



May 1, 2020

Tom Tomich
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 Davis, CA 95616
 Via Email: tptomich@ucdavis.edu

PRE-CONSTRUCTION ARBORIST REPORT

RE: 6331 Filbert Avenue, APN #223-0091-023-0000, jurisdiction of Sacramento County, California

Executive Summary:

Tom Tomich, the property owner, contacted California Tree and Landscape Consulting, Inc. to inventory and evaluate the trees on the site for purposes of providing preliminary tree information for planning for a parcel split. The property is located at 6331 Filbert Avenue in Orangevale, California, and is subject to the jurisdiction of Sacramento County. See Supporting Information Appendix A –Tree Location Map.

Nicole Harrison, ISA Certified Arborist #WE-6500AM, and Nicholas McNamara, arborists assistant, were on site from January 6th, 2020 to February 20th, 2020. A total of 59 trees were included in the inventory, 48 were evaluated on this property and a field tag was installed. 15 trees are protected by the Sacramento County Tree Preservation Ordinance. The site was evaluated during the dormant period and there are 5 unidentified trees (likely nut trees).

The site was previously an active orchard of many species. All the fruit trees on this site were pruned for fruit production until recently, and other than the nut trees, would likely make poor, messy trees if left in the landscape. This includes the large multi-stem olives along Filbert Avenue. There is 1 Mulberry that could be considered a specimen tree and is proposed for retention on the site.

| Tree Species | Trees Inventoried | Trees on the Site | Protected by Sacramento County Tree Preservation, 19.12 ¹ | Trees Proposed for Removal (Count/Diameter Inches) | Trees impacted by the proposed development and requiring special protection measures and/or mitigation ¹ |
|--|-------------------|-------------------|--|--|---|
| Protected: | | | | | |
| Valley Oak, Quercus lobata | 14 | 14 | 11 | 3/34 | - |
| Interior Live Oak, Quercus wislizeni | 6 | 5 | 4 | 3/35 | - |
| Non-Protected (by species): | | | | | |
| Landscape Trees ² | 21 | 11 | 0 | 9 | - |
| Fruit tree species, included due to location (around the main structure) or for potential to remain as a landscape tree. | 18 | 18 | 0 | 6 | *Olives along the street will need protection if they are to remain |
| Total | 59 | 48 | 15 | 6/69 | |

See Appendices for specific information on each tree

¹ Tree preservation pursuant to the zoning code at Sacramento County includes alternate protection standards for non-native species, mitigation trees previously planted, and commercial and/or multifamily residential landscapes. Trees not indicated within this report as 'protected' by the native oak tree preservation ordinance may still require permitting for removal. Old orchards and the fruit production trees are generally do not require any mitigation for removal.

² Most of these trees were inventoried due to their proximity to the site and for purposes of protection during development.

Methods

Appendix B in this report is the detailed inventory and recommendations for the trees. The following terms and Table A – Ratings Description will further explain our findings.

A Level 2 – Basic Visual Assessment was performed in accordance with the International Society of Arboriculture’s best management practices. This assessment level is limited to the observation of conditions and defects which are readily visible. Additional limiting factors, such as blackberries, poison oak, and/or debris piled at the base of a tree can inhibit the visual assessment.

Tree Location: The GPS location of each tree was collected using the ESRI’s ArcGIS collector application on an Apple iPhone or Samsung. The data was then processed in ESRI’s ArcMap by Julie McNamara, M.S. GISci, to produce the tree location map.

Tree Measurements: DBH (diameter breast high) is normally measured at 4’6” (above the average ground height for “Urban Forestry”), but if that varies then the location where it is measured is noted. A Swedish caliper was used to measure the DBH for trees less than 32” in diameter or less and a steel diameter tape for trees greater than 32”. A Stanley laser distance meter was used to measure distances. Canopy radius measurements may also have been estimated due to obstructions, such as steep slopes or other trees.

Terms

| | |
|-----------------------------------|--|
| Field Tag # | The pre-stamped tree number on the tag which is installed at approximately 6 feet above ground level on the north side of the tree. |
| Old Tag # | If additional field tags are found on the trees and are legible, they are listed here. |
| Species | The species of a tree is listed by our local and correct common name and botanical name by genus (capitalized) and species (lower case). Oaks frequently cross-pollinate and hybridize, but the identification is towards the strongest characteristics. |
| DBH | Diameter breast high' is normally measured at 4’6” (above the average ground height for “Urban Forestry”), but if that varies then the location where it is measured is noted in the next column “measured at” |
| Measured at | Height above average ground level where the measurement of DBH was taken |
| Canopy radius and Protection Area | The farthest extent of the crown composed of leaves and small twigs. Most trees are not evenly balanced. This measurement represents the longest extension from the trunk to the outer canopy. The dripline measurement is from the center point of the tree and is shown on the Tree Location Map as a circle. This measurement further defines the protection zone and can indicate if pruning may be required for development. Sacramento County specifies this measurement as the required ‘Protected Root Zone’ |
| Critical Root Zone | The radius of the critical root zone is a circle equal to the trunk diameter inches converted to feet and factored by tree age, condition and health pursuant to the industry standard. Best Management Practices: Managing Trees During Construction, the companion publication to the Approved American National Standard, provides guidance regarding minimum tree root protection zones for long term survival. In instances where a tree is multi-stemmed the protected root zone is equal to the extrapolated diameter (sum of the area of each stem converted to a single stem) factored by tree age, condition and health. |

Arborist Rating Subjective to condition and is based on both the health and structure of the tree. All of the trees were rated for condition, per the recognized national standard as set up by the Council of Tree and Landscape Appraisers and the International Society of Arboriculture (ISA) on a numeric scale of 5 (being the highest) to 0 (the worst condition, dead) as in Chart A. The rating was done in the field at the time of the measuring and inspection.

| <u>Arborist Ratings</u> | | | <u>Sacramento County Ratings</u> |
|-------------------------|--------------|----------|----------------------------------|
| No problem(s) | Excellent | 5 | Excellent |
| No apparent problem(s) | Good | 4 | Good |
| Minor problem(s) | Fair | 3 | Fair |
| Major problem(s) | Fair to Poor | 2 | Declining |
| Extreme problem(s) | Poor | 1 | Severe Decline |
| Dead | Dead | 0 | Dead |

Rating #0: This indicates a tree that has no significant sign of life.

Rating #1: The problems are extreme. This rating is assigned to a tree that has structural and/or health problems that no amount of work or effort can change. The issues may or may not be considered a dangerous situation.

Rating #2: The tree has major problems. If the option is taken to preserve the tree, its condition could be improved with correct arboricultural work including, but not limited to: pruning, cabling, bracing, bolting, guying, spraying, mistletoe removal, vertical mulching, fertilization, etc. If the recommended actions are completed correctly, hazard can be reduced and the rating can be elevated to a 3. If no action is taken the tree is considered a liability and should be removed.

Rating #3: The tree is in fair condition. There are some minor structural or health problems that pose no immediate danger. When the recommended actions in an arborist report are completed correctly the defect(s) can be minimized or eliminated.

Rating #4: The tree is in good condition and there are no apparent problems that a Certified Arborist can see from a visual ground inspection. If potential structural or health problems are tended to at this stage future hazard can be reduced and more serious health problems can be averted.

Rating #5: No problems found from a visual ground inspection. Structurally, these trees have properly spaced branches and near perfect characteristics for the species. Highly rated trees are not common in natural or developed landscapes. No tree is ever perfect especially with the unpredictability of nature, but with this highest rating, the condition should be considered excellent.

Notes: Provide notable details about each tree which are factors considered in the determination of the tree rating including: (a) condition of root crown and/or roots; (b) condition of trunk; (c) condition of limbs and structure; (d) growth history and twig condition; (e) leaf appearance; and (f) dripline environment. Notes also indicate if the standard tree evaluation procedure was not followed (for example - why dbh may have been measured at a location other than the standard 54"). Additionally, notes will list any evaluation limiting factors such as debris at the base of a tree.

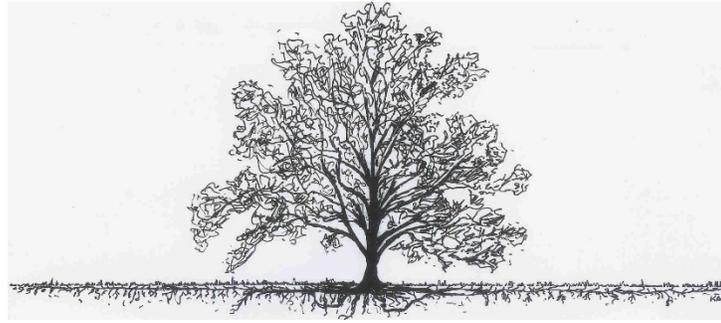
Discussion

Trees need to be protected from normal construction practices if they are to remain healthy and viable on the site. Our recommendations are based on experience and the County ordinance requirements to enhance tree longevity. This requires their root zones remain intact and viable despite the use of heavy equipment to install foundations, driveways, underground utilities, and landscape irrigation systems. Simply walking and driving on soil can have serious consequences for tree health. Tree Protection measures should be incorporated into the site plans in order to protect the trees.

Root Structure

The majority of a tree’s roots are contained in a radius from the main trunk outward approximately two to three times the canopy of the tree. These roots are located in the top 6” to 3’ of soil. It is a common misconception that a tree underground resembles the canopy. The correct root structure of a tree is in the drawing below. All plants’ roots need

both water and air for survival. Poor canopy development or canopy decline in mature trees after development is often the result of inadequate root space and/or soil compaction.



The reality of where roots are generally located

Pruning Mature Trees for Risk Reduction and/or Development Clearance

There are few good reasons to prune mature trees. Removal of deadwood, directional pruning, removal of decayed or damaged wood, and end-weight reduction as a method of mitigation for structural faults are the only reasons a mature tree should be pruned. Live wood over 3" should not be pruned unless absolutely necessary. Pruning cuts should be clean and correctly placed. Pruning should be done in accordance with the American National Standards Institute (ANSI) A300 standards.

Pruning causes an open wound in the tree. Trees do not "heal" they compartmentalize. It is far better to use more small cuts than a few large cuts as small pruning wounds reduce risk while large wounds increase risk. Any wound made today will always remain, but a healthy tree, in the absence of decay in the wound, will 'cover it' with callus tissue. Large, old pruning wounds which did not close with callous tissue often have advanced decay. These wounds are a likely failure point. Mature trees with large wounds have a high risk of failure.

Overweight limbs are a common structural fault in suppressed trees. There are two remedial actions for over-weight limbs (1) prune the limb to reduce the extension of the canopy, or (2) cable the limb to reduce movement. Cables do not hold weight they only stabilize the limb and additionally require annual inspection.

Arborist Classifications

There are different types of Arborists:

Tree Removal and/or Pruning Companies: These companies may be licensed by the State of California to do business as a tree removal company, but they do not necessarily know anything about trees biology.

Arborists: Arborist is a broad term intended to mean someone with specialized knowledge of trees, but it is often used to imply knowledge that is not there.

ISA Certified Arborist: An International Society of Arboriculture Certified Arborist is someone who has trained, met the qualifications for application, and been tested to have specialized knowledge of trees. You can look up certified arborists at the International Society of Arboriculture website: isa-arbor.org.

Consulting Arborist: An American Society of Consulting Arborists Registered Consulting Arborist is someone who has been trained and then tested to have specialized knowledge of trees; and trained and tested to provide high quality reports and documentation. You can look up registered consulting arborists at the American Society of Consulting Arborists website: ASCA-consultants.org.

RECOMMENDATIONS: Summary of Tree Protection Measures for Site Planning and Arborist Recommendations

This preliminary inventory does not include tree specific preservation measures with analysis of the development plan. The Owner and/or Developer should contact the project arborist prior to completion of the grading plans for protection measures for each tree and make sure they are incorporated into the site plans and followed. At a minimum, the project arborist will recommend the following:

- After onsite layout, prior to grading and/or grubbing, an additional arborist inspection should be performed to identify the impact to the trees.
- The project arborist should inspect the tree protection fencing and proposed access ways prior to grading and/or grubbing for compliance with the recommended protection zones.
- Trees to be removed should be chipped and chips reserved onsite.
- Any trees to be removed within the protection zone of a tree to be preserved shall be cut and the stump ground. They shall not be removed by equipment excavation of the stump.
- Clearance pruning, if required, should include removal of all the lower foliage that may interfere with equipment PRIOR to having grading or other equipment on site. The Project Arborist must approve the extent of foliage elevation and oversee the pruning to be performed by a contractor who is an ISA Certified Arborist.
- Clearly designate an area on the site outside the drip line of all trees where construction materials may be stored, and parking can take place. No materials or parking shall take place within the root zones of any protected trees.
- Follow all of the General Development Guidelines, Appendix 3.

Report Prepared by:



Nicole Harrison
ISA Certified Arborist #WC-6500AM, TRAQ
Member: American Society of Consulting Arborists

Attachments

Appendix 1 – Tree Location Map/Development Site Plan
Appendix 2 – Tree Data
Appendix 3 – General Development Guidelines

Bibliography

International Society of Arboriculture. (2015). *Glossary of Arboricultural Terms*. Champaign: International Society of Arboriculture.
L.R., C. (2003). *Reducing Infrastructure Damage by Tree Roots*. Porterville: International Society of Arboriculture.
Matheny, J. C. (1994). *Evaluation of Hazard Trees in Urban Areas, Second Edition*. Champaign: International Society of Arboriculture.
Menzer, K. (2008). *Consulting Arborist Report*.
Smiley. (2008). *Managing Trees During Construction, Best Management Practices*. Champaign: International Society of Arboriculture.
Tree Care Industry Association. (2017). *Tree, Shrub, and Other Woody Plant Management - Standard Practices (Pruning)*. Londonderry: Tree Care Industry Association.
Urban, J. (2008). *Up by the Roots*. Champaign: International Society of Arboriculture.



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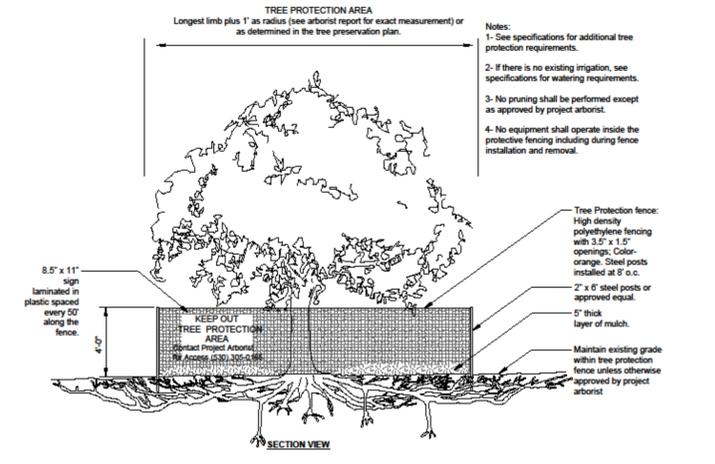
TREE PROTECTION GENERAL REQUIREMENTS

1. The project arborist for this project is California Tree & Landscape Consulting. The primary contact information is Nicole Harrison (530) 305-0165. The project arborist may continue to provide expertise and make additional recommendations during the construction process if and when additional impacts occur or tree response is poor. Monitoring and construction oversight by the project arborist is recommended for all projects and required when a final letter of assessment is required by the jurisdiction.
2. The project arborist should inspect the exclusionary root protection fencing installed by the contractors prior to any grading and/or grubbing for compliance with the recommended protection zones. Additionally, the project arborist shall inspect the fencing at the onset of each phase of construction. The root protection zone for trees is specified as the 'canopy radius' in Appendix 2 in the arborist report unless otherwise specified by the arborist. Note 'dripline' is not an acceptable location for installation of tree protection fencing.
3. The project arborist should directly supervise any clearance pruning, irrigation, fertilization, placement of mulch and/or chemical treatments. If clearance pruning is required, the Project Arborist should approve the extent of foliage elevation and oversee the pruning to be performed by a contractor who is an ISA Certified Arborist. Clearance pruning should include removal of all the lower foliage that may interfere with equipment PRIOR to having grading or other equipment on site.
4. No trunk within the root protection zone of any trees shall be removed using a backhoe or other piece of grading equipment.
5. Clearly designate an area on the site that is outside of the protection area of all trees where construction materials may be stored, and parking can take place. No materials or parking shall take place within the protection zones of any trees on or off the site.
6. Any and all work to be performed inside the protected root zone fencing, including all grading and utility trenching, shall be approved and/or supervised by the project arborist.
7. Trenching, if required, inside the protected root zone shall be approved and/or supervised by the project arborist and may be required to be performed by hand, by a hydraulic or air spade, or other method which will place pipes underneath the roots without damage to the roots.
8. The root protection zone for trees is specified as the 'canopy radius' in Appendix 2 in the arborist report unless otherwise specified by the arborist. Note 'dripline' is not an acceptable location for installation of tree protection fencing.

TENTATIVE BLOSSOM A. COUNTY OF SACRAMENTO MAY 2020

6331 FILBERT

| | |
|---------------------------------------|-------------|
| OWNER: | APP: |
| TOMICH LILIAN O TRUST | THOMAS |
| ATTN: THOMAS TOMICH | 1112 |
| 1112 BUCKNELL DRIVE | DAVIS |
| DAVIS, CA 95616 | (530) |
| (530) 574-2503 | |
| ENGINEER: | PARC: |
| CNA ENGINEERING | 223- |
| 2575 VALLEY ROAD | |
| SACRAMENTO, CA 95621 | |
| (916) 435-3745 | |
| PRESENT USE: | PROP: |
| AR-2 | RD-3 |
| 1 LOT | RD-5 |
| 3.58 AC GROSS | 9.58 |
| 9.24 AC NET | 7.64 |
| SEWER DISPOSAL: | ELEG: |
| SACRAMENTO AREA SEWER DISTRICT | S.M.U. |
| SCHOOL DISTRICT: | PARK: |
| SAN JUAN UNIFIED SCHOOL DISTRICT | ORANG PARKS |
| FIRE DISTRICT: | WATE: |
| SACRAMENTO METROPOLITAN FIRE DISTRICT | ORANG |



TX TREE PROTECTION

TREE PRESERVATION PLAN

>Tree locations are approximate and were collected using ISO apple products.
>Property line information was downloaded from Sacramento County on 2/18/2020.

| | |
|-------------------------|--|
| Property Line | Arborist Rating |
| Measured Tree Canopy | 0 Dead |
| Tree Protection Fencing | 1 Extreme Structure or Health Problems |
| | 2 Major Structure or Health Problems |
| | 3 Fair - Minor Problems |
| | 4 Good - No Apparent Problems |
| | 5 Excellent |



Sheet No.
TPP 1.0

FILBERT AVE

6331 Filbert Ave
Orangevale, Sacramento County, California

Date: 5/1/2020

APPENDIX 2 – TREE DATA

| Field Tag # | Protected By Code | Offsite | Species Common Name | Species Botanical Name | DBH | Measured at | Canopy Radius | Arborist Rating | Dvlpmt Status | Notes |
|-------------|-------------------|---------|----------------------|------------------------|------------|-------------|---------------|--------------------------------------|----------------------|--|
| 4541 | No | | Crape Myrtle | Lagerstromia sp. | 4 | 54 | 10 | 3 Fair - Minor Problems | Proposed for Removal | |
| 4542 | No | | fruiting olive | Olea europea | 6, 8, 9 | 54 | 14 | 2 Major Structure or Health Problems | | |
| 4543 | Canopy | | Southern Magnolia | Magnolia grandiflora | 17 | 54 | 10 | 4 Good - No Apparent Problems | | Some girdling roots should be cut, minor decline in canopy |
| 4544 | No | | Photinia | Photinia x fraseri | 5, 5, 4, 4 | 54 | 12 | 2 Major Structure or Health Problems | | Shrub species |
| 4545 | No | | fruiting olive | Olea europea | 7, 7, 7, 6 | 54 | 16 | 2 Major Structure or Health Problems | | pruned for fruit production, good vigor |
| 4546 | Canopy | | Crape Myrtle | Lagerstromia sp. | 7-2" stems | 54 | 8 | 3 Fair - Minor Problems | | |
| 4547 | Canopy | | Colorado blue spruce | Picea pungens | 6 | 54 | 8 | 2 Major Structure or Health Problems | | canopy raised to 8', diseased with fair to poor canopy remaining |
| 4548 | No | | Hichiya persimmon | Diospyros sp. | 7 | 54 | 17 | 3 Fair - Minor Problems | | |
| 4549 | Canopy | | English Holly | Ilex sp. | 4, 3, 1 | 54 | 4 | 3 Fair - Minor Problems | | |

| Field Tag # | Protected By Code | Offsite | Species Common Name | Species Botanical Name | DBH | Measured at | Canopy Radius | Arborist Rating | Dvlpmt Status | Notes |
|-------------|-------------------|---------|---------------------|------------------------|--------------------|-------------|---------------|-------------------------------|----------------------|--|
| 4550 | No | | Persimmon | Diospyros sp. | 5 | 54 | 5 | 3 Fair - Minor Problems | | |
| 4551 | No | | Eureka lemon | Citrus sp. | 6, 5, 2, 2 | 54 | 14 | 3 Fair - Minor Problems | | |
| 4552 | Canopy | | Japanese maple | Acer palmatum | 3, 2, 2, 2, 2 | 54 | 10 | 3 Fair - Minor Problems | | Large roots, slightly suppressed to the north, appears to have fair to good canopy. Identified in winter |
| 4553 | No | | Persimmon | Diospyros sp. | 6 | 54 | 12 | 3 Fair - Minor Problems | | |
| 4554 | No | | Persimmon | Diospyros sp. | 8 | 18 | 15 | 3 Fair - Minor Problems | | |
| 4555 | No | | Mandarin | Citrus sp. | 4, 3, 2, 4 @ 1â€™™ | 54 | 10 | 3 Fair - Minor Problems | | |
| 4556 | Canopy | | English Holly | Ilex sp. | 4 | 54 | 4 | 3 Fair - Minor Problems | Proposed for Removal | |
| 4557 | Canopy | | Crape Myrtle | Lagerstromia sp. | Multi | 54 | 8 | 3 Fair - Minor Problems | Proposed for Removal | |
| 4558 | Canopy | | English Holly | Ilex sp. | 6 | 54 | 10 | 3 Fair - Minor Problems | Proposed for Removal | |
| 4559 | No | | Unidentified | | 11 | 54 | 15 | 4 Good - No Apparent Problems | Proposed for removal | Identification during dormancy |
| 4560 | No | | Unidentified | | 5 | 54 | 8 | 3 Fair - Minor Problems | Proposed for removal | Identification during dormancy |
| 4561 | No | | Olive | Olea europea | 20 | 18 | 17 | 3 Fair - Minor Problems | Proposed for Removal | |

| Field Tag # | Protected By Code | Offsite | Species Common Name | Species Botanical Name | DBH | Measured at | Canopy Radius | Arborist Rating | Dvlpmt Status | Notes |
|-------------|-------------------|---------|---------------------|------------------------|--|-------------|---------------|--------------------------------------|----------------------|--|
| 4562 | Yes | | Valley oak | Quercus lobata | 18 | 54 | 25 | 3 Fair - Minor Problems | | Fair at flare, some abnormal shape and evidence of bleeding canker, good upright structure, fair canopy and vigor |
| 4563 | Yes | | Valley oak | Quercus lobata | 18 | 54 | 30 | 4 Good - No Apparent Problems | | Weeds around base - no trunk evaluation, fair to good structure, slight lean from suppression, good vigor |
| 4564 | Yes | | Interior Live Oak | Quercus wislizeni | 17 | 54 | 25 | 3 Fair - Minor Problems | Proposed for Removal | In road easement, compacted soil surrounding more than 50% of base, abnormal flare, large limb removed at 4' almost closed, structural limb at 5' south otherwise fair to good structure, upright, fair to good vigor. Note last utility pruning |
| 4565 | No | | Valley oak | Quercus lobata | 4 | 54 | 5 | 4 Good - No Apparent Problems | | |
| 4566 | | | Unidentified | | 10 | 54 | 15 | 4 Good - No Apparent Problems | Proposed for removal | |
| 4567 | Yes | | Interior Live Oak | Quercus wislizeni | 7 | 24 | 12 | 3 Fair - Minor Problems | Proposed for removal | Tractor tree |
| 4568 | Yes | | Valley oak | Quercus lobata | 6, 4, 4, 2 @ 2â€™™. Previously topped, good figure | 54 | 15 | 2 Major Structure or Health Problems | Proposed for removal | |
| 4569 | No | | Valley oak | Quercus lobata | 4 | 48 | 8 | 3 Fair - Minor Problems | | |

| Field Tag # | Protected By Code | Offsite | Species Common Name | Species Botanical Name | DBH | Measured at | Canopy Radius | Arborist Rating | Dvlpmt Status | Notes |
|-------------|-------------------|---------|---------------------|------------------------|--------------------------|-------------|---------------|--------------------------------------|----------------------|---|
| 4570 | Yes | | Valley oak | Quercus lobata | 8 | 12 | 15 | 2 Major Structure or Health Problems | Proposed for removal | Poor with embedded equipment below 2' and poor structural junctions 3-4' |
| 4571 | No | | Valley oak | Quercus lobata | 5 | 54 | 8 | 3 Fair - Minor Problems | Proposed for removal | |
| 4572 | Yes | | Valley oak | Quercus lobata | 26 | 54 | 30 | 4 Good - No Apparent Problems | | |
| 4573 | | Yes | Hackberry | Celtis sp. | 7, 7 (est) | 54 | 15 | 3 Fair - Minor Problems | | est 7, 7. Not visible behind fence approximately 10' off site |
| 4574 | | Yes | Hackberry | Celtis sp. | 14 | 54 | 20 | 3 Fair - Minor Problems | | est. 5' offsite |
| 4575 | Yes | | Valley oak | Quercus lobata | 14 | 1 | 25 | 3 Fair - Minor Problems | | |
| 4576 | | | Unidentified | | 9 (est) | 12 | 12 | 2 Major Structure or Health Problems | | |
| 4577 | Yes | | Interior Live Oak | Quercus wislizeni | 12 (est) | 1 | 15 | 2 Major Structure or Health Problems | | Codominant at 18", approximately five stems imbedded fence wire, good vigor |
| 4578 | | Yes | River birch cluster | Betula sp. | 12, 8, 10, 10 (+ 10, 10) | 54 | 30 | 3 Fair - Minor Problems | | 2 trees behind fence with canopy extending onto site |
| 4579 | No | | Pecan | Carrya illinois | 8 | 54 | 12 | 4 Good - No Apparent Problems | Proposed for removal | nut species. |

| Field Tag # | Protected By Code | Offsite | Species Common Name | Species Botanical Name | DBH | Measured at | Canopy Radius | Arborist Rating | Dvlpmt Status | Notes |
|-------------|-------------------|---------|---------------------|------------------------|---------------------------|-------------|---------------|--------------------------------------|----------------------|---|
| 4580 | Yes | | Valley oak | Quercus lobata | 9 | 36 | 15 | 3 Fair - Minor Problems | | |
| 4581 | Yes | | Valley oak | Quercus lobata | 7, 5, 4 | 12 | 15 | 2 Major Structure or Health Problems | | 2 stems at ground, 3 at 1' |
| 4582 | Yes | | Valley oak | Quercus lobata | 6 | 54 | 8 | 3 Fair - Minor Problems | | Canopy to ground all the way around, abnormal structure at 10' otherwise fair to good |
| 4583 | Yes | | Interior Live Oak | Quercus wislizeni | 6, 6 (est) | 54 | 15 | 2 Major Structure or Health Problems | Proposed for removal | Same as last, (2)6 inch stems or 3 tops at 18-24", and (7 to 10) 2"-4" sprouts |
| 4584 | Yes | | Valley oak | Quercus lobata | 10 (est) | 12 | 15 | 2 Major Structure or Health Problems | Proposed for removal | Very poor structure from topping at 18", approximately 9 main stems with another dozen 1 inch sprouts |
| 4585 | | Yes | Red oak | Quercus rubra | 24 | 24 | 25 | 3 Fair - Minor Problems | | |
| 4586 | No | | almond, Multi-stem | Prunus dulcis | 6, 6, 5, 4, 4, 2, 2, 2, 2 | 54 | 15 | 2 Major Structure or Health Problems | | |
| 4587 | No | | Interior Live Oak | Quercus wislizeni | 5 | 54 | 8 | 3 Fair - Minor Problems | | |
| 4590 | | Yes | Coast redwood | Sequoia sempervirens | 15 | 54 | 15 | 3 Fair - Minor Problems | | Not visible, behind fence |
| 4591 | | Yes | Red oak | Quercus rubra | 15 | 54 | 15 | 3 Fair - Minor Problems | | Same as last |

| Field Tag # | Protected By Code | Offsite | Species Common Name | Species Botanical Name | DBH | Measured at | Canopy Radius | Arborist Rating | Dvlpmt Status | Notes |
|-------------|-------------------|---------|---------------------|------------------------|------|-------------|---------------|--------------------------------------|----------------------|---|
| 4592 | | Yes | Red oak | Quercus rubra | 24 | 54 | 25 | 4 Good - No Apparent Problems | | Not measured. Offsite 10 feet above 2 foot retaining wall. Lower branches overhanging site and may need clearance pruning |
| 4593 | | Yes | Coast redwood | Sequoia sempervirens | 18 | 54 | 15 | 3 Fair - Minor Problems | | |
| 4594 | | Yes | Coast redwood | Sequoia sempervirens | 21 | 54 | 20 | 3 Fair - Minor Problems | | |
| 4595 | | Yes | Coast redwood | Sequoia sempervirens | 22 | 54 | 20 | 4 Good - No Apparent Problems | | |
| 4596 | Canopy | | Cork oak | Quercus suber | 4, 4 | 54 | 9 | 3 Fair - Minor Problems | Proposed for removal | Codominant at ground, crossing branches with wounds, canopy all the way to the ground, very good vigor |
| 4597 | Yes | Yes | Interior Live Oak | Quercus wislizeni | 5 | 54 | 14 | 2 Major Structure or Health Problems | | Good except grows through fence on steep slope, previously topped at 6'. Good vigor. Could be a nice tree if the fence was cut away and topping regrowth is corrected |
| 4598 | No | | Pomegranate | Punica granatum | 6 | 54 | 10 | 4 Good - No Apparent Problems | | |
| 4599 | No | | mulberry | Morus sp. | 20 | 12 | 27 | 4 Good - No Apparent Problems | | |
| 4600 | No | | Unidentified | | 5 | 54 | 9 | 4 Good - No Apparent Problems | Proposed for removal | |
| 9143 | Yes | | Valley oak | Quercus lobata | 13 | 54 | 30 | 3 Fair - Minor Problems | | Good at flare, lean from suppression to mid canopy, most of canopy is extended South, fair structural limb development and vigor. Should be fair to poor |

APPENDIX 3

GENERAL PRACTICES FOR TREE PROTECTION

Definitions

Root zone: The roots of trees grow fairly close to the surface of the soil, and spread out in a radial direction from the trunk of tree. A general rule of thumb is that they spread 2 to 3 times the radius of the canopy, or 1 to 1 ½ times the height of the tree. It is generally accepted that disturbance to root zones should be kept as far as possible from the trunk of a tree.

Inner Bark: The bark on large valley oaks and coast live oaks is quite thick, usually 1" to 2". If the bark is knocked off a tree, the inner bark, or cambial region, is exposed or removed. The cambial zone is the area of tissue responsible for adding new layers to the tree each year, so by removing it, the tree can only grow new tissue from the edges of the wound. In addition, the wood of the tree is exposed to decay fungi, so the trunk present at the time of the injury becomes susceptible to decay. Tree protection measures require that no activities occur which can knock the bark off the trees.

Methods Used in Tree Protection:

No matter how detailed Tree Protection Measures are in the initial Arborist Report, they will not accomplish their stated purpose unless they are applied to individual trees and a Project Arborist is hired to oversee the construction. The Project Arborist should have the ability to enforce the Protection Measures. The Project Arborist should be hired as soon as possible to assist in design and to become familiar with the project. He must be able to read and understand the project drawings and interpret the specifications. He should also have the ability to cooperate with the contractor, incorporating the contractor's ideas on how to accomplish the protection measures, wherever possible. It is advisable for the Project Arborist to be present at the Pre-Bid tour of the site, to answer questions the contractors may have about Tree Protection Measures. This also lets the contractors know how important tree preservation is to the developer.

Root Protection Zone (RPZ): Since in most construction projects it is not possible to protect the entire root zone of a tree, a Root Protection Zone is established for each tree to be preserved. The minimum Root Protection Zone is the area underneath the tree's canopy (out to the dripline, or edge of the canopy), plus 10'. The Project Arborist must approve work within the RPZ.

Irrigate, Fertilize, Mulch: Prior to grading on the site near any tree, the area within the Tree Protection fence should be fertilized with 4 pounds of nitrogen per 1000 square feet, and the fertilizer irrigated in. The irrigation should percolate at least 24 inches into the soil. This should be done no less than 2 weeks prior to grading or other root disturbing activities. After irrigating, cover the RPZ with at least 12" of leaf and twig mulch. Such mulch can be obtained from chipping or grinding the limbs of any trees removed on the site. Acceptable mulches can be obtained from nurseries or other commercial sources. Fibrous or shredded redwood or cedar bark mulch shall not be used anywhere on site.

Fence: Fence around the Root Protection Zone and restrict activity therein to prevent soil compaction by vehicles, foot traffic or material storage. The fenced area shall be off limits to all construction equipment, unless there is express written notification provided by the Project Arborist, and impacts are discussed and mitigated prior to work commencing.

No storage or cleaning of equipment or materials, or parking of any equipment can take place within the fenced off area, known as the RPZ.

The fence should be highly visible, and stout enough to keep vehicles and other equipment out. I recommend the fence be made of orange plastic protective fencing, kept in place by t-posts set no farther apart than 6’.

In areas of intense impact, a 6’ chain link fence is preferred.

In areas with many trees, the RPZ can be fenced as one unit, rather than separately for each tree.

Where tree trunks are within 3’ of the construction area, place 2” by 4” boards vertically against the tree trunks, even if fenced off. Hold the boards in place with wire. Do not nail them directly to the tree. The purpose of the boards is to protect the trunk, should any equipment stray into the RPZ.

Elevate Foliage: Where indicated, remove lower foliage from a tree to prevent limb breakage by equipment. Low foliage can usually be removed without harming the tree, unless more than 25% of the foliage is removed. Branches need to be removed at the anatomically correct location in order to prevent decay organisms from entering the trunk. For this reason, a contractor who is an ISA Certified Arborist should perform all pruning on protected trees.³

Expose and Cut Roots: Breaking roots with a backhoe, or crushing them with a grader, causes significant injury, which may subject the roots to decay. Ripping roots may cause them to splinter toward the base of the tree, creating much more injury than a clean cut would make. At any location where the root zone of a tree will be impacted by a trench or a cut (including a cut required for a fill and compaction), the roots shall be exposed with either a backhoe digging radially to the trunk, by hand digging, or by a hydraulic air spade, and then cut cleanly with a sharp instrument, such as chainsaw with a carbide chain. Once the roots are severed, the area behind the cut should be moistened and mulched. A root protection fence should also be erected to protect the remaining roots, if it is not already in place. Further grading or backhoe work required outside the established RPZ can then continue without further protection measures.

Protect Roots in Deeper Trenches: The location of utilities on the site can be very detrimental to trees. Design the project to use as few trenches as possible, and to keep them away from the major trees to be protected. Wherever possible, in areas where trenches will be very deep, consider boring under the roots of the trees, rather than digging the trench through the roots. This technique can be quite useful for utility trenches and pipelines.

Protect Roots in Small Trenches: After all construction is complete on a site, it is not unusual for the landscape contractor to come in and sever a large number of “preserved” roots during the installation of irrigation systems. The Project Arborist must therefore approve the landscape and irrigation plans. The irrigation system needs to be designed so the main lines are located outside the root zone of major trees, and the secondary lines are either laid on the surface (drip systems), or carefully dug with a hydraulic or air spade, and the flexible pipe fed underneath the major roots.

³ International Society of Arboriculture (ISA), maintains a program of Certifying individuals. Each Certified Arborist has a number and must maintain continuing education credits to remain Certified.

Design the irrigation system so it can slowly apply water (no more than $\frac{1}{4}$ " to $\frac{1}{2}$ " of water per hour) over a longer period of time. This allows deep soaking of root zones. The system also needs to accommodate infrequent irrigation settings of once or twice a month, rather than several times a week.

Monitoring Tree Health During and After Construction: The Project Arborist should visit the site at least twice a month during construction to be certain the tree protection measures are being followed, to monitor the health of impacted trees, and make recommendations as to irrigation or other needs. After construction is complete, the arborist should monitor the site monthly for one year and make recommendations for care where needed. If longer term monitoring is required, the arborist should report this to the developer and the planning agency overseeing the project.