

ARBORIST TREE ASSESSMENT REPORT

Laurel Way Joint Venture
Redwood City, California

Prepared for:

Mr. John Ward, Principal

John Ward and Associates
792 Willborough Place
Burlingame, CA 94010

Prepared by:

Ralph Osterling Consultants, Inc.

1650 Borel Place
Suite 204
San Mateo, California 94402
(650) 573-8733 Office
(650) 345-7890 FAX

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Introduction

Assignment

At the request of Mr. John Ward, representing the Laurel Way Joint Venture; Ralph Osterling Consultants, Inc. (ROC) performed an assessment of trees located approximately within or adjacent to proposed property and roadway improvements. Recommendations were requested for tree protection during construction and are included with this tree assessment report.

This report is limited to the information provided to ROC by the client. Changes to the Conceptual Development Plan may require revision of this report or of the attached Tree Protection Plan.

Survey Methods

Mr. George Pichel, an ISA Certified Arborist (ROC Arborist), performed a visual assessment of the trees from the ground. No samples were collected for laboratory analysis nor were the trees climbed as neither was deemed to be necessary. The trees were affixed with numbered aluminum tags for reference purposes in the report and tree locations on the Tree Location Map.

The trunk or largest trunk (if the tree is multi-stemmed) diameter of assessed trees was measured at a point between six inches and 36 inches above ground level as specified in the Tree Preservation Ordinance, Chapter 35 section 35.1 (A) of the Redwood City Municipal Code (RCMC). All trees having one trunk six inches or greater in diameter were affixed with a numerical aluminum tag, measured and rated for overall condition.

According to the RCMC (Section 35.3) a permit is required for cutting or removal of any tree with one trunk 38 inches or greater in circumference. The assessed trees recorded in Table 2 – Tree Condition and Status Chart have at least on trunk that is 38 inches or greater in circumference.

The ROC Arborist assessed those trees located within or adjacent to the proposed property and roadway improvements. Additional trees were located by the arborist which he visually plotted onto the Tree Location Map. Of the 247 trees measured, 158 trees were determined to have at least one trunk 38 inches or greater in trunk circumference and were recorded in this report as required by the City.

All field data was collected by Mr. George Pichel, ROC Arborist, and the final report was prepared by Mr. Walter Fujii, also of ROC.

Observations and Discussion

The site was initially visited by the ROC Arborist on August 3, 2006. Subsequent visits were necessary to capture additional trees and to verify the trunk circumference of trees assessed earlier.

This area as described by the Arborist is relatively undisturbed and accessed by an unimproved road. A heavily vegetated creek runs through a portion of the property. The heavy vegetation prevented the trees to be accurately located by the land surveyor. (Refer to Appendix 1.) However, the ROC Arborist tagged and assessed trees as far as possible in this area.

The 158 trees assessed for this report include the following species: 81 coast live oak, 46 bay laurel, 28 valley oak, 2 Monterey pine and 1 willow. All assessed trees were considered indigenous to this region. Please refer to Table 1 – Tree Species Summary Chart, that lists the assessed tree species, population, and the percentage each species contributes to the site.

Tree data on individual trees are contained in Table 2 – Tree Condition and Status Chart. Tag number, tree species, trunk size, overall condition rating and anticipated construction impacts are recorded for each tree.

Conclusions

This Tree Assessment Report provides an overview of expected tree impacts based on the Conceptual Development Plan, DV-1 sheet 2 in Appendix 1 of this report. Tree protection measures described in the Tree Protection Plan are to be assessed in the field prior to the commencement of construction activities.

An accurate assessment of tree impacts can be prepared when final grading, improvement, and construction plans are available.

Recommendations

1. Final grading, improvement and construction plans should be reviewed by a qualified Arborist prior to the commencement of construction activities.
2. If necessary, the Tree Protection Plan should be updated or revised based on the recommendations of the qualified Arborist.
3. Anticipated Tree Impacts, indicated on Table 2 – Tree Condition and Status Chart are to be considered for conceptual purposes only pending the preparation of final grading, improvement and construction plans.
4. Those trees rated as poor to very poor in overall condition and located closely adjacent to areas of human activity should be considered for removal prior to the commencement of construction activities regardless of anticipated construction impacts. A qualified arborist should make the necessary determinations.
5. Authorization is required from the City of Redwood City prior to scheduling the removal or cutting of trees from the property.

6. Other conditions from the City may apply and it is the responsibility of the applicant to understand and fulfill those conditions.

7. When properly updated and implemented, the attached Tree Protection Plan is expected to minimize construction impacts to protected trees.

TABLE 1

Tree Species Summary Chart

TABLE 1
 Tree Species Summary Chart
Laurel Way Joint Venture
 Redwood City, California

SPECIES by common and (botanical) name	COUNT	PERCENTAGE OF ASSESSED TREES
bay laurel (Umbellularia californica)	46	29%
coast live oak (Quercus agrifolia)	81	51%
Monterey Pine (Pinus radiata)	2	1%
valley oak (Quercus lobata)	28	18%
willow (Salix spp.)	1	1%
*TOTAL ASSESSED TREES	158	100%

* / Trees 38 inches or greater in circumference when measured between 6 inches and 36 inches above ground level.

TABLE 2

Tree Condition and Status Chart

TABLE 2
TREE CONDITION and STATUS CHART
Laurel Way Joint Venture
Redwood City, California

TREE NO.	SPECIES	LARGEST TRUNK DIAMETER	LARGEST TRUNK CIRCUMFERENCE	CONDITION	INDIGENOUS TREE	ANTICIPATED CONSTRUCTION IMPACTS ¹	OBSERVATIONS ²
57	bay laurel (Umbellularia californica)	19	60	Average	Yes	LOW	
58	bay laurel (Umbellularia californica)	13	41	Average	Yes	SEVERE	
59	coast live oak (Quercus agrifolia)	16	50	Average	Yes	LOW	
60	bay laurel (Umbellularia californica)	14	44	Average	Yes	LOW	
61	coast live oak (Quercus agrifolia)	24	75	Average	Yes	LOW	
62	coast live oak (Quercus agrifolia)	12	38	Very Poor	Yes	LOW	
67	coast live oak (Quercus agrifolia)	12	38	Very Poor	Yes	SEVERE	
68	coast live oak (Quercus agrifolia)	17	53	Average	Yes	SEVERE	
69	coast live oak (Quercus agrifolia)	13	41	Poor	Yes	SEVERE	
70	coast live oak (Quercus agrifolia)	13	41	Poor	Yes	MODERATE	
73	bay laurel (Umbellularia californica)	12	38	Very Poor	Yes	LOW	In creek.
179	coast live oak (Quercus agrifolia)	24	75	Fair	Yes	SEVERE	
180	bay laurel (Umbellularia californica)	22	69	Fair	Yes	SEVERE	
181	valley oak (Quercus lobata)	23	72	Fair	Yes	SEVERE	
182	coast live oak (Quercus agrifolia)	26	82	Fair	Yes	SEVERE	
183	coast live oak (Quercus agrifolia)	23	72	Very Poor	Yes	SEVERE	Trunk lean.
184	coast live oak (Quercus agrifolia)	25	79	Very Poor	Yes	MODERATE	Trunk lean.
185	coast live oak (Quercus agrifolia)	41	129	Very Poor	Yes	SEVERE	Visible decay.
186	valley oak (Quercus lobata)	15	47	Fair	Yes	MODERATE	
187	valley oak (Quercus lobata)	12	38	Fair	Yes	MODERATE	
189	coast live oak (Quercus agrifolia)	28	88	Very Poor	Yes	MODERATE	Visible decay.
190	coast live oak (Quercus agrifolia)	18	57	Fair	Yes	MODERATE	

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191	coast live oak (<i>Quercus agrifolia</i>)	12	38	Very Poor	Yes	SEVERE	Visible decay.
192	valley oak (<i>Quercus lobata</i>)	27	85	Fair	Yes	LOW	
193	coast live oak (<i>Quercus agrifolia</i>)	13	41	Fair	Yes	LOW	
195	coast live oak (<i>Quercus agrifolia</i>)	16	50	Fair	Yes	LOW	
199	valley oak (<i>Quercus lobata</i>)	24	75	Fair	Yes	SEVERE	
200	coast live oak (<i>Quercus agrifolia</i>)	14	44	Fair	Yes	MODERATE	
201	valley oak (<i>Quercus lobata</i>)	19	60	Fair	Yes	SEVERE	
202	Monterey Pine (<i>Pinus radiata</i>)	30	94	Very Poor	Yes	MODERATE	Trunk lean.
203	Monterey Pine (<i>Pinus radiata</i>)	21	66	Fair	Yes	MODERATE	
204	valley oak (<i>Quercus lobata</i>)	15	47	Good	Yes	MODERATE	
205	coast live oak (<i>Quercus agrifolia</i>)	17	53	Fair	Yes	SEVERE	
206	coast live oak (<i>Quercus agrifolia</i>)	12	38	Fair	Yes	SEVERE	
209	coast live oak (<i>Quercus agrifolia</i>)	20	63	Fair	Yes	SEVERE	
211	coast live oak (<i>Quercus agrifolia</i>)	13	41	Fair	Yes	SEVERE	
217	valley oak (<i>Quercus lobata</i>)	12	38	Fair	Yes	SEVERE	
218	bay laurel (<i>Umbellularia californica</i>)	14	44	Fair	Yes	MODERATE	In creek
219	bay laurel (<i>Umbellularia californica</i>)	14	44	Fair	Yes	MODERATE	In creek.
220	bay laurel (<i>Umbellularia californica</i>)	15	47	Very Poor	Yes	MODERATE	In creek. Trunk lean.
221	coast live oak (<i>Quercus agrifolia</i>)	22	69	Fair	Yes	SEVERE	In creek.
222	bay laurel (<i>Umbellularia californica</i>)	18	57	Very Poor	Yes	SEVERE	In creek. Trunk lean.
223	bay laurel (<i>Umbellularia californica</i>)	18	57	Fair	Yes	SEVERE	
224	coast live oak (<i>Quercus agrifolia</i>)	20	63	Poor	Yes	SEVERE	Trunk lean.

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225	coast live oak (Quercus agrifolia)	22	69	Very Poor	Yes	LOW	Trunk lean.
226	bay laurel (Umbellularia californica)	16	50	Fair	Yes	LOW	In creek.
228	coast live oak (Quercus agrifolia)	13	41	Fair	Yes	LOW	
229	coast live oak (Quercus agrifolia)	15	47	Very Poor	Yes	LOW	In creek. Trunk lean.
232	valley oak (Quercus lobata)	26	82	Good	Yes	SEVERE	
234	bay laurel (Umbellularia californica)	12	38	Poor	Yes	LOW	Trunk lean.
235	coast live oak (Quercus agrifolia)	12	38	Poor	Yes	LOW	Trunk lean.
236	bay laurel (Umbellularia californica)	12	38	Fair	Yes	LOW	
237	bay laurel (Umbellularia californica)	17	53	Fair	Yes	MODERATE	
238	coast live oak (Quercus agrifolia)	13	41	Fair	Yes	SEVERE	
239	coast live oak (Quercus agrifolia)	18	57	Very Poor	Yes	LOW	Trunk lean and visible decay.
244	coast live oak (Quercus agrifolia)	13	41	Very Poor	Yes	SEVERE	Poor branch and /or limb development with overall poor health.
245	bay laurel (Umbellularia californica)	14	44	Fair	Yes	MODERATE	
248	coast live oak (Quercus agrifolia)	12	38	Very Poor	Yes	MODERATE	Poor branch and /or limb development.
249	coast live oak (Quercus agrifolia)	16	50	Very Poor	Yes	SEVERE	Poor branch and /or limb development.
250	bay laurel (Umbellularia californica)	14	44	Very Poor	Yes	SEVERE	Poor branch and /or limb development.
252	coast live oak (Quercus agrifolia)	15	47	Very Poor	Yes	SEVERE	Visible decay and poor branch and /or limb development.
253	bay laurel (Umbellularia californica)	12	38	Very Poor	Yes	SEVERE	Visible decay and poor branch and /or limb development.
254	coast live oak (Quercus agrifolia)	12	38	Very Poor	Yes	SEVERE	Poor branch and /or limb development.
256	coast live oak (Quercus agrifolia)	16	50	Fair	Yes	LOW	
257	bay laurel (Umbellularia californica)	15	47	Very Poor	Yes	LOW	In creek. Visible decay.
258	coast live oak (Quercus agrifolia)	21	66	Fair	Yes	LOW	In creek.

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259	bay laurel (Umbellularia californica)	23	72	Fair	Yes	LOW	
260	coast live oak (Quercus agrifolia)	17	53	Very Poor	Yes	LOW	Visible decay.
261	bay laurel (Umbellularia californica)	14	44	Fair	Yes	LOW	
262	coast live oak (Quercus agrifolia)	16	50	Very Poor	Yes	LOW	In creek. Visible decay. Tree is in the creek.
265	bay laurel (Umbellularia californica)	16	50	Fair	Yes	LOW	In creek.
268	coast live oak (Quercus agrifolia)	22	69	Fair	Yes	LOW	In creek.
269	bay laurel (Umbellularia californica)	14	44	Fair	Yes	LOW	In creek.
270	bay laurel (Umbellularia californica)	14	44	Fair	Yes	LOW	In creek.
271	bay laurel (Umbellularia californica)	15	47	Fair	Yes	LOW	In creek.
272	bay laurel (Umbellularia californica)	15	47	Fair	Yes	LOW	In creek.
273	coast live oak (Quercus agrifolia)	13	41	Fair	Yes	LOW	
274	valley oak (Quercus lobata)	22	69	Fair	Yes	LOW	
277	bay laurel (Umbellularia californica)	20	63	Very Poor	Yes	LOW	In creek.
278	bay laurel (Umbellularia californica)	16	50	Very Poor	Yes	LOW	Trunk lean.
279	coast live oak (Quercus agrifolia)	12	38	Fair	Yes	LOW	
280	bay laurel (Umbellularia californica)	14	44	Very Poor	Yes	SEVERE	Visible decay.
281	bay laurel (Umbellularia californica)	18	57	Fair	Yes	MODERATE	
282	valley oak (Quercus lobata)	16	50	Fair	Yes	MODERATE	
283	coast live oak (Quercus agrifolia)	18	57	Very Poor	Yes	LOW	Visible decay.
284	bay laurel (Umbellularia californica)	14	44	Very Poor	Yes	LOW	Visible decay.
285	coast live oak (Quercus agrifolia)	17	53	Poor	Yes	LOW	Poor branch and /or limb development.
287	valley oak (Quercus lobata)	32	101	Good	Yes	MODERATE	

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291	valley oak (<i>Quercus lobata</i>)	13	41	Very Poor	Yes	MODERATE	Overall poor health.
293	coast live oak (<i>Quercus agrifolia</i>)	18	57	Very Poor	Yes	SEVERE	Trunk lean.
294	valley oak (<i>Quercus lobata</i>)	23	72	Good	Yes	LOW	
295	bay laurel (<i>Umbellularia californica</i>)	13	41	Fair	Yes	LOW	
297	valley oak (<i>Quercus lobata</i>)	29	91	Good	Yes	LOW	
298	coast live oak (<i>Quercus agrifolia</i>)	12	38	Very Poor	Yes	LOW	Trunk lean.
299	coast live oak (<i>Quercus agrifolia</i>)	19	60	Poor	Yes	LOW	Trunk lean and visible decay and poor branch and/or limb
300	valley oak (<i>Quercus lobata</i>)	13	41	Average	Yes	LOW	
402	bay laurel (<i>Umbellularia californica</i>)	12	38	Very Poor	Yes	LOW	Trunk lean and visible decay.
403	valley oak (<i>Quercus lobata</i>)	16	50	Good	Yes	LOW	
405	coast live oak (<i>Quercus agrifolia</i>)	16	50	Very Poor	Yes	LOW	Trunk lean.
406	valley oak (<i>Quercus lobata</i>)	23	72	Fair	Yes	MODERATE	
415	valley oak (<i>Quercus lobata</i>)	16	50	Fair	Yes	LOW	
418	valley oak (<i>Quercus lobata</i>)	20	63	Fair	Yes	LOW	
421	valley oak (<i>Quercus lobata</i>)	14	44	Fair	Yes	LOW	
423	coast live oak (<i>Quercus agrifolia</i>)	15	47	Very Poor	Yes	SEVERE	Trunk lean.
424	coast live oak (<i>Quercus agrifolia</i>)	25	79	Very Poor	Yes	SEVERE	Trunk lean.
425	elm (<i>Ulmus spp.</i>)	15	47	Fair	Yes	SEVERE	
430	valley oak (<i>Quercus lobata</i>)	14	44	Fair	Yes	MODERATE	
431	valley oak (<i>Quercus lobata</i>)	24	75	Fair	Yes	MODERATE	
433	coast live oak (<i>Quercus agrifolia</i>)	14	44	Fair	Yes	SEVERE	
434	coast live oak (<i>Quercus agrifolia</i>)	12	38	Poor	Yes	SEVERE	Visible decay.

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436	willow (Salix spp.)	14	44	Poor	Yes	SEVERE	
439	coast live oak (Quercus agrifolia)	20	63	Average	Yes	LOW	
440	bay laurel (Umbellularia californica)	14	44	Average	Yes	SEVERE	
442	coast live oak (Quercus agrifolia)	22	69	Fair	Yes	SEVERE	
443	coast live oak (Quercus agrifolia)	14	44	Very Poor	Yes	SEVERE	Trunk lean.
444	coast live oak (Quercus agrifolia)	23	72	Fair	Yes	SEVERE	
445	bay laurel (Umbellularia californica)	18	57	Very Poor	Yes	SEVERE	Trunk lean.
447	bay laurel (Umbellularia californica)	36	113	Very Poor	Yes	SEVERE	Poor branch and /or limb development.
448	coast live oak (Quercus agrifolia)	34	107	Very Poor	Yes	MODERATE	Trunk lean.
449	bay laurel (Umbellularia californica)	14	44	Fair	Yes	SEVERE	
452	bay laurel (Umbellularia californica)	37	116	Very Poor	Yes	LOW	Poor branch and /or limb development.
453	bay laurel (Umbellularia californica)	30	94	Very Poor	Yes	MODERATE	Poor branch and /or limb development.
454	bay laurel (Umbellularia californica)	22	69	Fair	Yes	SEVERE	
455	bay laurel (Umbellularia californica)	12	38	Fair	Yes	SEVERE	
456	valley oak (Quercus lobata)	14	44	Fair	Yes	SEVERE	
459	coast live oak (Quercus agrifolia)	33	104	Very Poor	Yes	SEVERE	Trunk lean and visible decay.
462	bay laurel (Umbellularia californica)	30	94	Very Poor	Yes	SEVERE	Poor branch and /or limb development.
463	coast live oak (Quercus agrifolia)	26	82	Fair	Yes	SEVERE	
464	coast live oak (Quercus agrifolia)	13	41	Very Poor	Yes	SEVERE	Trunk lean.
466	coast live oak (Quercus agrifolia)	12	38	Very Poor	Yes	MODERATE	Trunk lean and visible decay.
467	coast live oak (Quercus agrifolia)	22	69	Poor	Yes	SEVERE	
469	coast live oak (Quercus agrifolia)	14	44	Average	Yes	SEVERE	

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470	coast live oak (Quercus agrifolia)	14	44	Fair	Yes	SEVERE	
472	coast live oak (Quercus agrifolia)	14	44	Fair	Yes	SEVERE	
474	coast live oak (Quercus agrifolia)	15	47	Very Poor	Yes	SEVERE	Trunk lean.
475	coast live oak (Quercus agrifolia)	14	44	Fair	Yes	SEVERE	
476	bay laurel (Umbellularia californica)	28	88	Fair	Yes	SEVERE	
477	coast live oak (Quercus agrifolia)	19	60	Very Poor	Yes	SEVERE	Trunk lean.
482	bay laurel (Umbellularia californica)	29	91	Very Poor	Yes	SEVERE	Poor branch and /or limb development.
483	coast live oak (Quercus agrifolia)	26	82	Fair	Yes	SEVERE	
486	coast live oak (Quercus agrifolia)	23	72	Very Poor	Yes	SEVERE	Trunk lean.
487	coast live oak (Quercus agrifolia)	23	72	Fair	Yes	SEVERE	
488	valley oak (Quercus lobata)	19	60	Very Poor	Yes	SEVERE	Trunk lean.
489	coast live oak (Quercus agrifolia)	14	44	Very Poor	Yes	SEVERE	Trunk lean.
490	coast live oak (Quercus agrifolia)	21	66	Very Poor	Yes	SEVERE	
494	bay laurel (Umbellularia californica)	24	75	Very Poor	Yes	SEVERE	Poor branch and /or limb development.
495	coast live oak (Quercus agrifolia)	25	79	Fair	Yes	SEVERE	
496	coast live oak (Quercus agrifolia)	24	75	Fair	Yes	SEVERE	
497	coast live oak (Quercus agrifolia)	21	66	Poor	Yes	SEVERE	
498	bay laurel (Umbellularia californica)	29	91	Average	Yes	SEVERE	
500	bay laurel (Umbellularia californica)	35	110	Fair	Yes	SEVERE	
501	coast live oak (Quercus agrifolia)	12	38	Fair	Yes	LOW	
502	coast live oak (Quercus agrifolia)	14	44	Fair	Yes	LOW	Visible decay.
503	coast live oak (Quercus agrifolia)	16	50	Very Poor	Yes	LOW	In creek. Trunk lean and visible decay.

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TREE CONDITION and STATUS CHART
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TREE NO.	SPECIES	LARGEST TRUNK DIAMETER	LARGEST TRUNK CIRCUMFERENCE	CONDITION	INDIGENOUS TREE	ANTICIPATED CONSTRUCTION IMPACTS ¹	OBSERVATIONS ²
504	coast live oak (<i>Quercus agrifolia</i>)	26	82	Very Poor	Yes	SEVERE	Trunk lean.
505	coast live oak (<i>Quercus agrifolia</i>)	19	60	Fair	Yes	SEVERE	
507	valley oak (<i>Quercus lobata</i>)	12	38	Very Poor	Yes	LOW	In creek. Trunk lean.
508	valley oak (<i>Quercus lobata</i>)	12	38	Fair	Yes	LOW	In creek. Trunk lean.

1/ CONSTRUCTION IMPACT

L = Low Impact. Basic tree protection measures required.
 M = Moderate Impact. May require additional tree protection measures.
 S = Severe Impact. May require removal of tree.

2/ CONDITION KEY:

1 - Very Poor
 2 - Poor
 3 - Average
 4 - Good
 5 - Excellent

APPENDIX 1

Conceptual Development Plan
with Tree Locations

ATTACHMENTS

Tree Protection Plan

Sample Warning Sign – English

Sample Warning Sign - Spanish

Tree Protection Plan

Prepared for
The Laurel Way Joint Venture
Redwood City, California

In order to establish the importance of protecting mature and newly installed trees, these recommendations should be included as a detail on the final site plan used for construction. A Certified Arborist, Registered Consulting Arborist or Registered Professional Forester should be retained to act as the Project Arborist to monitor any construction activities that may impact the health of trees at the site.

A site meeting to review the Tree Protection Plan with those whose work may impact protected trees is recommended. Participants should include but not limited to the general contractor, sub-contractors, architect, landscape architect or designer, landscapers, engineer and the Project Arborist.

When final grading and construction plans are available detailed tree protection measures can be specified.

1.0 Preconstruction Items

1.1 Tree Work

- A. Prior to the start of grading and construction, all protected trees must be checked for adequate clearance from equipment and construction activities. This will include but is not limited to: tractors, scaffolding, cranes, work crews and trucks.
- B. Tree Removals should be performed prior to construction activities. Removal of trees shall be accomplished in a manner that does not damage protected trees or desired vegetation. The tree contractor must notify the Project Arborist prior to beginning work if collateral damage is anticipated to be unavoidable.
- C. All tree work (pruning and removals) shall be performed by a State of California Licensed Tree Contractor. All pruning shall be done by Certified Arborist or Certified Tree Worker in accordance with the Best Management Practices for Pruning (International Society of Arboriculture, 2002) and adhere to the most recent editions of the American National Standard for Tree Care Operations (Z133.1) and Pruning (A300). The Project Arborist should monitor any pruning of the trees.

- D. Stumps adjacent to protected trees shall be ground out with a stump grinder to grade level or as approved by the City. Before grinding contact the Underground Service Alert Company to mark the location of all underground utilities. Exceptions to the depth must be approved by the Project Arborist prior to beginning the work.

1.2 Mulch

A 6-inch layer of coarse mulch or clean wood chips is to be placed on the exposed soil within the drip line of each protected tree where adjacent grade changes are expected.

1.3 Tree Protection Barriers

- A. Prior to the commencement of construction activities (ie. grading and demolition) tree protection in the form of chain link fencing, chain link panels and/or trunk wraps shall be installed for all trees to be retained.
- B. Tree protection fencing shall consist of 6-foot high or higher chain link fencing panels mounted on sturdy footings. Chain link fencing, 4-foot high or higher, mounted on 1.5 inch metal posts driven 2 feet into the ground with poles spaced no more than 10 feet apart, may also be used.
- C. The decision of which type of barrier to install shall be determined in the field by the City of Redwood City (CITY) or the Project Arborist.
- D. The tree protection barriers shall be placed one foot outside the drip line of protected trees. Questions on the exact location should be brought to the attention of the Project Arborist.
- E. A single continuous fence can be erected to protect clusters of trees or to delineate the limits of construction activities.
- F. A warning sign shall be prominently displayed on each fence. Please use the examples found in the Attachments section. The sign should be laminated or otherwise made weather resistant.
- G. The entire area within the fencing is the **Tree Protection Zone (TPZ)**. The configuration of the fence should not be changed without authorization from the Project Arborist.

1.4 Trunk Wraps

Where the Project Arborist has determined that tree protection fencing will interfere with the safety of work crews, an alternative form of tree protection are the Trunk Wraps described below:

- A. The trunk is to be wrapped 2-inches thick with orange plastic construction fencing as padding from the ground to the first branch. Wooden slats 2-inches thick are to be bound securely, edge to edge, on the outside of the plastic fencing. A single layer of orange plastic construction fencing is to be wrapped and secured around the outside of the wooden slats. Major scaffold limbs may require protection as determined by the Project Arborist.
- B. Straw bales stacked two or three high, securely anchored and surrounding the tree as much as possible along the dripline can be substituted for the wood planking.

1.5 Restrictions Within and closely around the **TPZ or tree canopy**:

- A. All work within the TPZ and dripline (which ever is greater) must be monitored or authorized by the Project Arborist.
- B. All work within the TPZ and dripline (which ever is greater) shall be performed by hand or with hand held equipment.
- C. We encourage boring or the use of an "air spade" for authorized excavation within the dripline or TPZ of trees.
- D. Do not store materials, soil, supplies or debris within the TPZ.
- E. Do not park vehicles or equipment within the TPZ or under tree canopies.
- F. Direct exhaust away from the tree canopy when working adjacent to protected trees.
- G. Do not trench, dig or otherwise excavate within the TPZ without authorization from the Project Arborist.
- H. Do not spill, dump or allow runoff of any materials within or into the TPZ.

1.6 Watering

- A. All subject trees should receive supplemental watering as per the recommendations of the Project Arborist. Water should be applied to exposed soil within the dripline using care to avoid wetting the trunk of the tree.

- B. Water can be provided by a water truck or permeable (soaker) hose. When using a soaker hose, apply water at a low rate of pressure to avoid runoff. Allow water to run until the soil is moist to a depth of 18 inches.
- C. Reclaimed water or water collected at the construction site are not to be used for the purpose of irrigating trees.
- D. When necessary berms or basins are to be constructed around trees to contain applied water.

2.0 During Construction

2.1 Additional Tree Pruning

Any additional tree pruning needed for clearance during construction must be performed by a Certified Arborist or a Certified Tree Worker and not by construction personnel. (Refer to 1.1-C.)

2.2 Root pruning

Any root larger than 2 inches in diameter must be cleanly cut with a handsaw or loppers soon after it has been uncovered. Roots shall not remain uncovered any longer than necessary. All excavation within the TPZ should be performed manually and should be monitored by the Project Arborist or designated representative.

Any significant damage to trees should be reported to the Project Arborist within 4 hours.

2.3 Watering

During construction, the Project Arborist shall monitor the watering needs of the trees and specify to the contractor when water should be applied.

2.4 Protective Fencing

The configuration of the fence cannot be changed without authorization from the Project Arborist.

2.5 Inspections

- A. The Project Arborist should perform monthly inspections during the construction period to verify that the Tree Protection Plan is properly implemented.

- B. Additional inspections may be necessary if it is determined that construction activities may impact a protected tree. (Please see 1.5 Restrictions.)
- C. A written report is to be prepared after each inspection, by the Project Arborist that will include his/her observations, findings and recommendations if necessary.

3.0 Post Construction

3.1 Maintenance of Impacted Trees

Trees preserved at the construction site will experience a physical environment different from that of pre-development. As a result, tree health and structural stability should be monitored. Occasional pruning, fertilization, mulch, pest management and irrigation may be required.

3.2 Scheduled Monitoring

It is recommended that the property owner have the trees inspected for hazard potential and maintenance needs by a Certified Arborist, Registered Consulting Arborist or Registered Professional Forester once per year or once every two years.

The arborist or forester is to provide a written report that will include his/her observations, findings and any necessary recommendations.

WARNING

Tree Protection

Zone

**This fence shall not be moved without approval.
Only authorized personnel may enter this area.**

Each Protected Tree is required to have at least one warning card on its fencing.

CUIDADADO

Zona De Arbol

Pretejido

**Esta cerca no sera removida sin aprobacion.
Solo personal autorizado entrara en esta area.**

Cada arbol pretejido requiere tener por lo menos una tarjeta de advertencia en su cerca.

Terms and Conditions

Ralph Osterling Consultants, Inc.
TERMS AND CONDITIONS

The following terms and conditions apply to all oral and written reports and correspondence pertaining to the consultations, inspections and activities of Ralph Osterling Consultants, Inc. hereinafter referred to as "ROC".

1. Any legal description provided to the consultant is assumed to be correct. No responsibility is assumed for matters legal in character nor is any opinion rendered as to the quality of any title.
2. It is assumed that any property referred to in any report or in conjunction with any services performed by ROC, is not in violation of any applicable codes, ordinances, statutes, or other governmental regulations, and that any titles and ownership to any property are assumed to be good and marketable. Any existing liens and encumbrances have been disregarded.
3. Possession of this report or a copy thereof does not imply any right of publication or use for any purpose, without the express permission of the consultant and the client to whom the report was issued. Loss, removal or alteration of any part of a report invalidates the entire appraisal/evaluation.
4. The scope of any report or other correspondence is limited to the trees and conditions specifically mentioned in those reports and correspondence. ROC and the consultant assume no liability for the failure of trees or parts of trees, either inspected or otherwise. The consultant assumes no responsibility to report on the condition of any tree or landscape feature not specifically requested by the named client.
5. No tree described in this report was climbed, unless otherwise stated. We cannot take responsibility for any defects, which could only have been discovered by climbing. A full roots collar inspection, consisting of excavating the soil around the tree to uncover the root collar and major buttress roots was not performed unless otherwise stated. We cannot take responsibility for any root defects, which could only have been discovered by such an inspection.
6. The consultant shall not be required to provide further documentation, give testimony, be deposed, or attend court by reason of this appraisal/report unless subsequent contractual arrangements are made, including payment of additional fees for such services as described by the consultant or in the fee schedules or contract.
7. ROC guarantees no warranty, either expressed or implied, as to the suitability of the information contained in the reports for any purpose. It remains the responsibility of the client to determine applicability to his/her particular case.
8. Any report and the values, observations, and recommendations expressed therein represent the professional opinion of the consultants, and the fee for services is in no manner contingent upon the reporting of a specified value nor upon any particular finding to be reported.
9. Any photographs, diagrams, graphs, sketches, or other graphic material included in any report, being intended solely as visual aids, are not necessarily to scale and should not be construed as engineering reports or surveys, unless otherwise noted in the report. Any reproductions of graphs material or the work produce of any other persons is intended solely for the purpose of clarification and ease of reference. Inclusion of said information does not constitute a representation by ROC or the consultant as to the sufficiency or accuracy of that information.
10. Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.
11. Payment terms are net payable upon receipt of invoice. All balances due beyond 30 days of invoice date will be charged a service fee of 1.5 percent per month (18.0% APR). All checks returned for insufficient funds or any other reason will be subject to a \$25.00 service fee. Advance payment of fees may be required in some cases.