



Walter Levison
CONSULTING ARBORIST



PNW-ISA Certified Tree Risk Assessor #593 ASCA Registered Consulting Arborist #401 ISA-Certified Arborist #WC-3172

Tree assessment and protection recommendations
Proposed Apple café
C/o Bandley & Alves
Cupertino, CA

Prepared at the request of:

Kier & Wright Civil Engineers & Surveyors, Inc.
3350 Scott Boulevard, Building 22
Santa Clara, California 95054

Site Visit:

Walter Levison, Consulting Arborist (WLCA)

12/16/2011

Report:

WLCA

12/19/2011



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Attached:

Tree Data Charts, 6 Pages



1.0 Assignment

The author (WLCA) was requested by Kier and Wright of Santa Clara, California to tag, assess, and prepare a written arborist report with tree location map and Excel tree data charts for forty-four (44) trees in and adjacent to the property proposed for construction of an Apple, Inc. café. The property is located at the northeast corner of Bandlely and Alves in Cupertino, California (see tree location map below in section 10.0 of this report).

Both street trees and private trees were assessed, including a number of specimens on the neighboring property to the north.

Trees were tagged with Kier and Wright racetrack-shaped tags numbering "601" to "644" at approximately 5 to 7 feet above grade, corresponding to the numbered tree locations marked onto the tree location map below in this report. A few of the trees were covered in ivy and were therefore tagged near grade elevation.

Tree data is contained in an Excel spreadsheet attached to the end of this report.

The tree location map was marked up by WLCA using a survey plot sheet PDF provided by Kier and Wright.

Tree removal, protection, and maintenance recommendations are based on the author's understanding of the scope of site plan work as shown on sheet A1.1 "proposed site plan" by Kier and Wright.

Images of many of the survey trees are located in the photographs section 11.0 of this report for reference of existing tree health and structure.

Protection and maintenance specifications per City of Cupertino "Appendix A / Standards for the protection of trees during grading and construction operations" are incorporated below into WLCA's recommendations in section 5.0 of this report.

2.0 Summary

a) Survey: Forty-four (44) total trees were assessed (street trees, neighbor trees, and private trees).

b) Status:

One (1) tree #601 is a street tree protected by the City.

Twenty-seven (27) trees #602 through #626, #634, and #635 are private trees on the Apple, Inc. property not considered specimen trees.

Sixteen (16) trees #627 through #633, and #636 through #644 are neighbor owned trees located along the north boundary of the proposed project at various distances from the proposed garage excavation limit (see section 4.0 below for discussion).



c) Tree Disposition Matrix:

	Removals / Site Plan Conflicts	Removals / Author Suggested	“Questionable Trees” which may or may not require removal	Retain & Protect (irrigation, trunk buffer, training pruning)	Totals
Street Trees	#601				1
Private trees on Apple Property	#602 through #626, 634, 635.				27
Neighbor Trees		#633, 638, 639, 641, 642, 643.	#636, 640, 644.	#627, 628, 629, 630, 631, 632, 637.	16
Totals	28	6	3	7	44

Good Transplant Candidates:

Five (5) private Apple, Inc. trees #613, 619, 621, 623, 626.

- 613: Mexican fan palm in good overall condition.
- 619: Weeping blue atlas cedar in good overall condition.
- 621: Japanese maple in good overall condition.
- 623: Mexican fan palm in good overall condition.
- 626: Mexican fan palm in good overall condition.

d) Protection & Maintenance:

All trees being retained will require trunk buffer installation around the lowermost 8 feet or more of the trunk(s), and regular irrigation approximately 1x/week or 2x/month. It is suggested that the project arborist (WLCA, or another ISA-Certified Arborist) verify that tree protection and maintenance per this report section 5.0 is installed and performed. Tree



protection and maintenance may be adjusted to account for work described in the final detailed set of plans.

Irrigation in the neighboring property planting area north of the proposed site plan work area will need to be increased in volume (i.e increased duration of activation, etc.) to boost soil moisture in the root zones of all trees being retained.

Monthly monitoring of trees and tree protection may or may not be required as part of the City of Cupertino planning department final conditions of approval (COA). In the past, City Staff have required a 1x/month monitoring report by an ISA-Certified Arborist for all commercial projects worked on by WLCA.

3.0 Tree Protection / City of Cupertino

The City of Cupertino protects oak species and California buckeyes as “**specimen trees**” when measuring greater than or equal to 10 inches diameter measured at 4.5 feet above grade (single stem), or greater than or equal to 20 inches diameter (multi-stem).

The City also protects big leaf maple, deodar cedar, and blue atlas cedar specimens measuring 12 inches diameter (single stem) or 25 inches diameter (multi-stem).

Given this above definition, there are zero specimen trees on or adjacent to the proposed site plan work area.

Note however that tree #1 is protected as a “street tree”, and that neighbor cannot be removed without permission from the tree owner.

Protection During Construction:

Per City code 14.18.190, any tree required by the City of Cupertino to be retained on a proposed building site requires protection during demolition, grading, and construction operations.

Protection and maintenance specifications per City of Cupertino “Appendix A / Standards for the protection of trees during grading and construction operations” are incorporated below in section 5.0 of this report.

4.0 Observations & Discussion

Apple Site Trees

The Apple, Inc. site contains a large proportion of Monterey pine (*Pinus radiata*) specimens, as well as various other shade tree species including Mexican fan palm (*Washingtonia robusta*) and camphor tree (*Cinnamomum camphora*).

- Monterey pine is a short lived tree which has high susceptibility to turpentine beetle feeding and to wind vectored and/or bark beetle vectored pine pitch canker fungus (PPC). It is not a desirable tree to maintain in the landscape in Northern California.



- Mexican fan palm is a relatively pest and disease free palm species that performs very well in the Bay Area. It is also a good choice for transplanting.
- Camphor tree is a high water use tree which typically causes infrastructure damage due to its rooting pattern (see images, this report). The trees at this site are growing in planters which are too small for normal camphor tree culture, resulting in severe curb heave.

Neighbor Site Trees

Trees on the neighbor's site to the north of the proposed café and parking garage are mainly coast redwood (*Sequoia sempervirens*), white alder (*Alnus rhombifolia*), and pink flowering ironbark eucalyptus (*Eucalyptus sideroxylon* 'Rosea').

- Coast redwood is a very fast growing, high water use tree which typically experiences soil moisture deficit in urban settings. It is not an optimal species for this site.
- White alder is a primary colonizing species which likes streamside (riparian) conditions of quick draining moist soil. It is fast growing and short lived, especially in urban settings where clay based soils block or reduce drainage, causing rooting problems and soil borne decay fungi advancement into the root systems of white alders.
- Pink flowering ironbark eucalyptus is an important winter nectar source for bee and hummingbird species. However, it exhibits a genetically-determined structural defect of narrow-forked codominant mainstems and limbs which causes many specimens of the species to break apart prematurely, effectively shortening the useful lifespan of the tree. It is considered a moderate to high risk tree requiring that codominant mainstems be removed to eliminate narrow forks, and endweight reduction pruning be performed to reduce branch endweight.

Transplant Candidates

The Apple site contains five tree specimens #613, 619, 621, 623, and 626 which appear to be good transplant candidates that could be used on or off the proposed Apple café site. There are three Mexican fan palms, one weeping blue atlas cedar, and a Japanese maple in this group of five trees. All three species are some of the more valuable trees on the site proposed to be removed, and all three species can be transplanted with a high rate of success. However, if transplanting is not performed, removal of these five trees would not be considered an irreplaceable loss.

Contact Tree Movers of Mountain View, CA for quotes on transplanting.

Removals

Street tree #601 is proposed to be removed, and does present an impediment to construction based on the current site plan project. It is a low value species (river red gum) in poor overall condition. This species is susceptible to red gum lerp psyllid feeding, and the author did note the presence of this pest insect on tree #601 foliage during the field assessment (see images below, this report).



All site trees on the Apple property are to be removed to clear the way for site plan construction to occur without hindrance. These are trees #602 through 626, and trees #634 and 635.

Six trees on the neighbor property are proposed by the author to be removed due to poor overall condition rating, close proximity to proposed garage excavation on the Apple property, or both. These are trees #633, 638, 639, 641, 642, and 643. None of these trees are especially valuable or important (see discussion of the species above). Removal status was based on the author's analysis of horizontal distance between tree trunk edges and proposed garage excavation limits. Both long term survival root zone retention thresholds (Matheny and Clark, *Trees and Development*) and minimum structural root plate radius requirements (Mattheck, *The Body Language of Trees*) were utilized in the analysis process.

An additional three tree specimens #636, 640, and 644 may need to be removed due to their proximity to proposed garage excavation. These are noted in the section 2.0 tree disposition matrix (page 4) as "questionable trees". These trees are located in positions which allow them to retain a reasonable amount of lateral root mass between garage and trunk edge, but may experience decline or dieback after construction occurs. The author proposes that these trees be carefully monitored by the project arborist (WLCA) if they are not removed outright prior to commencement of the site plan project. Given that they are neighbor trees, approval of tree removal will of course need to be coordinated with the tree owner(s). If the trees exhibit any symptoms of significant decline in health or structure due to site plan work, the trees may need to be removed.

Retention Trees

Trees to be retained on the neighbor's property initially include seven trees #627, 628, 629, 630, 631, 632, and 637. These trees are located in positions where proposed garage excavation is not expected to affect their root systems in any significant way.

5.0 Tree Protection & Maintenance Recommendations

The following items are suggested to be included in the final stamped building set of plans:

1. PROJECT ARBORIST:

WLCA or another consulting arborist should be retained as the official project arborist or "PA" to perform field monitoring and assessments as required by City of Cupertino.

Typical involvement by the PA includes, but is not limited to:

- a) Determination of tree species to be installed at site, and inspection of actual planting stock (tree specimens) to be installed, prior to acceptance of the plant material by the project owners.
- b) An initial signoff during which the PA revisits the site with the project general contractor present, and archives digital images of tree protection to verify that the project is complying with the tree protection and maintenance items outlined in this arborist report. A short written letter report is generated and sent to the project team



for submittal to City Staff as documentation of compliance with tree regulations and/or planning division project conditions of approval (COA).

- c) Regular monitoring of construction on a once monthly basis (as applicable). Soil moisture monitoring is often performed during these monthly inspections, using a 24" long Lincoln soil moisture probe to determine relative soil moisture in the soil surrounding the trunks of trees being retained.
- d) Monitoring of special activities such as demolition of materials and subgrade excavation within zero to 15 horizontal feet of a tree being retained (as applicable).
- e) Monitoring of root pruning and pruning.
- f) Final signoff of the project, which may or may not include a written letter-style report (as applicable).
- g) Post-project monitoring of neighbor trees 1x/year to determine if any tree removals are warranted due to severe root severing that occurred during Apple café garage excavation.

2. PRE-PROJECT TREE REMOVALS:

Project team members shall determine which trees require removal due to direct or indirect conflicts with proposed site plan work. The preliminary list of 34 trees includes: 1 street tree, 27 private trees on the Apple property, and 6 additional removals from the neighbor property suggested by the author (see matrix in summary section 2.0 of this report for tree tag numbers).

3. TRANSPLANTS:

Consider transplanting five (5) trees 613, 619, 621, 623, and 626. Call Tree Movers of Mountain View for quotes.

4. QUESTIONABLE TREES:

Three (3) trees #636, 640, and 644 may or may not need to be removed. At a minimum, the PA will need to monitor these trees during construction to determine if actual field excavation and/or other site plan work encroaches close enough to their trunk edges on the south sides of the trees to warrant removal of the trees due to health or structural impacts.

5. RETENTION TREES:

Trees to be retained on the neighbor property initially include seven (7) trees #627, 628, 629, 630, 631, 632, and 637. These trees will need to be protected with chain link fencing, trunk buffers, and supplied with regular heavy irrigation beyond that which is being provided to them. Some of the trees will require training pruning (#631, 632, 637).



6. LANDSCAPE PLAN:

The PA shall be given the detailed design set of plans to review, prior to finalizing proposed new landscape planting design, specifications for tree planting, tree species, etc. so that these arboriculture-related items can be reviewed and adjusted by the PA.

7. STAGING AND STORAGE AREAS:

Project team shall delineate staging and storage areas on plan set sheet(s) to minimize impacts to trees being retained.

City of Cupertino Appendix A: "No construction materials or chemical solvents shall be stored or dumped under a tree".

8. PRE-PROJECT MAINTENANCE AND PROTECTION:

- a) IRRIGATION: Existing neighbor irrigation shall be increased to supply regular water to all trees being retained. Frequency should be approximately 1x/week. An increase in duration of each watering event will increase the effective volume of water applied to the trees.

The PA will test soil moisture during monthly monitoring events, using a 24" Lincoln soil moisture probe.

- b) FENCING: Install free-standing chain link tree protection fence panels in full wire-locked perimeters around open soil planter areas of trees being retained (see image at right).



- c) TRUNK BUFFER: Provide all trees being retained with a trunk buffer between zero and +/- 8 feet above grade, or the height of the lowest scaffold branches (see spec image):

- i. Wrap the lower trunk of the tree with at least 20 layers of orange plastic snow fencing so that a buffer of plastic 2-inches thick is created over the trunk between grade and at least 6 to 8-feet above grade.



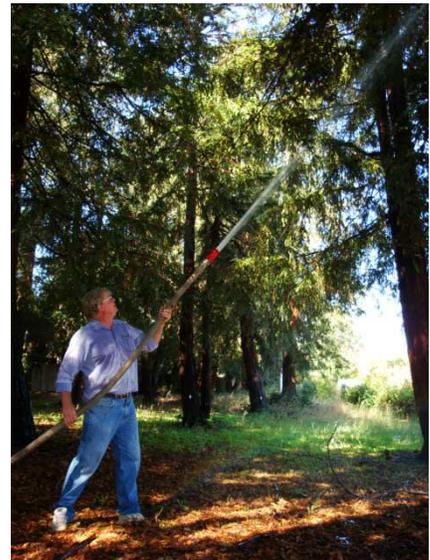


- ii. Stand 2X4X8-ft boards vertically, side by side, to create a solid wall of wood around the entire circumference of each tree. A second person must hold this wood in place so that step iii can be performed.
- iii. While one person holds the wood, a second person continues wrapping orange plastic snow fencing over the boards to secure the buffer in place. Wrap duct tape or rope over the outside during step iii only, in order to secure the materials. Alternatively, use UV resistant zipties.

(The image above right shows a buffer which used extra orange fence as the final securing wrap instead of rope or duct tape.)

9. DURING-PROJECT MAINTENANCE:

- a) IRRIGATION: (SEE ITEM #7(A) ABOVE).
- b) HOSE SPRAY: Periodically (e.g. 1x/month) spray off the entire canopies of trees being retained, using a strong hose with pressure gun (see spec image). The hose spray should be directed such that it hits both the upper sides and lower sides of foliage. It is important to wash construction dust off leaf stomata which are gas portals on the undersides of the foliage that allow for gas exchange to occur. Cleaning off the upper sides of the foliage will clear the chlorophyll-laden areas of the leaves of dust, optimizing photosynthesis.
- c) ROOT PRUNING: If roots measuring greater than or equal to 1 inch diameter are encountered during garage excavation near trees being retained, then sharp tools such as Sawzall, concrete saw, or professional loppers or pruning shears shall be used to cleanly cut roots at right angles to their growth directions under direct supervision or monitoring from the PA (see spec image below).



City of Cupertino Appendix A: "If trenching is required to penetrate to the protection barrier for a tree, the section of trench in the drip line shall be hand dug so as to preclude the cutting of roots..."



- d) **CANOPY PRUNING:** Various canopy issues exist, such as splitout wounds, branch endweight, and codominant mainstems and limbs.

All future pruning should be performed by, or under direct supervision by, an ISA Certified Arborist, and must conform to the most current iteration of the “ANSI A300 standard for tree care operations, tree, shrub, and other woody plant maintenance – standard practices (pruning)”.

Some codominant stems can be pruned out. Others will have to be retained and the endweight of those limb sections managed to reduce endweight and reduce likelihood of future splitouts.

Structural pruning to reduce branch endweight and remove codominant stems, etc. is required on trees #631, 632, and 637 to improve tree structure.

City of Cupertino / Appendix A: “No branches or roots shall be cut unless at first reviewed by the landscape architect / arborist with approval of Staff”. “Any damage to existing tree crowns or root systems shall be repaired immediately by an approved tree surgeon”.

- e) **MONITORING OF QUESTION TREES:**

The project arborist shall monitor question trees #636, 640, and 644 to determine if they require removal, based on actual site plan work impacts (if they are not removed outright prior to site plan commencement).

- f) **LANDSCAPING INSTALLATION:**

Stock Grading: Allow the PA to grade all tree stock prior to final acceptance by the landscape contractor.

Rootball Working: Rootball working should be performed on all trees to be installed on site, prior to installation in the landscape. Rootball working protocol should be per the definitive article by Levison & Muffly, *Pacific Horticulture*, edition Jan / Feb / March 2008. Written abbreviated version of the protocol:

- i. Irrigate the rootball.
- ii. Pull out the tree rootball from the container and place it on a plastic tarp.
- iii. Rip out the perimeter circling roots, and the uppermost few inches of soil to expose the inner root mass. Pull the entire rootball apart using your hands to expose the roots





- throughout the rootball.
- iv. Locate the original buttress roots which may be as deep as 6 to 12 inches below the top of the rootball soil elevation. Reestablish original soil grade elevation around the trunk by using a professional grade pruning shear to prune out adventitious roots arising from the trunk above the original buttress roots.
 - v. Locate all girdling and circling roots in the rootball. Prune out girdling roots. Prune circling roots at their bend points so that they point outward, radiating straight out from the tree trunk like spokes on a bicycle wheel (see image of a fully-worked rootball below).
 - vi. Place the rootball back into the plastic container along with the loose soil on the tarp, and heavily irrigate the tree.

Species: Tree species proposed to be installed at this site should be discussed with the project arborist (prior to finalization of the landscape plan).

Trenching: All new irrigation pipe trenching should occur at least 20 linear feet from the trunk edge of any tree being retained.

6.0 Consultant's Qualifications

- Contract Project Arborist, SFPUC Bay Division Pipe Lines 3, 4, 5 (construction phase) 2010-present
- PNW-ISA Certified Tree Risk Assessor #593
- ASCA Registered Consulting Arborist #401
- Millbrae Community Preservation Commission (Tree Board) 2001-2006
- ASCA Arboriculture Consulting Academy graduate, class of 2000
- ISA Certified Arborist #WC-3172
- B.A. Environmental Studies/Soil and Water Resources UC Santa Cruz, Santa Cruz, California 1990
- Peace Corps Soil and Water Conservation Extension Agent Chiangmai Province, Thailand 1991-1993
- Associate Consulting Arborist Barrie D. Coate and Associates 4/99-8/99
- Contract City Arborist to the City of Belmont 5/99-present



Continued education through attendance of arboriculture lectures and forums sponsored by The American Society of Consulting Arborists, The International Society of Arboriculture (Western Chapter), and various governmental and non-governmental entities.

(My full curriculum vitae is available upon request)

7.0 Bay Area Vendors

Advanced Tree Care- Rob Weatherill (Provides pruning, cabling, bracing, support prop engineering and installation, sudden oak death treatments, fertilization and other services as a "full service" tree care firm)	Redwood City	Scheduling 650 839-9539
Maguire Tree Care - Paul Maguire (One of the only ISA-Certified Arborists who actually performs his own pruning).	Half Moon Bay	Cell 650-245-2620
Trees 360 – Straun Edwards. Full service tree care company. Mr. Edwards is another ISA-Certified Arborist who often works directly in the field with his crews.	Saratoga	Cell 408-898-0625
Tree Movers, Inc. –Ted Tree sourcing and transplanting.	Mountain View	Office 650 968-6117

(The above sources have been known to provide high-quality arboriculture services in the past. They are not guaranteed or endorsed by the author.)

8.0 Assumptions and Limiting Conditions

Any legal description provided to the consultant/appraiser is assumed to be correct. Any titles and ownership to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised and evaluated as through free and clean, under responsible ownership and competent management.

It is assumed that any property is not in violation of any applicable codes, ordinance, statutes, or other government regulations.

Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant/appraiser can neither guarantee nor be responsible for the accuracy of information provided by others.

The consultant/appraiser shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

Unless required by law otherwise, the possession of this report or a copy thereof does not imply right of publication or use for any other purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of the consultant/appraiser.

Unless required by law otherwise, neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales, or other media, without the prior



expressed conclusions, identity of the consultant/appraiser, or any reference to any professional society or institute or to any initiated designation conferred upon the consultant/appraiser as stated in his qualifications.

This report and any values expressed herein represent the opinion of the consultant/appraiser, and the consultant's/appraiser's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

Sketches, drawings, and photographs in this report, being intended for visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys unless expressed otherwise. The reproduction of any information generated by engineers, architects, or other consultants on any sketches, drawings, or photographs is for the express purpose of coordination and ease of reference only. Inclusion of said information on any drawings or other documents does not constitute a representation by Walter Levison to the sufficiency or accuracy of said information.

Unless expressed otherwise:

information contained in this report covers only those items that were examined and reflects the conditions of those items at the time of inspection; and

the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.

Loss or alteration of any part of this report invalidates the entire report.

Arborist Disclosure Statement:

Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Tree are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborist cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed.

Treatment, pruning, and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

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 the trees.



Walter Levison
CONSULTING ARBORIST



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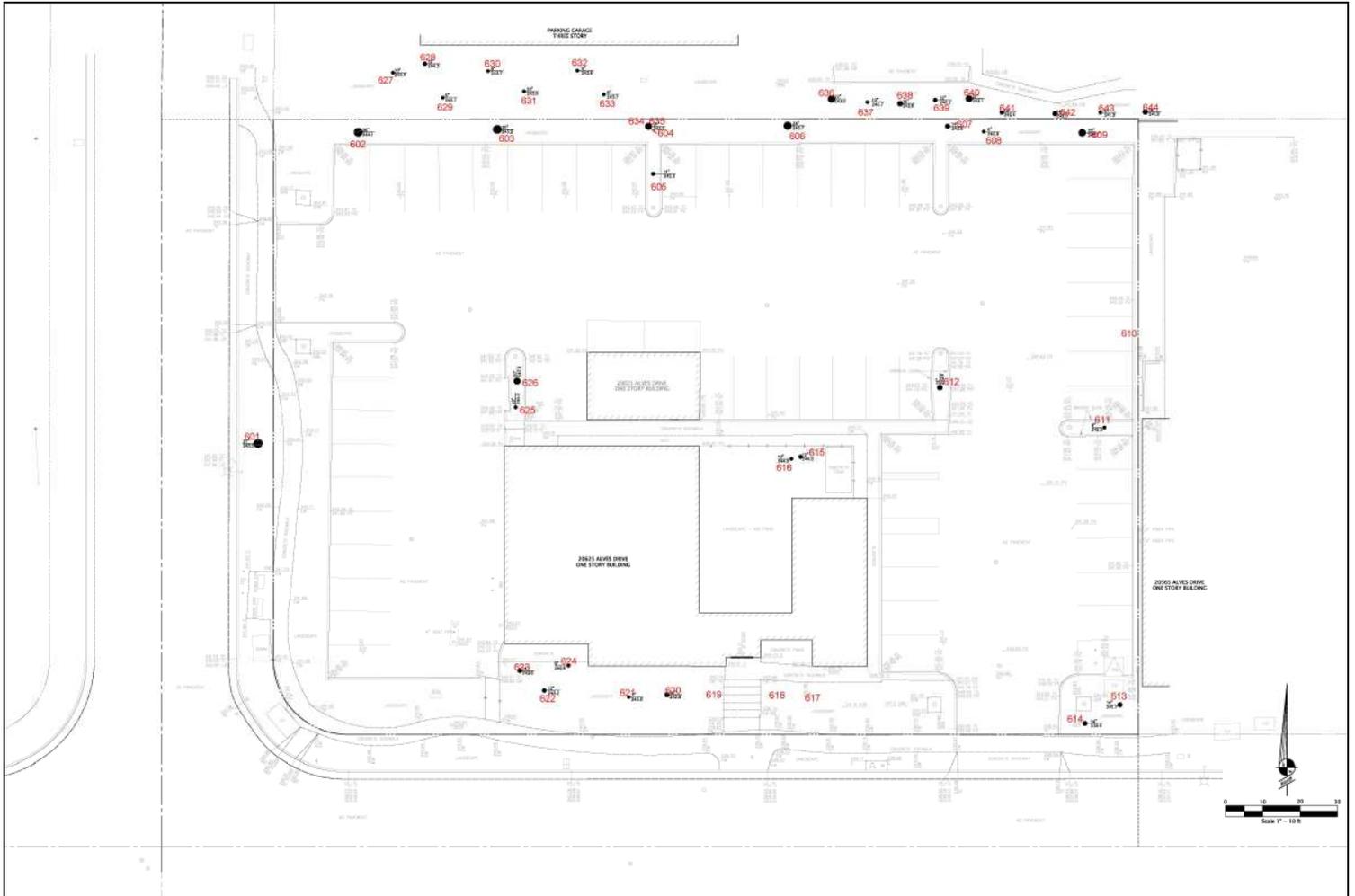
9.0 Certification

I hereby certify that all the statements of fact in this report are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Signature of Consultant



10.0 Tree Location Map

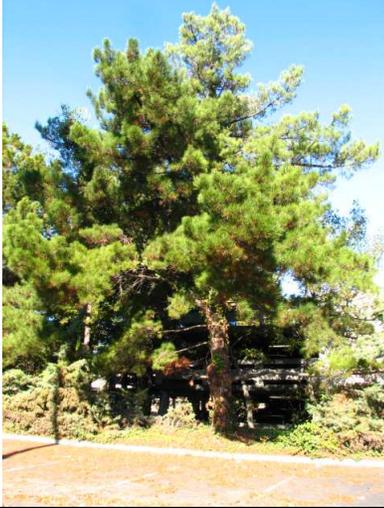




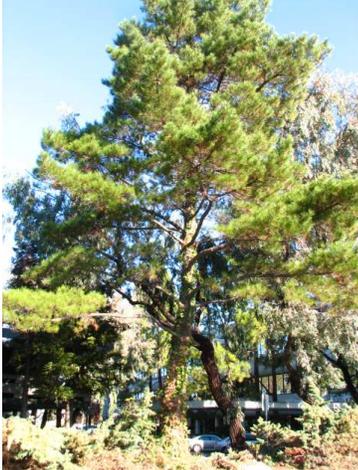
11.0 Photographs

Tree #	Image 1	Image 2
601	 <p data-bbox="435 1157 643 1192">City street tree</p>	 <p data-bbox="873 989 1451 1058">Red gum lerp psyllid infestation on a leaf dropped from street tree #601.</p>
602		

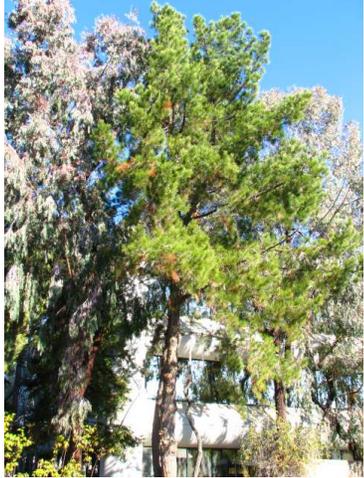


Tree #	Image 1	Image 2
603		
604 & 605	 <p data-bbox="396 1486 675 1520">604: Pine in middle.</p> <p data-bbox="371 1562 699 1596">605: Camphor on right.</p>	



Tree #	Image 1	Image 2
606		
607		



Tree #	Image 1	Image 2
608		
609		
610	(Not shown)	



Tree #	Image 1	Image 2
611		
612		
613	 Transplant Candidate	



Tree #	Image 1	Image 2
614		
615		
616		



Tree #	Image 1	Image 2
<p>617 & 618 (R to L)</p>		
<p>619</p>	 <p data-bbox="386 1058 691 1094">Transplant Candidate</p>	
<p>620 & 621 (R to L)</p>	 <p data-bbox="280 1503 797 1537">Maple #621 is Transplant Candidate</p>	



Tree #	Image 1	Image 2
622		<p>Tree #602 is located in the center of the image.</p>
623	 <p>Transplant Candidate</p>	
624		



Tree #	Image 1	Image 2
625		
626	 <p data-bbox="386 1234 691 1268">Transplant Candidate</p>	



Tree #	Image 1	Image 2
627, 628, 629	 <p data-bbox="277 682 799 972">Looking east along the neighbor tree planting area. This area is irrigated, but appears to be experiencing soil moisture deficit (SMD) due to inadequate supplemental water volume additions for the high water use species growing in this area (i.e. coast redwoods, white alder).</p> <p data-bbox="289 1010 789 1148">Irrigation of the neighbor redwoods and alders should be increased throughout the planting area during site plan work.</p>	



Tree #	Image 1	Image 2
(Various)	 <p data-bbox="272 779 802 921">Looking north at pink flowering ironbark eucalyptus specimens in the neighbor planting area just north of the Apple property boundary.</p>	 <p data-bbox="894 774 1429 844">Looking directly east at pink flowering ironbarks #609, 641, 642, 643, 644.</p> <p data-bbox="836 884 1485 1024">The property boundary is roughly indicated by the red arrow, with the Apple property parking lot to the right, and the neighbor's property with concrete sidewalk to the left.</p>

ATTACHED:

TREE DATA CHARTS

Tree Tag #	Protection Status (Note: Cupertino Specimen Trees are Oaks 10"/20", or Deodar and Blue Atlas Cedar 12"/25")	Author recommends removal of tree	Tree to be removed per proposed site plan	Maintenance Codes (E)ndweight reduction pruning (T)raining pruning (F)ertilization (I)rrigation upgrade needed (C)odominant stem removal	Mainstem1 (Diameter inches at 4.5 feet)	Mainstem2	Mainstem3	Mainstem4	Mainstem5	Mainstem6	Total of all mainstem diameters	Common Name	Genus & Species	Height & Spread (ft.)	Health & Structure (0-100% each)	Overall Condition Rating (0-100%)	Notes
601	Street Tree		X		27						27.0	river red gum	<i>Eucalyptus viminalis</i>	40/60	80/30	38% Poor	Red gum lerp psyllid presence noted (serious pest of this tree species). One north side codominant mainstem blew out, leaving scar on lower trunk. Tree to be removed per site plan.
602			X		26						26.0	Monterey pine	<i>Pinus radiata</i>	35/25	80/50	55% Fair	Crowded limb structure.
603			X		26						26.0	Monterey pine	<i>Pinus radiata</i>	35/20	60/60	60% Fair	
604			X		21						21.0	Monterey pine	<i>Pinus radiata</i>	35/25	60/60	60% Fair	Possible pine pitch canker fungus infection noted ("PPC").
605			X		11						11.0	camphor tree	<i>Cinnamomum camphora</i>	25/20	50/40	45% Poor	Root system causing severe curb heave. Note one limb splitout at 6 feet above grade. Lanky limb structure.
606			X		24						24.0	Monterey pine	<i>Pinus radiata</i>	35/25	70/70	70% Good	
607			X		14						14.0	Monterey pine	<i>Pinus radiata</i>	35/12	70/65	68% Fair	
608			X		6						6.0	pink flowering ironbark eucalyptus	<i>Eucalyptus sideroxylon</i> 'Rosea'	30/5	40/20	25% Very Poor	Stunted in shade of surrounding larger tree specimens. S-trunk form.

Tree Tag #	Protection Status (Note: Cupertino Specimen Trees are Oaks 10"/20", or Deodar and Blue Atlas Cedar 12"/25")	Author recommends removal of tree	Tree to be removed per proposed site plan	Maintenance Codes (E)ndweight reduction pruning (T)raining pruning (F)ertilization (I)rrigation upgrade needed (C)odominant stem removal						Total of all mainstem diameters	Common Name	Genus & Species	Height & Spread (ft.)	Health & Structure (0-100% each)	Overall Condition Rating (0-100%)	Notes
				Mainstem1 (Diameter inches at 4.5 feet)	Mainstem2	Mainstem3	Mainstem4	Mainstem5	Mainstem6							
609			X							22.0	Monterey pine	<i>Pinus radiata</i>	35/20	30/40	35% Poor	Pine pitch canker infection noted on outermost end of one limb at 20 feet above grade.
610			X							3.7	Eucalyptus species	<i>Eucalyptus sp.</i>	22/6	90/80	85% Good	Tree added to site survey by WL. Specimen may or may not be considered a "tree" by Cupertino planning department until reaches 4.0 inches diameter.
611			X							8.0	camphor tree	<i>Cinnamomum camphora</i>	22/20	60/50	55% Fair	Root system causing severe curb heave.
612			X							16.0	camphor tree	<i>Cinnamomum camphora</i>	25/30	60/55	60% Fair	Root system causing severe curb heave.
613			X							14.0	Mexican fan palm	<i>Washingtonia robusta</i>	60/10	80/80	80% Good	No visible issues biotic or abiotic. Transplant?
614			X							23.0	Pine species	<i>Pinus sp.</i>	10/8	90/60	70% Good	Tree has been hedge pruned back to a shrub form. Very good TDE.
615			X							12.0	Japanese flowering cherry cultivar	<i>Prunus serrulata</i> (Cult.)	15/20	50/30	40% Poor	Tree was topped multiple times in the past.
616			X							10.0	deodar cedar	<i>Cedrus deodara</i>	45/15	90/50	60% Fair	S-trunk form with bend at 6 feet above grade.
617			X							7.5	Japanese black pine	<i>Pinus thunbergii</i>	10/8	85/50	55% Fair	Species not verified 100%. Added to survey by WL. Tree was topped in past.

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618			X		4.7						4.7	Japanese black pine	<i>Pinus thunbergii</i>	10/8	85/50	55% Fair	Species not verified 100%. Added to survey by WL. Tree was topped in past.
619			X		9						9.0	Weeping blue atlas cedar	<i>Cedrus atlantica</i> 'Glauca' weeping form	8/20	90/70	80% Good	Added to survey by WL. Very nice low elevation specimen tree. Possible transplant.
620			X		14						14.0	Pine species	<i>Pinus sp.</i>	15/15	35/40	37% Poor	Needles 6 inches long in 3's. Tree exhibits western gall rust fungus infection, and possibly pine pitch canker infection as well.
621			X		4	3	3	2	1		13.0	Japanese maple	<i>Acer palmatum</i>	10/10	80/70	75% Good	Topped in past. Good transplant candidate.
622			X		12						12.0	Japanese flowering cherry cultivar	<i>Prunus serrulata</i> (Cult.)	10/12	60/45	55% Fair	Topped in past.
623			X		14						14.0	Mexican fan palm	<i>Washingtonia robusta</i>	60/8	80/70	77% Good	No visible issues biotic or abiotic. Transplant?
624			X		9						9.0	Ginkgo biloba	<i>Ginkgo biloba</i>	25/15	80/80	80% Good	Good single leader form.
625			X		3	3	3	3	2	2	16.0	Japanese flowering cherry cultivar	<i>Prunus serrulata</i> (Cult.)	12/12	40/30	35% Poor	Root system constricted in planter, resulting in J-form root growth.
626			X		20						20.0	Mexican fan palm	<i>Washingtonia robusta</i>	60/8	80/80	80% Good	No abiotic or biotic issues noted. Transplant?

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627	Neighbor tree			I	10						10.0	coast redwood	<i>Sequoia sempervirens</i>	35/10	75/75	75% Good	Soil moisture deficit. Increase irrigation if retained. Located 17 feet from proposed garage excavation. Appears to be fully retainable. Use trunk buffer and increased irrigation during site plan work.
628	Neighbor tree			I	12						12.0	coast redwood	<i>Sequoia sempervirens</i>	35/10	70/70	70% Good	Soil moisture deficit. Increase irrigation if retained. Located 19 feet from proposed garage excavation. Appears to be fully retainable. Use trunk buffer and increased irrigation during site plan work.
629	Neighbor tree			I	6						6.0	coast redwood	<i>Sequoia sempervirens</i>	25/8	70/70	70% Good	Soil moisture deficit. Increase irrigation if retained. Located 10 feet from proposed garage excavation. Appears to be fully retainable given its small diameter trunk. Use trunk buffer and increased irrigation during site plan work.
630	Neighbor tree			I	8						8.0	white alder	<i>Alnus rhombifolia</i>	35/25	75/50	60% Fair	Trunk leans west. Needs increased irrigation. Garage excavation will occur at 17 feet from trunk. Tree appears to be fully retainable. Use trunk buffer and increased irrigation during site plan work.
631	Neighbor tree			T, I	10						10.0	white alder	<i>Alnus rhombifolia</i>	35/25	75/45	50% Fair	Tree topped in past. Needs training pruning and irrigation upgrades. Proposed garage excavation will occur at 12 feet from trunk. Tree should be retainable, but given its condition of 50%, it will need to be monitored during construction for declining vigor. Use trunk buffer and increased irrigation during site plan work.
632	Neighbor tree			T, I	6						6.0	white alder	<i>Alnus rhombifolia</i>	25/15	75/60	65% Fair	S-bend on central leader. Needs training pruning and increased irrigation. Tree located 17 feet from garage excavation limit, and as such should be totally retainable. Use irrigation and trunk buffer during site plan work.
633	Neighbor tree	X		I	6						6.0	white alder	<i>Alnus rhombifolia</i>	25/12	50/40	45% Poor	Tree stunted in shade. Lacks buttress roots on southeast side. Root damage noted. This tree is in poor overall condition, and positioned only 11 feet from the proposed limit of garage excavation. I therefore suggest removal of the tree. However, if required, the tree can be retained and maintained with increased irrigation.

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634			X		4.4						4.4	glossy privet	<i>Ligustrum lucidum</i>	25/8	50/35	40% Poor	Tree added by WL to site survey. Tree appears to be a volunteer that arose from a bird dropping adjacent to tree #604. Tree appears to be located on the border of the Apple-owned property.
635			X		3.3						3.3	glossy privet	<i>Ligustrum lucidum</i>	25/8	50/35	40% Poor	Tree added by WL to site survey. Tree appears to be a volunteer that arose from a bird dropping adjacent to tree #604. Tree appears to be located on the border of the Apple-owned property. Note: This tree may or may not be considered a "tree" by Cupertino planning department until it reaches 4.0 inches diameter.
636	Neighbor tree	?		T	22						22.0	pink flowering ironbark eucalyptus	<i>Eucalyptus sideroxylon</i> 'Rosea'	55/40	75/55	65% Fair	Trunk leans northwest. Canopy lopsided northwest. Proposed garage excavation will occur at 9 feet from trunk, making this a borderline removal candidate. Minimum structural root plate radius to be retained is +/- 6 feet, although suggested minimum for this tree is 9 to 10 feet.
637	Neighbor tree			T	10						10.0	pink flowering ironbark eucalyptus	<i>Eucalyptus sideroxylon</i> 'Rosea'	35/15	70/55	55% Fair	Two codominant mainstems fork at 7 feet above grade. Garage excavation will occur at 9 feet from trunk edge. This tree should be retainable. Training pruning, irrigation, and use of a trunk buffer are all warranted if tree is retained.
638	Neighbor tree	X			16						16.0	pink flowering ironbark eucalyptus	<i>Eucalyptus sideroxylon</i> 'Rosea'	50/40	75/50	55% Fair	Two codominant mainstems fork at 6 feet above grade. Garage excavation will occur at 8 feet from trunk edge. This tree is probably not retainable given the location of excavation in relation to the trunk edge, and given its large trunk diameter. I suggest removal of the tree.
639	Neighbor tree	X			12						12.0	pink flowering ironbark eucalyptus	<i>Eucalyptus sideroxylon</i> 'Rosea'	35/35	60/30	35% Poor	S-trunk form. One splitout wound noted at 15 feet above grade. Garage trenching will occur at 9 feet from trunk edge, making this tree a good removal candidate based on both the overall condition rating of "poor" and on the close proximity of proposed excavation.

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640	Neighbor tree	?		T	21						21.0	pink flowering ironbark eucalyptus	<i>Eucalyptus sideroxylon</i> 'Rosea'	55/25	80/55	65% Fair	Three codominant mainstems fork at 18 feet above grade. Good TDE. Tree had endweight reduction pruning on north side of canopy. Tree is in good enough condition that it could potentially be retained, given that proposed garage excavation will occur at 9 feet out from trunk edge on the south side. Minimum structural root retention radius is 6 feet, but for maintaining health long term, the closest distance to excavate should be approximately 12 feet from trunk for a eucalyptus of this trunk diameter. Therefore, it is a borderline removal candidate.
641	Neighbor tree	X			12						12.0	pink flowering ironbark eucalyptus	<i>Eucalyptus sideroxylon</i> 'Rosea'	45/20	65/55	50% Fair	Trunk leans south over Apple property. Old splitout wound noted at 18 feet above grade. Garage excavation will occur at 6 feet from trunk, making this a good removal candidate.
642	Neighbor tree	X			14						14.0	pink flowering ironbark eucalyptus	<i>Eucalyptus sideroxylon</i> 'Rosea'	55/45	80/60	70% Good	Tree was previously topped. Codominant mainstems fork at 25 feet above grade. Garage excavation will occur at 6 feet from trunk, making this tree a good removal candidate.
643	Neighbor tree	X			6						6.0	pink flowering ironbark eucalyptus	<i>Eucalyptus sideroxylon</i> 'Rosea'	25/6	0/0	0% Dead	Dead tree. Author suggests removal of this dead tree.
644	Neighbor tree	?		T, I	16						16.0	pink flowering ironbark eucalyptus	<i>Eucalyptus sideroxylon</i> 'Rosea'	55/30	80/55	68% Fair	S-form mainstem at 25 feet above grade. Good TDE. Tree has received clearance pruning on north side of canopy to clear the existing neighbor office building, which is good since it reduced tension stresses for the Apple garage-side of root system to deal with after excavation occurs on south. Tree is located 8 feet from proposed garage excavation, making this tree retainable, but would need to be <u>monitored for decline and trunk lean / root plate rotation</u> . Use trunk buffer and increased irrigation during construction.