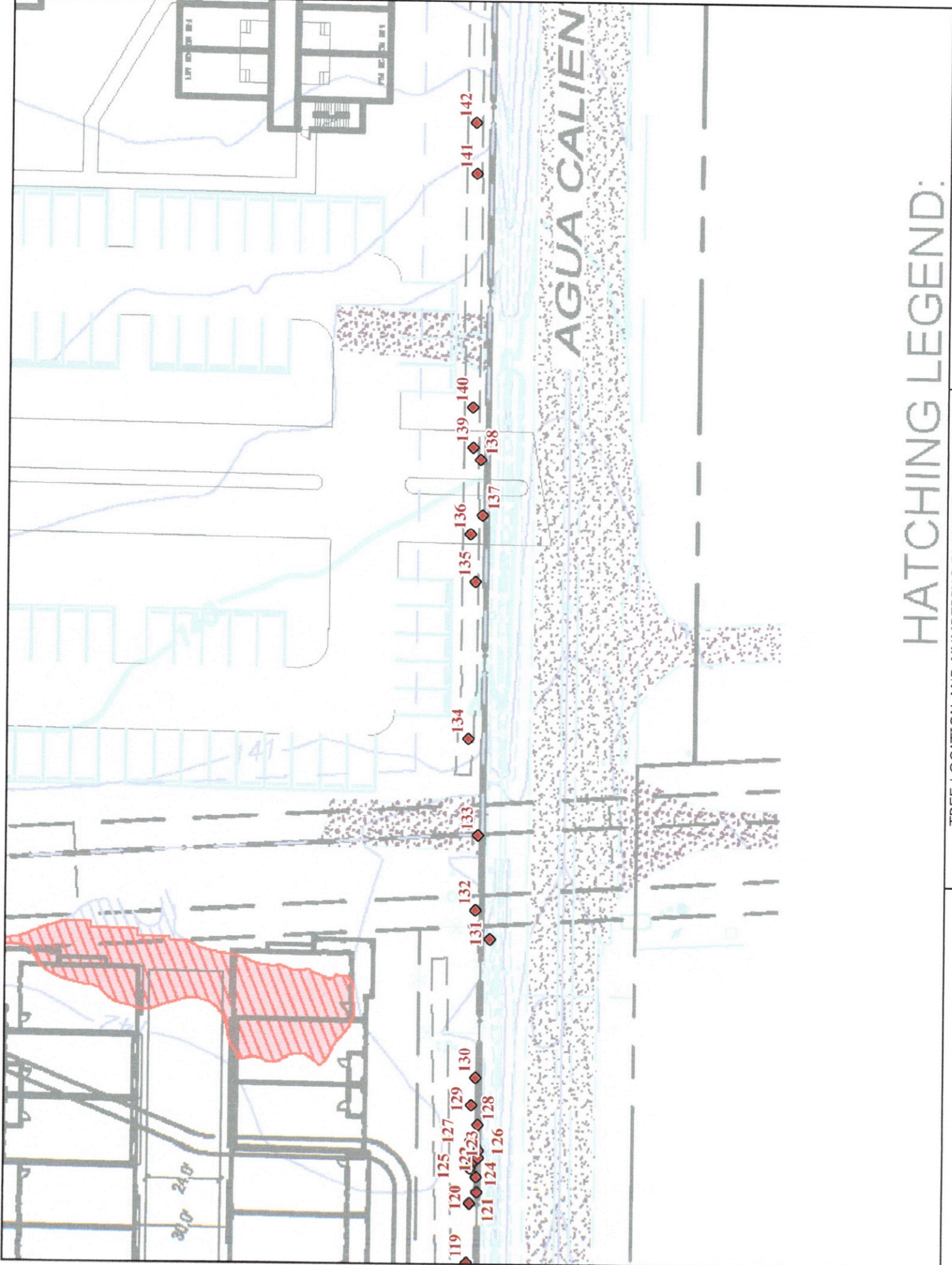
TREE LOCATION AND NUMBERING PLAN 9 of 15
 Hanna Project - 810 Agua Caliente Road - Sonoma



TREE LOCATION AND NUMBERING PLAN 10 of 15
Hanna Project - 810 Agua Caliente Road - Sonoma

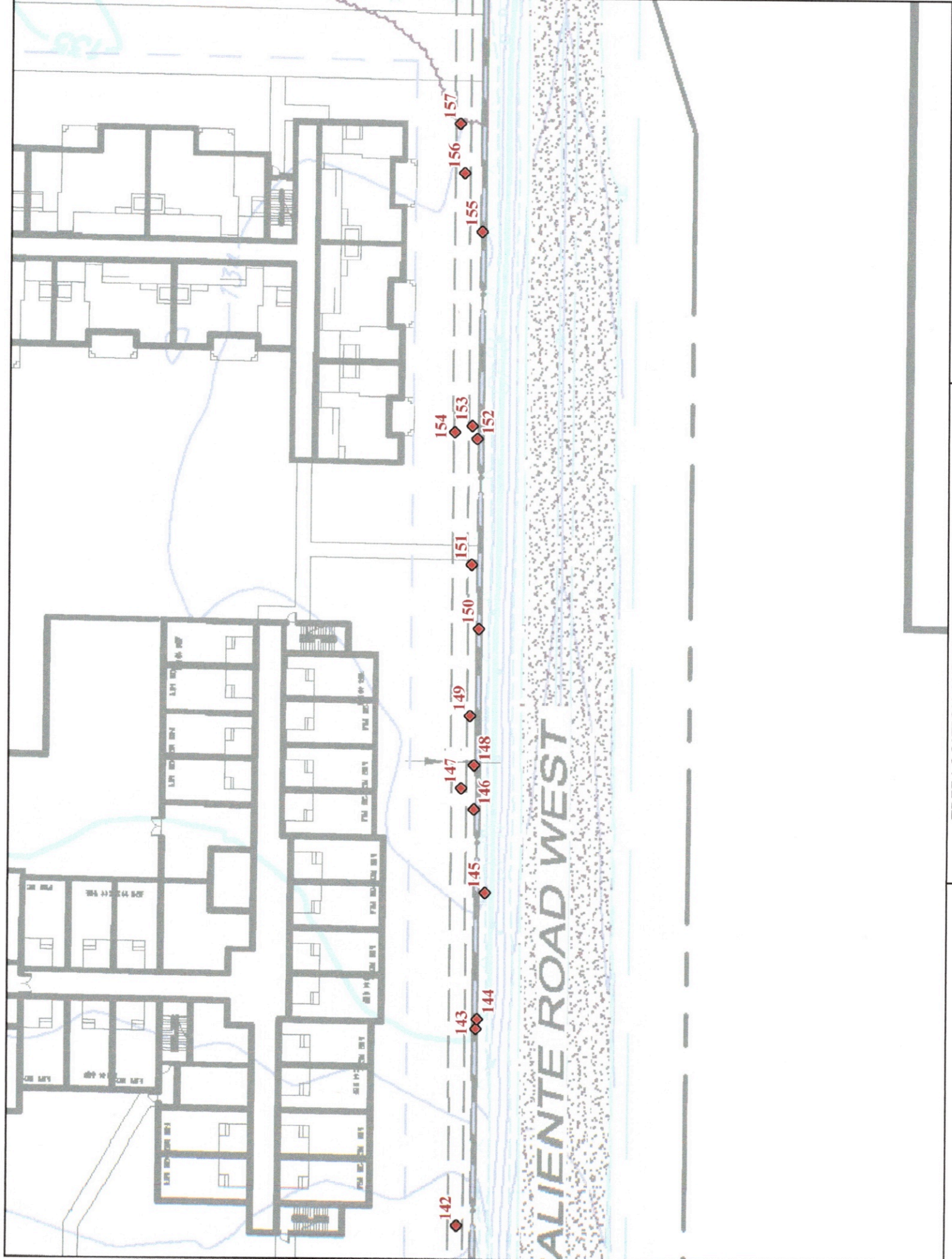






HATCHING LEGEND:

TREE LOCATION AND NUMBERING PLAN 13 of 15
 Hanna Project - 810 Agua Caliente Road - Sonoma

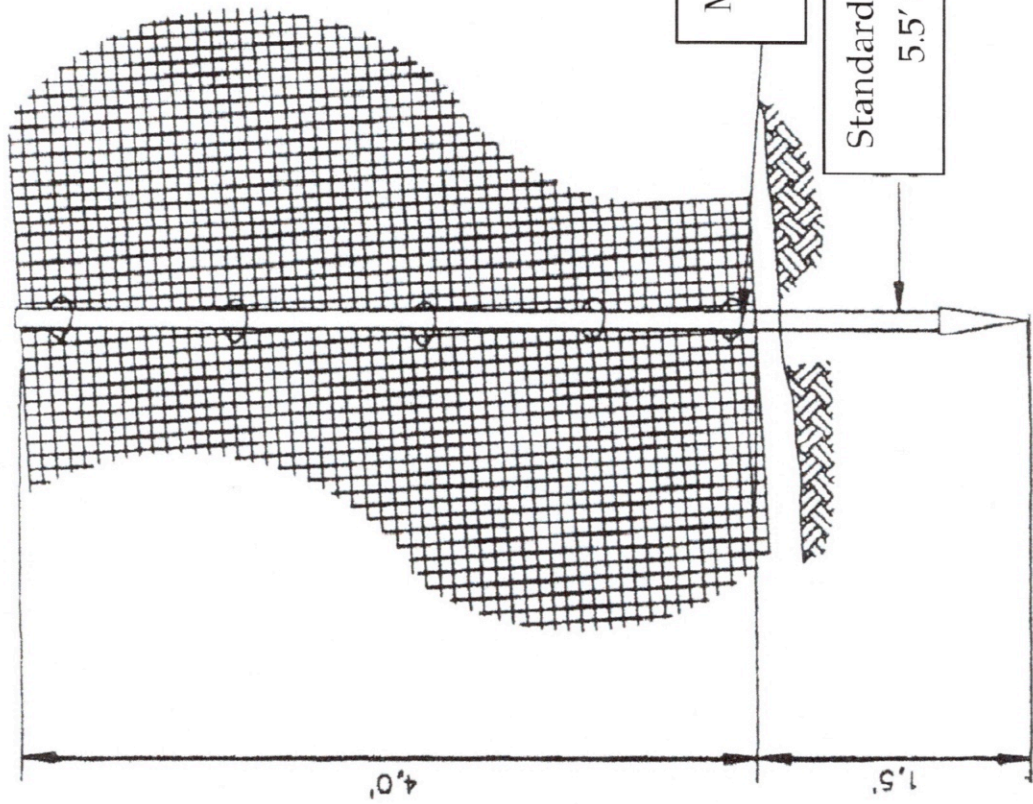


ALIENTE ROAD WEST



Sept

TREE FENCING DETAIL



NOTE

Metal Wire Tree Protection Fencing

Minimum 4-ft high steel welded wire fencing with mesh size 2-in x 4-in, or arborist approved wire fence substitute. Cut and shape as needed for sloping terrain

Metal tie wire, flip tie, or equivalent, 5 per post

Standard farm quality metal 'T' post, 5.5' tall, placed 8' on center

METAL WIRE TREE PROTECTION FENCING

TREE PRESERVATION GUIDELINES

TREE PRESERVATION GUIDELINES

810 Agua Caliente Road
Sonoma, CA

INTRODUCTION

Great care must be exercised when development is proposed in the vicinity of established trees of any type. The trees present at this site require specialized protection techniques during all construction activities to minimize negative impact on their long term health and vigor. The area immediately beneath and around canopy driplines is especially critical, and the specifications that follow are established to protect short and long term tree integrity. The purpose of this specification is therefore to define the procedures that must be followed during any and all phases of development in the immediate vicinity of designated protected trees.

Established, mature trees respond in a number of different ways to the disruption of their natural conditions. Change of grade within the root system area or near the root collar, damage to the bark of the trunk, soil compaction above the root system, root system reduction or damage, or alteration of summer soil moisture levels may individually or collectively cause physiological stress leading to tree decline and death. The individual impacts of these activities may cause trees to immediately exhibit symptoms and begin to decline, but more commonly the decline process takes many years, with symptoms appearing slowly and over a period of time. Trees may not begin to show obvious signs of decline from the negative impacts of construction until many years after construction is completed. It is not appropriate to wait for symptoms to appear, as this may be too late to correct the conditions at fault and to halt decline.

It is therefore critical to the long-term health of all protected trees that a defined protection program be established before beginning any construction activity where protected trees are found. Once incorporated at the design level, it is mandatory that developers, contractors, and construction personnel understand the critical importance of these guidelines, and the potential penalties that will be levied if they are not fully incorporated at every stage of development.

The following specifications are meant to be utilized by project managers and those supervising any construction in the vicinity of protected trees including grading contractors, underground contractors, all equipment operators, construction personnel, and landscape contractors. Questions which arise, or interpretation of specifications as they apply to specific site activities, must be referred to the project arborist as they occur.

Horticultural Associates
P.O. Box 1261
Glen Ellen, CA 95442
707-935-3911

TREE PROTECTION ZONE

1. The canopy dripline is illustrated on the Improvement Plans and represents the area around each tree, or group of trees, which must be protected at all times with tree protection fencing.
2. No encroachment into the dripline is allowed at any time without approval from the project arborist, and unauthorized entry may be subject to civil action and penalties.
3. The dripline will be designated by the project arborist at a location determined to be adequate to ensure long term tree viability and health. This is to occur prior to installation of fencing and in conjunction with the fencing contractor

TREE PROTECTION FENCING

1. Prior to initiating any construction activity on a construction project, including demolition or grading, temporary protective fencing shall be installed at each site tree, or group of trees. Fencing shall be located at the dripline designated by the project arborist and generally illustrated on the Improvement Plans.
2. 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, however.
3. Fencing shall be installed tightly between steel fence posts (standard quality farm 'T' posts work well) placed no more than 8 feet on center. Fencing shall be attached to each post at 5 locations with plastic electrical ties, metal tie wire, or flip ties. See attached fencing detail.
4. Fencing shall serve as a barrier to prevent encroachment of any type by construction activities, equipment, materials storage, or personnel.
5. All encroachment into the fenced dripline must be approved and supervised by the project arborist. Approved dripline encroachment may require

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

6. 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.
7. Fencing shall be upright and functional at all times from start to completion of project. Fencing shall remain in place and not be moved or removed until all construction activities at the site are completed.

TREE PRUNING AND TREATMENTS

1. 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.
2. All pruning shall be conducted in conformance with International Society of Arboriculture pruning standards, and all pruning must occur by, or under the direct supervision of, an arborist certified by the International Society of Arboriculture.

GRADING AND TRENCHING

1. 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.
2. The designated dripline 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.
3. Trenching should be routed around the dripline. Where trenching has been designated within the dripline, 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.

4. All roots greater than one inch in diameter shall be cleanly hand-cut as they are encountered in any trench or during any grading activity. The tearing of roots by equipment 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.
5. 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.
6. Retaining walls are effective at holding grade changes outside the area of the dripline 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 a dripline.
7. Grade changes outside the dripline, or those necessary in conjunction with retaining walls, shall be designed so that drainage water of any type or source is not 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.
8. Grade reduction within the designated dripline shall be generally discouraged, and where approved, shall be conducted only after careful consideration and coordination with the project arborist.
9. Foundations of all types within the dripline 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. Building footprints should generally be outside the dripline whenever possible.

DRAINAGE

The location and density of native trees may be directly associated with the presence of naturally occurring water, especially ephemeral waterways. Project design, especially drainage components, should take into consideration that these trees may begin a slow decline if this naturally present association with water is changed or eliminated.

TREE DAMAGE

1. 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.

2. 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.

3. Any tree that is significantly damaged and whose survivability is threatened, due to negligence by any contractor, shall be appraised using the Trunk Formula Method provided in the 9th Edition of the Guide For Plant Appraisal. This appraisal value will be the basis for any fines levied on the offending contractor.

MULCHING

1. Trees will benefit from the application of a 4 inch layer of chipped bark mulch over the soil surface within the Tree Protection Zone. 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, dyed bark, or chipped lumber will not function as beneficially. All trees that are expected to be

impacted in any way by project activities shall have mulch placed prior to the installation of protection fencing.

2. Mulch should be generated from existing site trees that are removed or pruned as part of the project. Much brought onto the site from an outside source must be from trees that are verified to be free of the Sudden Oak Death pathogen *Phytophthora ramorum*.

ISA TREE PRUNING STANDARDS

WESTERN CHAPTER
ISA

PRUNING STANDARDS

Purpose:

Trees and other woody plants respond in specific and predictable ways to pruning and other maintenance practices. Careful study of these responses has led to pruning practices which best preserve and enhance the beauty, structural integrity, and functional value of trees.

In an effort to promote practices which encourage the preservation of tree structure and health, the W.C. ISA Certification Committee has established the following Standards of Pruning for Certified Arborists. The Standards are presented as working guidelines, recognizing that trees are individually unique in form and structure, and that their pruning needs may not always fit strict rules. The Certified Arborist must take responsibility for special pruning practices that vary greatly from these Standards.

I. Pruning Techniques

- A. A thinning cut removes a branch at its point of attachment or shortens it to a lateral large enough to assume the terminal role. Thinning opens up a tree, reduces weight on heavy limbs, can reduce a tree's height, distributes ensuing invigoration throughout a tree and helps retain the tree's natural shape. Thinning cuts are therefore preferred in tree pruning.

When shortening a branch or leader, the lateral to which it is cut should be at least one-half the diameter of the cut being made. Removal of a branch or leader back to a sufficiently large lateral is often called "drop crotching."

- B. A heading cut removes a branch to a stub, a bud or a lateral branch not large enough to assume the terminal role. Heading cuts should seldom be used because vigorous, weakly attached upright sprouts are forced just below such cuts, and the tree's natural form is altered. In some situations, branch stubs die or produce only weak sprouts.

- C. When removing a live branch, pruning cuts should be made in branch tissue just outside the branch bark ridge and collar, which are trunk tissue. *(Figure 1)* If no collar is visible, the angle of the cut should approximate the angle formed by the branch bark ridge and the trunk. *(Figure 2)*.
- D. When removing a dead branch, the final cut should be made outside the collar of live callus tissue. If the collar has grown out along the branch stub, only the dead stub should be removed, the live collar should remain intact, and uninjured. *(Figure 3)*
- E. When reducing the length of a branch or the height of a leader, the final cut should be made just beyond (without violating) the branch bark ridge of the branch being cut to. The cut should approximately bisect the angle formed by the branch bark ridge and an imaginary line perpendicular to the trunk or branch cut. *(Figure 4)*
- F. A goal of structural pruning is to maintain the size of lateral branches to less than three-fourths the diameter of the parent branch or trunk. If the branch is codominant or close to the size of the parent branch, thin the branch's foliage by 15% to 25%, particularly near the terminal. Thin the parent branch less, if at all. This will allow the parent branch to grow at a faster rate, will reduce the weight of the lateral branch, slow its total growth, and develop a stronger branch attachment. If this does not appear appropriate, the branch should be completely removed or shortened to a large lateral. *(Figure 5)*
- G. On large-growing trees, except whorl-branching conifers, branches that are more than one-third the diameter of the trunk should be spaced along the trunk at least 18 inches apart, on center. If this is not possible because of the present size of the tree, such branches should have their foliage thinned 15% to 25%, particularly near their terminals. *(Figure 6)*
- H. Pruning cuts should be clean and smooth with the bark at the edge of the cut firmly attached to the wood.
- I. Large or heavy branches that cannot be thrown clear, should be lowered on ropes to prevent injury to the tree or other property.
- J. Wound dressings and tree paints have not been shown to be effective in preventing or reducing decay. They are therefore not recommended for routine use when pruning.

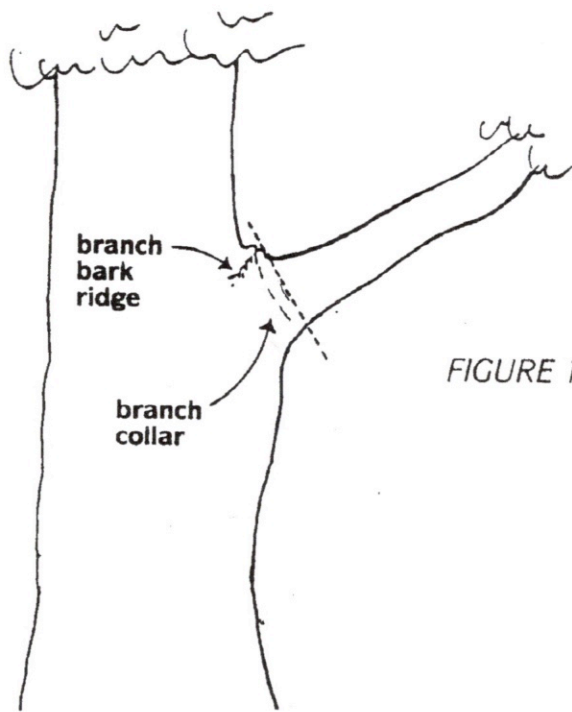


FIGURE 1. When removing a branch, the final cut should be just outside the branch bark ridge and collar.

FIGURE 2. In removing a limb without a branch collar, the angle of the final cut to the branch bark ridge should approximate the angle the branch bark ridge forms with the limb. Angle AB should equal Angle BC.

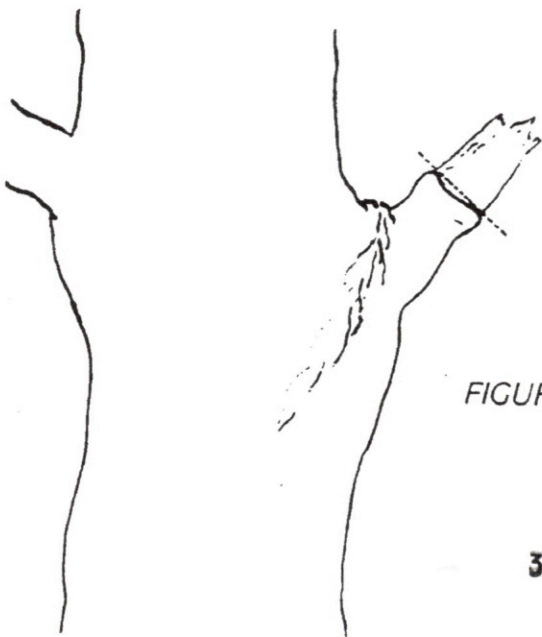
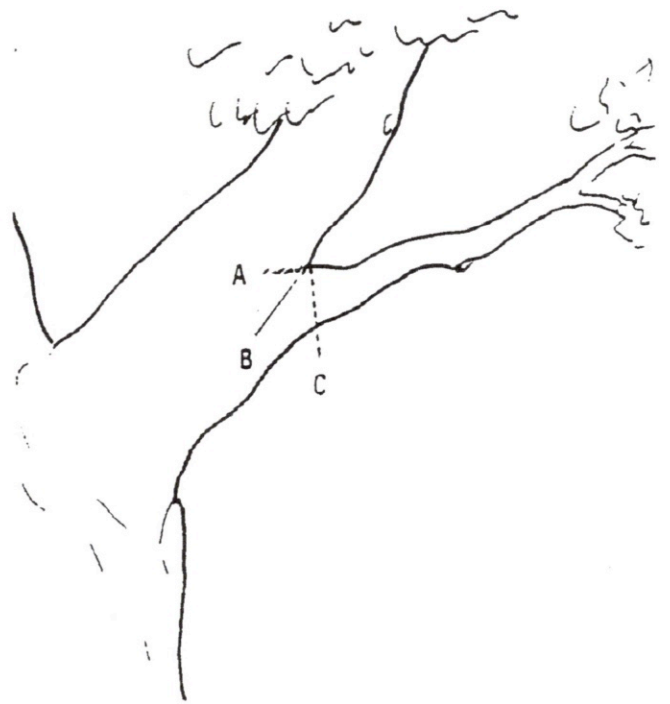


FIGURE 3. When removing a dead branch, cut outside the callus tissue that has begun to form around the branch.

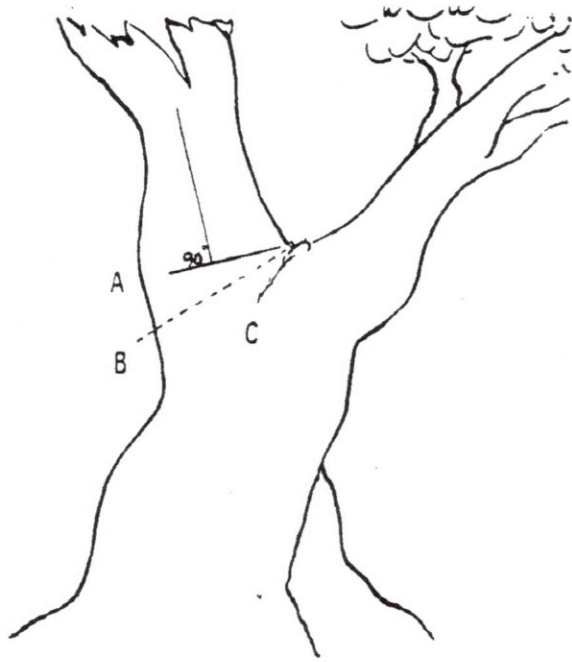
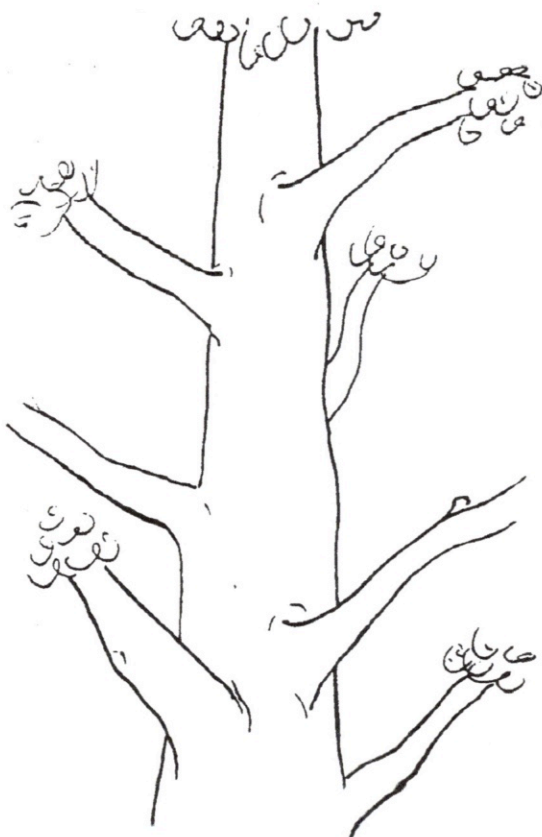


FIGURE 4. In removing the end of a limb to a large lateral branch, the final cut is made along a line that bisects the angle between the branch bark ridge and a line perpendicular to the limb being removed. Angle AB is equal to Angle BC.

FIGURE 5. A tree with limbs tending to be equal-sized, or codominant. Limbs marked B are greater than $\frac{3}{4}$ the size of the parent limb A. Thin the foliage of branch B more than branch A to slow its growth and develop a stronger branch attachment.



FIGURE 6. Major branches should be well spaced both along and around the stem.



II. Types of Pruning — Mature Trees

A. CROWN CLEANING

Crown cleaning or cleaning out is the removal of dead, dying, diseased, crowded, weakly attached, and low-vigor branches and watersprouts from a tree crown.

B. CROWN THINNING

Crown thinning includes crown cleaning and the selective removal of branches to increase light penetration and air movement into the crown. Increased light and air stimulates and maintains interior foliage, which in turn improves branch taper and strength. Thinning reduces the wind-sail effect of the crown and the weight of heavy limbs. Thinning the crown can emphasize the structural beauty of trunk and branches as well as improve the growth of plants beneath the tree by increasing light penetration. When thinning the crown of mature trees, seldom should more than one-third of the live foliage be removed.

At least one-half of the foliage should be on branches that arise in the lower two-thirds of the trees. Likewise, when thinning laterals from a limb, an effort should be made to retain inner lateral branches and leave the same distribution of foliage along the branch. Trees and branches so pruned will have stress more evenly distributed throughout the tree or along a branch.

An effect known as "lion's-tailing" results from pruning out the inside lateral branches. Lion's-tailing, by removing all the inner foliage, displaces the weight to the ends of the branches and may result in sunburned branches, watersprouts, weakened branch structure and limb breakage.

C. CROWN REDUCTION

Crown reduction is used to reduce the height and/or spread of a tree. Thinning cuts are most effective in maintaining the structural integrity and natural form of a tree and in delaying the time when it will need to be pruned again. The lateral to which a branch or trunk is cut should be at least one-half the diameter of the cut being made.

D. CROWN RESTORATION

Crown restoration can improve the structure and appearance of trees that have been topped or severely pruned using heading cuts. One to three sprouts on main branch stubs should be selected to reform a more natural appearing crown. Selected vigorous sprouts may need to be thinned to a lateral, or even headed, to control length growth in order to ensure adequate attachment for the size of the sprout. Restoration may require several prunings over a number of years.

II. Types of Pruning — Mature Trees (*continued*)

E. CROWN RAISING

Crown raising removes the lower branches of a tree in order to provide clearance for buildings, vehicles, pedestrians, and vistas. It is important that a tree have at least one-half of its foliage on branches that originate in the lower two-thirds of its crown to ensure a well-formed, tapered structure and to uniformly distribute stress within a tree.

When pruning for view, it is preferable to develop "windows" through the foliage of the tree, rather than to severely raise or reduce the crown.

III. Size of Pruning Cuts

Each of the Pruning Techniques (Section I) and Types of Pruning (Section II) can be done to different levels of detail or refinement. The removal of many small branches rather than a few large branches will require more time, but will produce a less-pruned appearance, will force fewer watersprouts and will help to maintain the vitality and structure of the tree. Designating the maximum size (base diameter) that any occasional undesirable branch may be left within the tree crown, such as ½', 1' or 2' branch diameter, will establish the degree of pruning desired.

IV. Climbing Techniques

- A. Climbing and pruning practices should not injure the tree except for the pruning cuts.
- B. Climbing spurs or gaffs should not be used when pruning a tree, unless the branches are more than throw-line distance apart. In such cases, the spurs should be removed once the climber is tied in.
- C. Spurs may be used to reach an injured climber and when removing a tree.
- D. Rope injury to thin barked trees from loading out heavy limbs should be avoided by installing a block in the tree to carry the load. This technique may also be used to reduce injury to a crotch from the climber's line.

