

ARBORIST REPORT-
Preliminary Tree Resource Analysis, Construction Impact &
Protection Plan for:

Riverfront Apartments
412- 508 Front Street, Santa Cruz, CA 95060
July 18, 2018
Revised 9/9/2018

Prepared for:

Owen Lawlor
SC Riverfront LLC
P.O. Box 377
Santa Cruz, CA 95061-0377

Prepared by:



ISA Certified Arborist WE0681A

Table of Contents

- SUMMARY** 1
 - Background..... 1
 - Assignment 2
 - Limits of the Assignment 2
 - Purpose and use of the report..... 2
 - Resources..... 2
- OBSERVATIONS** 3
- DISCUSSION**..... 4
 - Species List..... 4
 - Condition Rating 5
 - Suitability for Preservation 5
 - Impact Level..... 5
 - Tree Evaluation and Recording Methods 5
 - Tree Protection Zone 6
 - Critical Root Zone 6
 - Construction Impacts to Subject Trees 7
 - Mitigation Measures for Subject Trees..... 8
 - Tree Protection Specifications..... 9
 - Replacement Trees..... 10
- CONCLUSION**..... 11
- RECOMMENDATIONS**..... 12

Attachments: Appendix A -H

Appendix A – Tree Assessment Chart

Appendix B – Criteria for Tree Assessment Chart

Appendix C - Tree Location Site Plan Sheet

Appendix D - Bibliography

Appendix E – Subject Tree Images

Appendix F - Tree Protection Guidelines & Restrictions

- Protecting Trees During Construction
- Project Arborist Duties & Inspection Schedule
- Tree Protection Fencing
- Tree Protection Signs
- Monitoring
- Root Pruning
- Tree Work Standards & Qualifications
- City of Santa Cruz Heritage Tree & Shrub Designation
- City of Santa Cruz – Land Use Permits & Findings
Part 21: Watercourse Development Permit
- City of Santa Cruz – Approved Street Tree List

Appendix H - Assumptions & Limiting Conditions

SUMMARY

- This report was revised on 9/9/2018, to include *tree protection specifications*. Revised text is printed in red.
- A six-story, mixed-use building is proposed at 418 to 508 Front Street, Santa Cruz.
- The existing commercial buildings will be demolished and replaced with the new building.
- Thirty-two trees within or near the project limits were inventoried.
- Most of the trees inventoried were in either good or fair condition.
- The twenty-six “protected” trees located within the project limits are primarily divided into two categories, including *street trees* located along Front Street, and *riparian trees* located along the river corridor.
- One “protected” tree located within the project limits is categorized as a *private* tree.
- One tree located within the project limits is categorized as a *not “protected” private* tree.
- Five “protected” trees inventoried are located along river corridor adjacent to, but outside of, project limits.
- Eight of the twenty – six “protected” trees within the project limits, are recommended to be retained.
- Eighteen of the twenty –six “protected” trees within the project limits, are recommended for removal.
- Seventeen of the twenty – six “protected” trees will be significantly impacted by the proposed project and their removal is recommended.
- One of the twenty-six “protected” trees are in poor condition and its removal is recommended.
- Mitigation measures for retained trees are specified and protection methods detailed.
- When final construction plans are submitted, additional protection specifications may be required.
- If tree removals are permitted by approval authority, replacement trees will be required.

Background

Plans have been submitted to the City of Santa Cruz Planning Department, for a six -story mixed use building replacing the existing commercial buildings at 418 to 508 Front Street, Santa Cruz. Mr. Owen Lawlor has requested my services, to assess the condition of 26 “protected” trees, 1 not “protected” tree and 6 “protected” trees on property immediately adjacent to the project limits, and the construction impacts that may affect them. Further, to provide a report with my findings and recommendations to meet City of Santa Cruz planning requirements.

Assignment

Provide an arborist report that includes an assessment of the trees within the project area. The assessment is to include the species, size (trunk diameter, height and canopy spread), condition (health and structure), and suitability for preservation ratings.

To complete this assignment, the following services were performed:

- **Tree Resource Evaluation:** Inventory, evaluate and assign suitability for preservation ratings for subject trees. Tag trees with numbered metal tags.
- **Plan Review: Reviewed provided plans including:** Civil Plan Set by BkF Engineers, *Riverfront Apartments 412-508 Front Street, Santa Cruz* dated 6/25/2018.
- **Construction Impact Assessment:** Combine tree resource data with anticipated construction impacts, to provide recommendations for removal or retention of trees.
- **Mapping:** Tree canopies were plotted onto: *Topographic Map & Boundary Survey* by Bowman & Williams Engineers dated, 1/27/2016

Limits of the Assignment

The information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection on July 13, 2018.

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

Purpose and use of the report

The report is intended to identify all the trees within the plan area that could be affected by a project. The report is to be used by the developer, their agents, and the City of Santa Cruz as a reference for existing tree conditions and to help satisfy the City of Santa Cruz planning requirements.

Resources

All information within this report is based on site plans as of the date of this report.

Resources are as follows:

- Civil Plan Set by BkF Engineers dated, 6/25/2018.
- Topographic Map & Boundary Survey by Bowman & Williams Engineers dated, 1/27/2016
- Site Visit, Tree Inventory & Condition Evaluation at, 412 - 508 Front Street and River Corridor area adjacent to 412 -508 Front Street on July 13, 2018.
- City of Santa Cruz Municipal Code – Chapter 9.56 *Preservation of Heritage Trees* (applicable sections).

OBSERVATIONS

The property is located at 418 to 508 Front Street, Santa Cruz. The project limits are bordered on the north by an adjacent commercial building and on the south by a parking lot. The project limit to the west is Front Street, and to the east, the river bank bike path.

The inventoried trees are located adjacent to Front Street (7 street trees, one private tree), or along the river bank (levee), immediately east of the existing commercial buildings (24 trees). This group of trees function as riparian trees as part of the river corridor. One private tree is located at the base of the levee, just east of a commercial building.

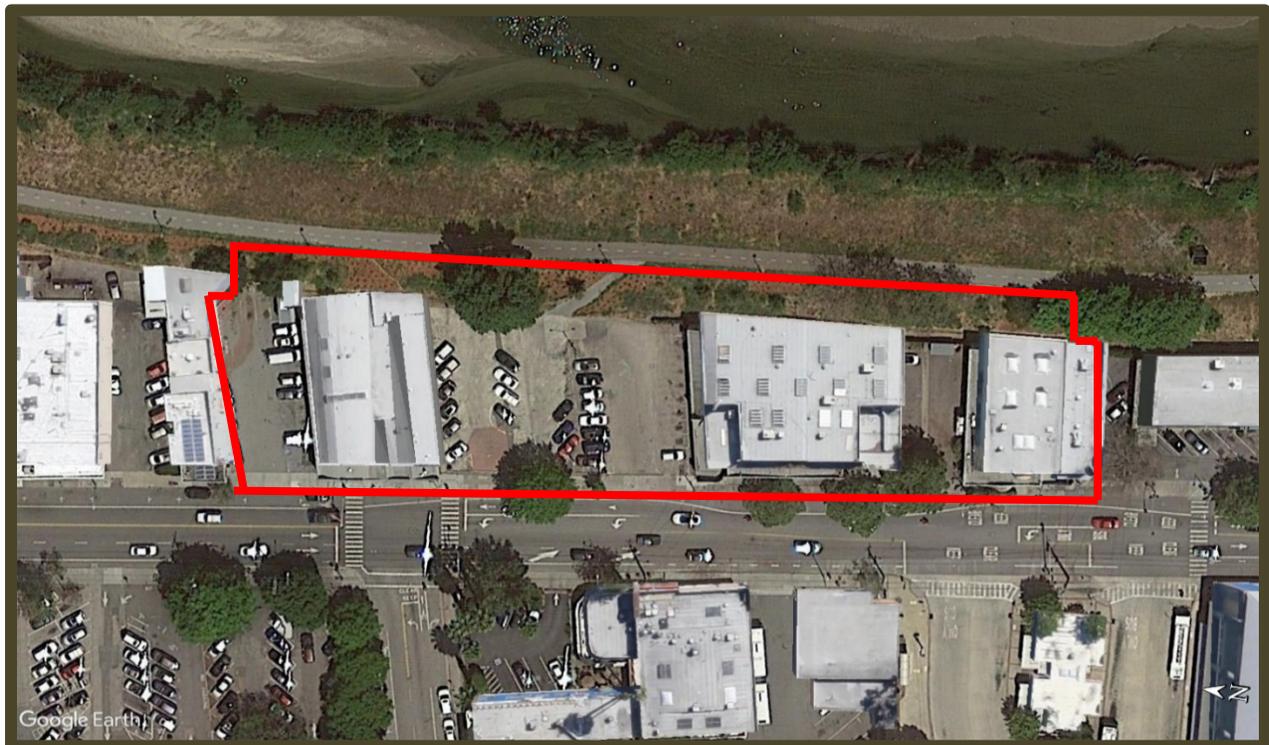
Four categories of trees were inventoried for the proposed project.

Seven trees are categorized as “street trees”, according to the City of Santa Cruz Municipal code. The tree species in this group includes, red oak (*Quercus rubra*), London plane tree (*Platanus acerifolia*), and European white birch (*Betula pendula*).

Twenty-three trees are categorized as “riparian, river corridor” and are under jurisdiction of U.S. Army Corps of Engineers, State of California and the City of Santa Cruz. Eight tree species, (primarily natives and one introduced genera), comprise this group including, California buckeye (*Aesculus californica*), Coast Live Oak (*Quercus agrifolia*), Italian Stone pine (*Pinus pinea*), Cork oak (*Quercus suber*), Fremont Cottonwood (*Populus fremontii*), California sycamore (*Platanus racemosa*), Bigleaf maple (*Acer macrophyllum*) and Box elder (*Acer negundo*).

One tree is categorized as a private “protected” tree. The tree species is silk tree, (*Albezia julibrissin*).

The remaining category of trees is a single, not “protected” tree. The tree species is red-leaf photinia, (*Photinia fraseri*).



Proposed Riverfront Apartments, 418 – 508 Front Street – Approximate Project Boundaries (in red)

DISCUSSION

Species List

TOTAL SUBJECT TREES: 31 Trees

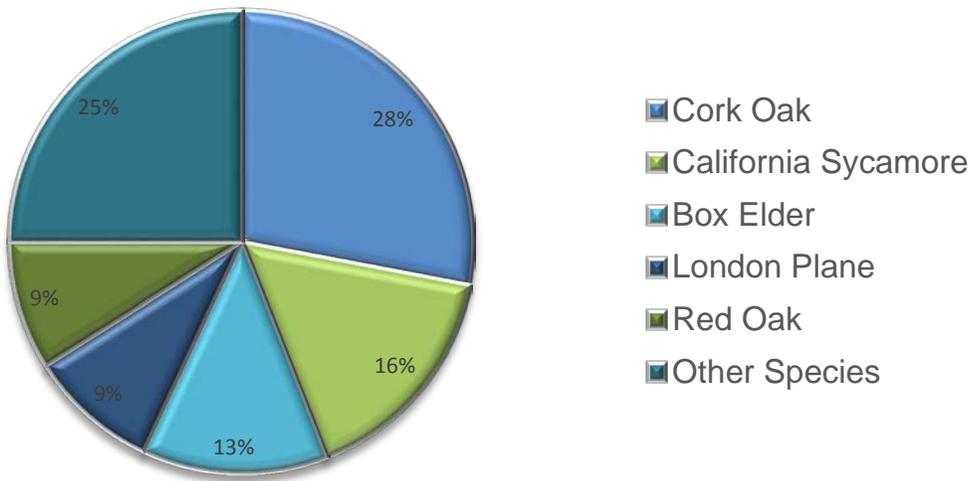
Protected: 31

9	Cork Oak	(<i>Quercus suber</i>)
5	California sycamore	(<i>Platanus racemosa</i>)
4	Box Elder	(<i>Acer negundo</i>)
3	London Plane Tree	(<i>Platanus acerifolia</i>)
3	Red Oak	(<i>Querecus rubra</i>)
1	Silk Tree	(<i>Albezia julibrissin</i>)
1	European White Birch	(<i>Betula pendula</i>)
1	California buckeye	(<i>Aesculus californica</i>)
1	Italian Stone Pine	(<i>Pinus pinea</i>)
1	Coast Live Oak	(<i>Quercus agrifolia</i>)
1	Fremont Cottonwood	(<i>Populus fremontii</i>)
1	Bigleaf Maple	(<i>Acer macrophyllum</i>)

Not Protected: 1

1	Red-leaved photinia	(<i>Photinia fraseri</i>)
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Chart #1 - Population by Percentage



Condition Rating

A trees condition is determined by an assessing both the **health** and **structure**, then combining the two factors to reach a *condition rating*. Tree condition is rated as poor, fair or good. The quantity of trees assigned for each category (good, fair or poor), is indicated below:

Tree Condition Rating

- Good - 17
- Fair - 13
- Poor - 2

Suitability for Preservation

A trees suitability for preservation is determined based on its health, structure, age, species characteristics and longevity using a scale of good, fair or poor. The quantity of trees assigned to each category (good, fair or poor), is listed below.

Suitability Rating

- Good - 17
- Fair – 14
- Poor - 1

Impact Level

Impact level rates the degree a tree may be impacted by construction activity and is primarily determined by how close the construction procedures occur to the tree. Construction impacts are rated as low, moderate, high. The quantity of trees assigned for each category (low, moderate, high), is indicated below:

Impact Rating

- Low - 6
- Moderate – 8
- High - 18

Tree Evaluation and Recording Methods

Site evaluations were made on 7/13/2018. *The inventory included all trees within the project limits , and five “protected” trees adjacent to, but outside the project limits.* The health and structural **condition** of each tree was assessed and recorded. Based on the trees health and structural condition, each trees **suitability for preservation** was rated and recorded.

The recorded data is included in the *Tree Assessment Chart, Appendix A*, of this report. Tree numbers were plotted on the attached *Tree Protection Plan sheets*. **To correlate the data in the Tree Assessment Chart to the tree’s location on the site, refer to the Tree Location Site Plan sheet - Appendix C.**

Tree Protection Zone

The tree protection zone (TPZ), is a defined area within which certain activities are prohibited or restricted to minimize potential injury to designated trees during construction.

The size of the optimal TPZ can be determined by a formula based on: 1) trunk diameter 2) species tolerance to construction impacts, and 3) tree age (Matheny, N. and Clark, J 1998). In some instances, tree drip line is used as the TPZ. Development constraints can also influence the final size of the tree protection zone.

Fencing is installed to delineate the (TPZ), and to protect tree roots, trunk, and scaffold branches from construction equipment. *The fenced protection area may be smaller than the optimal or designated TPZ area in some circumstances.* Tree protection may also involve the armoring of the tree trunk and/or scaffold limbs with barriers to prevent mechanical damage from construction equipment. *See Tree Protection Guidelines & Restrictions – Appendix E.*

Once the TPZ is delineated and fenced (prior to any site work, equipment and materials move in), construction activities are only to be permitted within the TPZ if allowed for and specified by the project arborist.

Where tree protection fencing cannot be used, or as an additional protection from heavy equipment, tree wrap may be used. Wooden slats at least one inch thick are to be bound securely, edge to edge, around the trunk. A single layer or more 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 City arborist or Project arborist. Straw wattle may also be used as a trunk wrap and secured with orange plastic fencing.

Data has been entered in the *Tree Assessment Chart – Appendix A*, which indicates the optimal Tree Protection Zone for each tree.

Additional general tree protection guidelines are included in *Tree Protection Guidelines & Restrictions – Appendix G*.

Critical Root Zone

Critical Root Zone (CRZ) is the area of soil around the trunk of a tree where roots are located that provide critical stability, uptake of water and nutrients required for a tree's survival. The CRZ is the minimum distance from the trunk that trenching that requires root cutting should occur and can be calculated as three to the five times the trunk Diameter at Breast Height (DBH). For example, if a tree is one foot in trunk diameter then the CRZ is three to five feet from the trunk location. We will often average this as four times the trunk diameter or 1ft. DBH = 4ft. CRZ (Smiley, E.T., Fraedrich, B. and Hendrickson, N. 2007).

Construction Impacts to Subject Trees

Construction Phases Affecting Subject Trees – City Street Trees Along Front Street:

Construction phases that will impact trees along Front Street include:

1. Demolition and removal of existing sidewalk and base rock.
2. Removal and capping (retire), of existing sanitary sewer laterals.
3. Removal and capping (retire), of existing $\frac{3}{4}$ " water service.
4. Installation of new 6" sanitary sewer lateral.
5. Installation of new base rock and concrete sidewalk.
6. Installation of new building.
7. **Access and staging for project.**

Construction Phases Affecting Subject Trees – Riparian Trees along River Corridor:

Construction phases that will impact trees along the River Corridor include:

1. Installation of fill material and new plaza, between the new building and the top of the levee (bike path).
2. Installation of retaining walls at the north and south ends of the project limits along the river bank (levee).
3. Installation of new building.

Impacts to Subject Trees - City Street Trees Along Front Street:

1. Demolition and removal of existing sidewalk will potentially impact trees T4, T5, T6, T7 & T8, root zone, trunk. Lower scaffolds T7.
2. Removal and capping of existing sanitary sewer will potentially impact trees T4 & T6, root zone, trunk.
3. Removal and capping of existing $\frac{3}{4}$ " water service will potentially impact trees T4 & T7, root zone, trunk. Lower scaffolds T7.
4. Installation of new 6" sanitary sewer lateral will potentially impact tree T5, root zone, trunk.
5. Installation of new base rock and concrete sidewalk will potentially impact trees T4 – T8, root zone.
6. Installation of new building will impact trees T1, T4, T5 & T7, canopies.
7. **Access and staging of equipment may potentially impact the root zone of tree T1.**

Impacts to Subject Trees - Riparian Trees along River Corridor

1. Installation of fill material between the new building and the top of the levee (bike path) will impact trees T11 – T27, entire tree. Grade will be raised to near or same elevation, as top of levee. Trees are within footprint of grade elevation increase for new river walk plaza, and removal of these trees will be required.
2. Installation of retaining walls at the north and south ends of the project limits along the river bank (levee), will impact trees T10, T28 & T29, root zone. Lower scaffolds T10.
3. Installation of new building. Tree T10, canopy.

Mitigation Measures for Retained Trees

The trees retained on this project will require the following methods to protect them from the impacts described above and to minimize root or canopy loss during the demolition and construction phases. Some of the demolition and construction work could affect the critical root zones of selected trees.

- Tree Protection Fencing (all trees).
- Trunk and scaffold protection wrap (street trees).
- Supervised, selective and non-selective root pruning.
- Supervised, targeted canopy clearance pruning.

Detailed descriptions of the protection requirements (mitigation methods), listed above are specified on page 9 below. These specifications are included on the attached Tree Protection Plan sheets T1 & T2. Plan sheets T1 & T2 shall become an element of the final plan set.

*When final civil drawings are submitted, additional tree protections may be specified in an addendum or revision to this report and included on the *Tree Protection Plan* sheets T1 & T2.*

Tree Protection Specifications & Recommended Sequence

Street Trees, Trees T3 – T8

1. Install tree trunk protection as indicated on Sheet T2.
2. Install tree protection fencing as indicated on Sheet T2.
3. Project arborist shall be notified 24 Hours in advance, if temporary removal of tree protection fencing to accomplish demolition and/or installation of hardscape or utility elements is required.
4. Removal of existing concrete sidewalk within the tree protection zone, shall be accomplished with jack hammer equipment and pieces hand loaded.
5. Excavation and forming for new sidewalk/curb and gutter shall be supervised by project arborist.
6. Root pruning as necessary for new sidewalk/curb and gutter shall be supervised by project arborist.

River Corridor, Trees T10, 28 & 29

1. Install tree protection fencing as indicated on Sheet T2.
2. Project arborist shall be notified 24 Hours in advance, if temporary removal of tree protection fencing to accomplish installation of retaining wall elements is required.
3. Stake for retaining wall locations.
4. Field adjustments of retaining walls shall be made to reduce impacts to trees.
5. Grading for retaining walls within the canopy of trees shall be by hand only.
6. Excavation for retaining wall posts shall be accomplished by hand or with machinery that minimizes impacts to trees.
7. Root pruning for installation of posts or walls shall be supervised by project arborist.

Replacement Trees

As mitigation for trees removed, replacement trees will be required. The replacement requirements may vary for the category of tree replaced. For this project, the two primary categories or groups of trees includes the trees along Front Street, and the riparian trees along the river corridor. The street trees are regulated by the City of Santa Cruz and the riparian trees are regulated by the U.S. Army Corps of Engineers, State of California and the City of Santa Cruz.

Replacement Trees for City of Santa Cruz Street Trees:

- For each tree removed, one replacement tree is required. In some situations, the city will provide 15-gallon trees of an approved street tree species.
- Replacement trees along Front Street shall be London Plane 'Columbia' (*Platanus acerifolia* 'Columbia').
- If street trees are replaced, an approved cast iron grate must be installed (Neenah Foundry #8710) with each tree.
- Applicants may elect to pay an in-lieu fee to the tree trust fund of \$150 for off- site mitigation. (Contribution to the Tree Trust Fund are used to purchase street trees, trees for projects, etc.)
- If the \$250.00 refundable bond is placed and the tree(s) are replanted, permittee must contact the City Urban Forester, 831-420-5246 after 3 months of establishment to the \$250.00 bond returned. Once the permit is issued there is a 10-day appeal period as required by ordinance before the permit becomes effective.
- If no appeal is filed, the permit is valid for 45 days. Aggrieved parties wishing to appeal approval of a tree permit may submit a tree appeal application and \$100 fee to the Parks and Recreation Department.
- If you choose to make a monetary donation to the City's Tree Trust Fund, your donation is used to purchase street trees to be planted in the City of Santa Cruz.

Replacement Trees for Riparian Trees along River Corridor:

The river corridor area is regulated by multiple agencies including:

- U.S. Army Corps of Engineers
- California Department of Fish and Wildlife – Lake and Streambed Alteration Program
- City of Santa Cruz – Chapter 28.08 *Land Use Permits & Findings*, Part 21: Watercourse Development Permit (Applicable code attached to appendix of this report)

The City of Santa Cruz is requiring that all replacement trees along the river corridor be a native riparian species.

After submittal of development documents for this project is completed, additional specific requirements may be generated by the regulating agencies regarding tree removal and replacement.

CONCLUSION

- A six-story, mixed-use building is proposed at 418 to 508 Front Street, Santa Cruz.
- The existing commercial buildings will be demolished and replaced with the new building.
- Thirty-two trees comprised of thirteen species, within or near the project limits were inventoried.
- Most of the trees inventoried were in good or fair condition.
- Thirty-one trees inventoried are “protected” trees.
- One tree inventoried is not “protected”.
- The twenty-six “protected” trees located within the project limits are primarily divided into two categories, including *street trees* located along Front Street, and *riparian trees* located along the river corridor.
- One “protected” tree located within the project limits is categorized as a *private* tree.
- One tree located within the project limits is categorized as a *not* “protected” *private* tree.
- Five “protected” trees inventoried are located along the river corridor adjacent to, but outside of, project limits.
- Eight of the twenty-six “protected” trees within the project limits, are recommended to be retained.
- Eighteen of the twenty-six “protected” trees within the project limits, are recommended for removal.
- Seventeen of the twenty-six “protected” trees will be significantly impacted by the proposed project and their removal is recommended.
- One of the twenty-six “protected” trees are in poor condition and its removal is recommended.
- Mitigation measures for retained trees will be required and protection methods will be specified after review of current submittal documents is completed and final construction plans are submitted.
- If tree removals are permitted by approval authority, replacement trees will be required.
- Regulating agencies for this project include, the U.S Army Corps of Engineers, California State Department of Fish and Wildlife and the City of Santa Cruz.

RECOMMENDATIONS

1. Obtain all necessary permits prior to removing or significantly altering any trees on site.
2. Remove all trees significantly impacted by the project.
3. Plant one replacement street tree for every street tree removed along Front Street, including a Neenah Foundry #8710 cast iron grate with each tree.
4. Plant replacement trees for trees removed along the river corridor as directed by the multiple regulating agencies. **All replacement trees shall be native riparian species.**
5. **Clearance prune box elders T28-T32, to allow adequate light from light post along Riverwalk.**
6. Ensure that all tree protection requirements for retained trees are executed. More detailed tree protection specifications will be included if necessary, after review of current submittal documents is completed and final construction plans are submitted.
7. This report is based on preliminary plan sets. Alterations to the site plan may change the evaluations and recommendations contained in this report.

Respectfully submitted,

Kurt Fouts

Kurt Fouts ISA Certified Arborist WE0681A



Riverfront Apartments, 412-508 Front Street, Santa Cruz, CA. 95060

Tree Assessment Chart - Appendix A

Suitability for Preservation Ratings:

Good: Trees in good health and structural condition with potential for longevity on the site

Fair: Trees in fair health and/or with structural defects that may be reduced with treatment procedures

Poor: Trees in poor health and/or with poor structure that cannot be effectively abated with treatment

Retention or Removal Code:

RT: Retain Tree

RI: Remove Due to Construction Impacts

I.M. Impacts Can Be Mitigated With Pre-Construction Treatments

R.C. Remove Due to Condition

Protected Tree City of Santa Cruz Any tree 14 inches or greater in diameter measured at 4.5 feet above grade. Street trees regardless of size.

Riparian Trees (River Corridor) Any tree regardless of size is protected.

Tree #	Species	Trunk Diameter @ 54 inches a.g.	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (in feet)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
T1	mimosa (<i>Albezia julibrissin</i>)	24"	Yes	23'X50'	Good	Good	Good	24'	Low (Root loss - compaction, canopy loss, clearance pruning)	R.T.	Outside of project limits. May require clearance pruning for building construction and equipment access. Potential root impacts due to equipment access point. Very limited rooting area relative to size of tree. Minor deadwood and decay along trunk.
T2	red oak (<i>Quercus rubra</i>)	12"	Yes	32'X20'	Poor	Fair	Poor	10'	Low (Root loss - excavation)	R.C.	Street tree. Declining. Extremely limited canopy. Terminal dieback up to 4" diameter limbs. > 75% of foliar canopy is from epicormic growth. Basal area of trunk oozing from fungal or bacterial infection.
T3	London plane tree (<i>Platanus x hispanica</i>)	24"	Yes	40'X32'	Good	Good	Good	18'	High (Within foot print of proposed apartments)	R.I.	Street tree. Tree is set back behind sidewalk in parking planter. Minor fungal leaf diseases, anthracnose (<i>Apiognomonina veneta</i>), powdery mildew (<i>Microsphaera sp.</i>) on north side of canopy.
T4	London plane tree	16"	Yes	40'X32'	Fair	Good	Fair	12'	Moderate (Root loss - excavation, compaction, canopy loss - clearance pruning)	R.T.	Street tree. Requires clearance pruning for construction of new building. Moderate fungal leaf diseases, anthracnose (<i>Apiognomonina veneta</i>), powdery mildew (<i>Microsphaera sp.</i>), 15% of canopy.
 <p>826 Monterey Avenue Capitola, CA 95010 831-359-3607 scharborgrounds@yahoo.com</p>							Page 1 of 6			7/15/2018	

Riverfront Apartments, 412-508 Front Street, Santa Cruz, CA. 95060

Tree Assessment Chart - Appendix A

Tree #	Species	Trunk Diameter @ 54 inches a.g.	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (in feet)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
T5	London plane tree (<i>Platanus x hispanica</i>)	15"	Yes	40'X32'	Fair	Good	Fair	12'	Moderate (Root loss - excavation, compaction, canopy loss-clearance pruning)	R.T.	Street tree. Requires clearance pruning for construction of new building. Moderate fungal leaf diseases, anthracnose (<i>Apiognomonia veneta</i>), powdery mildew (<i>Microsphaera</i> sp.), 15% of canopy. Requires clearance pruning for construction of new apartments.
T6	red oak (<i>Quercus rubra</i>)	5"	Yes	15'X12'	Good	Good	Good	6'	Moderate (Root loss - excavation, compaction)	R.T.	Street tree. Minor insect (aphid, <i>Euceraaphis gillettri</i> , <i>Pterocallis alni</i>), & sooty mold (several genera), fungal infestation.
T7	red oak	15"	Yes	45'X50'	Good	Good	Good	15'	Moderate (Root loss - excavation, compaction, canopy loss-clearance pruning)	R.T.	Street tree. Requires clearance pruning for construction of new building. Moderate insect (aphid, <i>Euceraaphis gillettri</i> , <i>Pterocallis alni</i>), & sooty mold (several genera), fungal infestation.
T8	white barked Himalayan birch (<i>Betula utilis</i> var. <i>jacquemontii</i>)	5"	Yes	15'X12'	Good	Fair	Good	6'	Moderate (Root loss - excavation, compaction, canopy loss-clearance pruning)	R.T.	
T9	California buckeye (<i>Aesculus californica</i>)	4",3",3"	Yes	10'X10'	Good	Good	Good	7'	Low to none (Root loss-outside project limits)	R.T.	Located along river levee, outside (north), of project limits.
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Riverfront Apartments, 412-508 Front Street, Santa Cruz, CA. 95060

Tree Assessment Chart - Appendix A

Tree #	Species	Trunk Diameter @ 4.5'	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (in feet)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
T10	Italian stone pine (<i>Pinus pinea</i>)	20"	Yes	25'X40'	Fair	Good	Good	15'	Moderate to High (Root loss - excavation, compaction, canopy loss - clearance pruning) Within < 6' of terrace structure.	R.T.	May require removal depending on placement and specifications of retaining wall construction. Trunk is close to proposed terrace structure (retaining wall). Recommend field adjustment of terrace structure to reduce impacts to tree. Requires clearance pruning for construction of new building. Low scaffold branches. Minor infestation of pine bark aldehyd (<i>Pineus sp.</i>).
T11	coast live oak (<i>Quercus agrifolia</i>)	8",6"	Yes	35'X40'	Good	Fair	Good	15'	High (Within foot print of plaza)	R.I.	Low branching canopy structure.
T12	cork oak (<i>Quercus suber</i>)	5"	Yes	15'X15'	Good	Good	Good	7'	High (Within foot print of plaza)	R.I.	Suppressed growth habit, crowded, within 12' of larger adjacent coast live oak tree, T10.
T13	cork oak	4"	Yes	10'X8'	Fair	Good	Good	6'	High (Within foot print of plaza)	R.I.	
T14	red-leaf photinia (<i>Photinia fraseri</i>)	4"	No	12'X10'	Fair	Fair	Fair	6'	High (Within foot print of plaza)	R.I.	Canopy is thin. Water requirements not being met.
T15	cork oak	4",3"	Yes	12'X10'	Good	Fair	Good	7'	High (Within foot print of plaza)	R.I.	Suppressed growth habit, crowded by larger adjacent alder, T16. Trunk leans to north.
T16	Fremont cottonwood (<i>Populus fremontii</i>)	24"	Yes	65'X55'	Fair	Fair	Fair	25'	High (Within foot print of plaza)	R.I.	Trunk leans 10 degrees to west. Moderate insect (aphid, <i>Periphyllus populicola</i>), & sooty mold (several genera), fungul infestation.
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Riverfront Apartments, 412-508 Front Street, Santa Cruz, CA. 95060

Tree Assessment Chart - Appendix A

Tree #	Species	Trunk Diameter @ 4.5'	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (in feet)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
T17	cork oak (<i>Quercus suber</i>)	6"	Yes	18'X12'	Good	Good	Good	6'	High (Within foot print of plaza)	R.I.	
T18	cork oak	6"	Yes	15'X12'	Good	Good	Good	6'	High (Within foot print of plaza)	R.I.	
T19	cork oak	4"	Yes	12'X10'	Good	Good	Good	5'	High (Within foot print of plaza)	R.I.	
T20	cork oak	5",3"	Yes	12'X10'	Good	Good	Good	5'	High (Within foot print of plaza)	R.I.	
T21	California sycamore (<i>Platanus racemosa</i>)	19"	Yes	45'X35'	Poor	Fair	Fair	15'	High (Within foot print of plaza)	R.I.	Canopy is very thin. Water requirements not being met or may be advanced stage of sycamore anthracnose infection. Twig Dieback up to 1" in diameter. Moderate leaf blight from anthracnose (<i>Apiognomonia veneta</i>), infection.
T22	California sycamore	16"	Yes	55'X40'	Fair	Fair	Fair	15'	High (Within foot print of plaza)	R.I.	Significant leaf blight from anthracnose (<i>Apiognomonia veneta</i>), infection.
T23	California sycamore	11"	Yes	55'X25'	Fair	Good	Good	10'	High (Within foot print of plaza)	R.I.	Significant leaf blight from anthracnose (<i>Apiognomonia veneta</i>), infection.
							Page 4 of 6		7/15/2018		

cork oak

Riverfront Apartments, 412-508 Front Street, Santa Cruz, CA. 95060

Tree Assessment Chart - Appendix A

Tree #	Species	Trunk Diameter @ 4.5'	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (in feet)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
T24	cork oak (<i>Quercus suber</i>)	4",3"	Yes	12'X10'	Good	Fair	Good	5'	High (Within foot print of plaza)	R.I.	Suppressed growth habit, crowded, by larger adjacent trees T23 & T25.
T25	California sycamore (<i>Platanus racemosa</i>)	11"	Yes	38'X35'	Fair	Good	Fair	11'	High (Within foot print of plaza)	R.I.	Significant leaf blight from anthracnose (<i>Apiognomonina veneta</i>), infection.
T26	California sycamore	9"	Yes	38'X25'	Fair	Good	Fair	10'	High (Within foot print of plaza)	R.I.	Canopy is very thin. Water requirements not being met or may be advanced stage of sycamore anthracnose infection. Twig Dieback up to 1/2" in diameter. Moderate leaf blight from anthracnose (<i>Apiognomonina veneta</i>), infection.
T27	bigleaf maple (<i>Acer macrophyllum</i>)	8"	Yes	18'X18'	Fair	Good	Fair	8'	High (Within foot print of plaza)	R.I.	Canopy is slightly thin. Water requirements not being met. Twig Dieback up to 1/2" in diameter. Minor wetwood bleeding at trunk wound, with associated dead wood.
T28	box elder (<i>Acer negundo</i>)	12"	Yes	40'X30'	Fair	Fair	Fair	12'	Moderate to High (Root loss - excavation and compaction) Within < 6' of terrace structure.	R.T.	May require removal. Trunk is within foot print or very close to proposed terrace structure (retaining wall). Recommend field adjustment of terrace structure to reduce impacts to tree. Canopy is slightly thin. Water requirements not being met. Twig Dieback up to 1/2" in diameter. Moderate fungal leaf infection. Clearance prune from light standard.
 <p>Kurt Fouts Arborist Consultant</p> <p>826 Monterey Avenue Capitola, CA 95010 831-359-3607 scharborgrounds@yahoo.com</p>							Page 5 of 6			7/15/2018	

Riverfront Apartments, 412-508 Front Street, Santa Cruz, CA. 95060

Tree Assessment Chart - Appendix A

Tree #	Species	Trunk Diameter @ 4.5'	Protected Tree	Crown Height & Spread	Health Rating	Structural Rating	Suitability for Preservation (Based Upon Condition)	Tree Protection Zone (in feet)	Construction Impacts (Rating & Description)	Retention or Removal Code	Comments
T29	box elder (<i>Acer negundo</i>)	15"	Yes	40'X30'	Fair	Fair	Fair	15'	Moderate (Root loss - excavation, compaction, possible fill soil) Within < 11' of terrace structure.	R.T.	Located along river levee outside (south), of project limits. Canopy is close to, or within foot print of proposed terrace structure. Recommend field adjustment of terrace structure (retaining wall), to reduce impacts to tree. Moderate fungal leaf infection. Clearance prune from light standard.
T30	box elder	14"	Yes	40'X30'	Fair	Fair	Fair	14'	Low to none (Root loss- outside project limits)	R.T.	Located along river levee outside (south), of project limits. Moderate fungal leaf infection. Clearance prune to allow adequate light illumination along Riverwalk.
T31	cork oak (<i>Quercus suber</i>)	4",4"	Yes	12'X10'	Good	Fair	Fair	5'	Low to none (Root loss- outside project limits)	R.T.	.
T32	box elder	13"	Yes	40'X30'	Fair	Fair	Fair	14'	Low to none (Root loss- outside project limits)	R.T.	Located along river levee outside (south), of project limits. Moderate fungal leaf infection. Clearance prune to allow adequate light illumination along Riverwalk.
 <p>Kurt Fouts Arborist Consultant</p> <p>826 Monterey Avenue Capitola, CA 95010 831-359-3607 scharborgrounds@yahoo.com</p>							Page 6 of 6			7/15/2018	

APPENDIX B – CRITERIA FOR TREE ASSESSMENT CHART

Following is an explanation of the data used in the tree evaluations. The data is incorporated in the *Tree Assessment Chart, Appendix A*.

Trunk Diameter and Number of Trunks:

Trunk diameter as measured at 4.5 feet above grade. The number of trunks refers to a single or multiple trunked tree. Multiple trunks are measured at 4.5 feet above grade.

Health Ratings:

Good: A healthy, vigorous tree, reasonably free of signs and symptoms of disease

Fair: Moderate vigor, moderate twig and small branch dieback, crown may be thinning and leaf color may be poor

Poor: Tree in severe decline, dieback of scaffold branches and/or trunk, most of foliage from epicormics

Structure Ratings:

Good: No significant structural defects. Growth habit and form typical of the species

Fair: Moderate structural defects that might be mitigated with regular care

Poor: Extensive structural defects that cannot be abated.

Suitability for Preservation Ratings:

Rating factors:

Tree Health: Healthy vigorous trees are more tolerant of construction impacts such as root loss, grading and soil compaction, then are less vigorous specimens.

Structural integrity: Preserved trees should be structurally sound and absent of defects or have defects that can be effectively reduced, especially near structures or high use areas.

Tree Age: Over mature trees have a reduced ability to tolerate construction impacts, generate new tissue and adjust to an altered environment. Young to maturing specimens are better able to respond to change.

Species response: There is a wide variation in the tolerance of individual tree species to construction impacts.

Rating Scale:

Good: Trees in good health and structural condition with potential for longevity on the site

Fair: Trees in fair health and/or with structural defects that may be reduced with treatment procedures.

Poor: Trees in poor health and/or with poor structure that cannot be effectively abated with treatment. Trees can be expected to decline or fail regardless of construction impacts or management . The species or individual may possess characteristics that are incompatible or undesirable in landscape settings or unsuited for the intended use of the site.

Construction Impacts:

Rating Scale:

High: Development elements proposed that are located within the Tree Protection Zone that would severely impact the health and /or stability of the tree. The tree impacts cannot be mitigated without design changes. The tree may be located within the building footprint.

Moderate: Development elements proposed that are located within the Tree Protection Zone that will impact the health and/or stability of the tree and can be mitigated with tree protection treatments.

Low: Development elements proposed that are located within or near the Tree Protection Zone that will have a minor impact on the health of the tree and can be mitigated with tree protection treatments.

None: Development elements will have no impact on the health and stability of the Tree.

Tree Protection Zone (TPZ):

Defined area within which certain activities are prohibited or restricted to prevent or minimize potential injury to designated trees, particularly during construction or development.



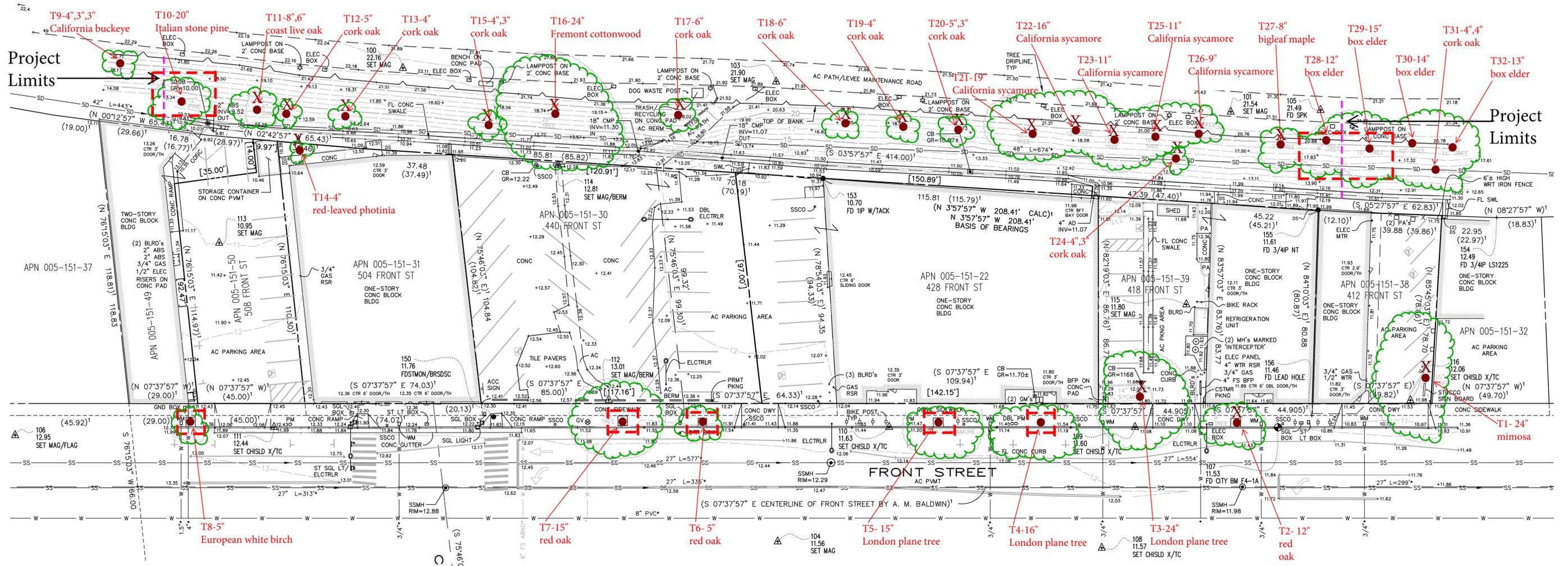
826 Monterey Avenue
 Capitola, CA 95010
 831-359-3607
 kurtfouts1@outlook.com

Legend	
Tree Location & Number	
Tree Protection Fencing	
Tree Canopy Extents	
Hand Trenching & Root Pruning	
Remove Tree	

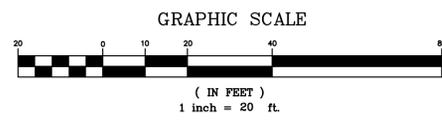
See arborist Report dated September 9, 2018 for additional tree assessment information.

Note: Riverwalk trees T10, T28 & T29 will require targeted root pruning under the supervision of the project arborist.

San Lorenzo River



Note: All existing street trees will require targeted root puning under the supervision of the project arborist.



Site base map provided by: Bowman & Williams, Consulting Civil Engineers, 1011 Cedar St., Santa Cruz, 95060

<h1>Tree Protection Plan</h1>
Riverfront Apartments 412 - 508 Front Street, Santa Cruz, 95060
9/9/2018
Sheet T1 of 2

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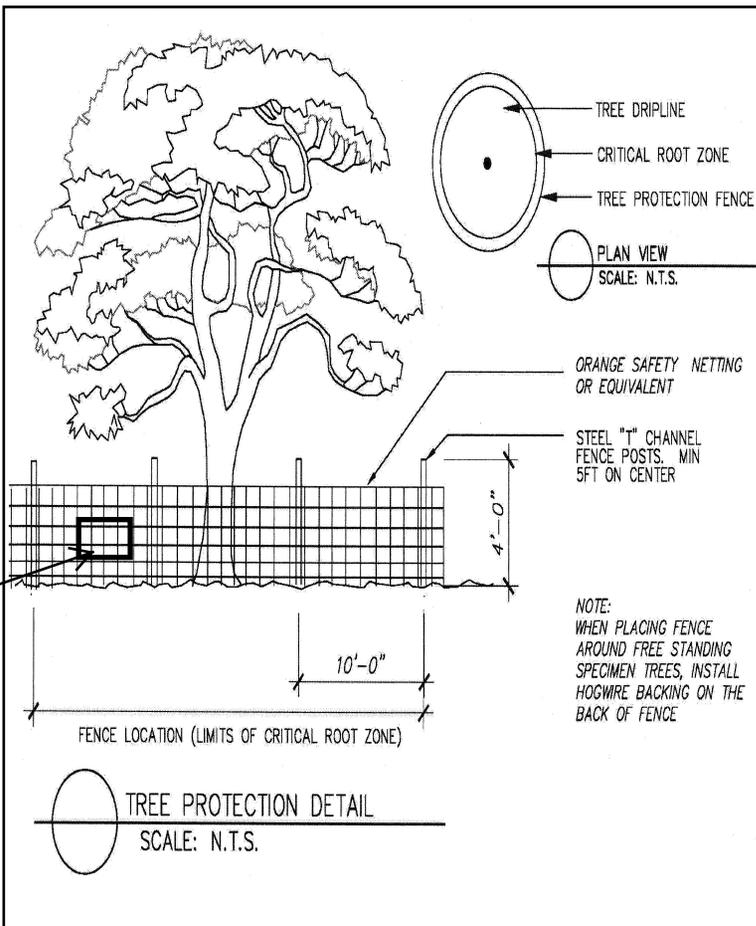
Tree Protection Specifications & Recommended Sequence

Street Trees, Trees T3 – T8

1. Install tree trunk protection as indicated on Sheet T2.
2. Install tree protection fencing as indicated on Sheet T2.
3. Project arborist shall be notified 24 Hours in advance, if temporary removal of tree protection fencing to accomplish demolition and/or installation of hardscape or utility elements is required.
4. Removal of existing concrete sidewalk within the tree protection zone, shall be accomplished with jack hammer equipment and pieces hand loaded.
5. Excavation and forming for new sidewalk/curb and gutter shall be supervised by project arborist.
6. Root pruning as necessary for new sidewalk/curb and gutter shall be supervised by project arborist.

River Corridor, Trees T10, 28 & 29

1. Install tree protection fencing as indicated on Sheet T2.
2. Project arborist shall be notified 24 Hours in advance, if temporary removal of tree protection fencing to accomplish installation of retaining wall elements is required.
3. Stake for retaining wall locations.
4. Field adjustments of retaining walls shall be made to reduce impacts to trees.
5. Grading for retaining walls within the canopy of trees shall be by hand only.
6. Excavation for retaining wall posts shall be accomplished by hand or with machinery that minimizes impacts to trees.
7. Root pruning for installation of posts or walls shall be supervised by project arborist.



PRE-CONSTRUCTION ROOT PRUNING

Excavation shall only occur within the TPZ (Tree Protection Zone), of retained trees, when designated by the Project Arborist. Excavations within (or outside of the TPZ as designated), the Tree Protection Zone, will be executed by hand, in order to preserve roots two (2") inches in diameter or greater during the excavation process. All root pruning will be conducted under supervision of the Project Arborist. These activities will be documented, and a monitoring report will be provided to the City Arborist. Under direction of the Project Arborist, it may be necessary to temporarily remove the Tree Protection Fencing to allow access for root pruning activities.

Trenches for root pruning will be hand dug according to locations of the Tree Protection Plan sheet:

- Trenches will be dug one foot behind staking on tree side of stakes.
- The depth of the trench will equal the depth required for installation of the adjacent element.
- Cleanly prune and roots encountered 2 inches in diameter or greater. Use loppers, hand saw or Sawzall. A sharp spade may be used for palm roots. The pruned roots should be covered with burlap layers or carpeting and kept moist until the trench is backfilled.
- Reinstall the Tree Protection Fencing to its original location.

Warning
Tree Protection Zone
Keep Out

NOTICE: PROTECTIVE FENCING IS REQUIRED ON THIS JOB SITE. REMOVAL OR DAMAGE OF THIS FENCING MAY RESULT IN A FINE

This sign must be prominently displayed. Fencing may not be moved or removed without permission of the Project Arborist.

During demolition and construction, all reasonable steps necessary to prevent damage, or the destruction of protected trees is required. Failure to comply with all precautions may result in a STOP WORK order being issued by the regulating agency.

No Entry without Project Arborist Authorization
Kurt Fouts -Arborist Consultant- 831-359-3607

Tree Trunk Protection

All existing street trees will require trunk protection. Protect trees with either option below:

1. Preventing mechanical damage to the main trunk from equipment or hand tools can be accomplished by wrapping the main trunk with straw wattle, to a height of 6 feet. The wattle will create a porous barrier around the trunk and prevent damage to the vascular tissues underneath the bark. No nails are to be used to secure the wattle.
2. A minimum of 4 layers of orange plastic snow fencing, then a layer of 2X4 planks set on end, edge to edge and wrapped with a minimum of 4 additional layers of orange plastic snow fencing to a height of 6 feet.

TREE PROTECTION FENCING

Protection fencing shall be installed in areas defined on the attached Tree Protection Plan. These fences must be installed before any demolition or construction equipment is on site. It must be minimum 4-foot high, orange plastic, welded wire or chain link, secured with a minimum length 6-foot u-channel steel posts, posts driven into the ground on maximum of 6-foot centers. If access into the protected areas becomes necessary, it must be supervised by the Project Arborist. Signage shall be installed on the tree protection fencing. Signage will be installed (8.5 X 11"), on ten-foot centers. An example of the fencing signage is attached to the Tree Protection Plan sheet or arborist report. Once the Tree Protection Zone (TPZ), is delineated and fenced, essentially prior to any site work, equipment and materials move in or landscape construction, activities within the TPZ are only permitted of allowed for and specified by the Project Arborist. The fenced TPZ areas are considered "non - intrusion zones" and should not be altered or breached.

See arborist report dated 9/9/2018 for additional tree protection specifications.



Tree Protection Plan

Riverfront Apartments 412 -58 Front Street, Santa Cruz, 95060

Sheet

T2 OF 2

9/9/2018

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Image #1 – Tree T1 – mimosa, protected tree located on private property Within footprint of new building and removal is required.



Image #2 – Tree T2 – red oak – tree is in poor condition and removal is recommended. Note branch dieback in upper canopy.



Image #3 – Tree T2 – red oak - close up of dieback and epicormic growth on main branches.



Image #4 – Trees T3 – T5 (right to left) – London plane street trees – Tree T3 is set back behind sidewalk, is within foot print of new building and removal is required. Trees T4 & 5 are in good condition and should be retained.



Image #5 – Trees T6 & T7 – red oak – Both oaks are in good condition and should be retained.



Image #6 – Tree T8 – European white birch – Tree is in good condition, (canopy needs corrective pruning) and should be retained.



Image #7 – Subject trees located in river corridor. View looking south. Northern edge of project boundaries. Tree T9 California buckeye in foreground, is out of project limits. Tree T10 Italian stone pine (circled), is within project limits. Both tree T9 & T10 are recommended for retention.



Image #8 – View looking north. Middle section of trees located in river corridor. Tree T16, Fremont cottonwood is large tree in center of image.



Image #9 – View looking north. Near southern edge of project boundaries. Trees T21-T23 & T25-T26 California sycamore.



Image #10 – View looking west. Southern edge of project boundary. Tree T27 bigleaf maple and T28 box elder (left edge of image).



Image #11 – Tree T21 – California sycamore – Tree is in poor health with significant dieback in canopy due to its water requirements not being met and/or advanced stage of sycamore anthracnose infection.



Image #12 – Tree T21 – California sycamore – Close up of leaf blight (dieback), due to anthracnose infection.



Image #13 – View looking north. Trees T28-T30 & T31-32 – box elder and Tree T31 cork oak (not visible) – Four of the five trees are outside of project boundaries. All five trees are recommended for retention.

Appendix E - TREE PROTECTION GUIDELINES AND RESTRICTIONS

Protecting Trees During Construction:

- 1) Before the start of site work, equipment or materials move in, clearing, excavation, construction, or other work on the site, every tree to be retained shall be securely fenced- off as delineated in approved plans. Such fences shall remain continuously in place for the duration of the work undertaken in connection with the development.
- 2) If the proposed development, including any site work, will encroach upon the tree protection zone, special measures shall be utilized, as approved by the project arborist, to allow the roots to obtain necessary oxygen, water, and nutrients.
- 3) Underground trenching shall avoid the major support and absorbing tree roots of protected trees. If avoidance is impractical, hand excavation undertaken under the supervision of the project arborist may be required. Trenches shall be consolidated to service as many units as possible. Boring/tunneling under roots should be considered as an alternative to trenching.
- 4) Concrete or asphalt paving shall not be placed over the root zones of protected trees, unless otherwise permitted by the project arborist.
- 5) Artificial irrigation shall not occur within the root zone of native oaks, unless deemed appropriate on a temporary basis by the project arborist to improve tree vigor or mitigate root loss.
- 6) Compaction of the soil within the tree protection zone shall be avoided.
- 7) Any excavation, cutting, or filling of the existing ground surface within the tree protection zone shall be minimized and subject to such conditions as the project arborist may impose. Retaining walls shall likewise be designed, sited, and constructed to minimize their impact on protected trees.
- 8) Burning or use of equipment with an open flame near or within the tree protection zone shall be avoided. All brush, earth, and other debris shall be removed in a manner that prevents injury to the tree.
- 9) Oil, gas, chemicals, paints, cement, stucco or other substances that may be harmful to trees shall not be stored or dumped within the tree protection zone of any protected tree, or at any other location on the site from which such substances might enter the tree protection zone of a protected tree.
- 10) Construction materials shall not be stored within the tree protection zone of a protected tree.

Project Arborist Duties and Inspection Schedule:

The project arborist is the person(s) responsible for carrying out technical tree inspections, assessment of tree health, structure and risk, arborist report preparation, consultation with designers and municipal planners, specifying tree protection measures, monitoring, progress reports and final inspection.

A qualified project arborist (or firm) should be designated and assigned to facilitate and insure tree preservation practices. He/she/they should perform the following inspections:

Inspection of site: Prior to equipment and materials move in, site work, demolition, landscape construction and tree removal: The project arborist will meet with the general contractor, architect / engineer, and owner or their representative to review tree preservation measures, designate tree removals, delineate the location of tree protection fencing, specify equipment access routes and materials storage areas, review the existing condition of trees and provide any necessary recommendations.

Inspection of site: During excavation or any activities that could affect trees: Inspect site during any activity within the Tree Protection Zones of preserved trees and any recommendations implemented. Assess any changes in the health of trees since last inspection.

Final Inspection of Site: Inspection of site following completion of construction. Inspect for tree health and make any necessary recommendations.

Kurt Fouts shall be the Project Arborist for this project. All scheduled inspections shall include a brief Tree Monitoring report, documenting activities and provided to the City Arborist.

Tree Protection Fencing

Tree Protection fencing shall be installed prior to the arrival of construction equipment or materials. Fence shall be comprised of six-foot chain link fence mounted on eight-foot tall, 1 and 7/8-inch diameter galvanized posts, driven 24 inches into the ground and spaced on a minimum of 10-foot centers. Once established, the fence must remain undisturbed and be maintained throughout the construction process until final inspection.

A final inspection by the City Arborist at the end of the project will be required prior to removing any tree protection fencing.

Tree Protection Signs

All sections of fencing should be clearly marked with signs stating that all areas within the fencing are Tree Protection Zones and that disturbance is prohibited.

Monitoring

Any trenching, construction or demolition that is expected to damage or encounter tree roots should be monitored by the project arborist or a qualified ISA Certified Arborist and should be documented.

The site should be evaluated by the project arborist or a qualified ISA Certified Arborist after construction is complete, and any necessary remedial work that needs to be performed should be noted.

Root Pruning

Root pruning shall be supervised by the project arborist. When roots over two inches in diameter are encountered they should be pruned by hand with loppers, handsaw, reciprocating saw, or chain saw rather than left crushed or torn. Roots should be cut beyond sinker roots or outside root branch junctions and be supervised by the project arborist. When completed, exposed roots should be kept moist with burlap or backfilled within one hour.

Tree Work Standards and Qualifications

All tree work, removal, pruning, planting, shall be performed using industry standards of workmanship as established in the Best Management Practices of the International Society of Arboriculture (ISA) and the American National Standards Institute series, *Safety Requirements in Arboriculture Operations ANSI Z133-2017*,

Contractor licensing and insurance coverage shall be verified.

During tree removal and clearance, sections of the Tree Protection Fencing may need to be temporarily dismantled to complete removal and pruning specifications. After each section is completed, the fencing is to be re-installed.

Trees to be removed shall be cut into smaller manageable pieces consistent with safe arboricultural practices, and carefully removed so as not to damage any surrounding trees or structures. The trees shall be cut down as close to grade as possible. Tree removal is to be performed by a qualified contractor with valid City Business/ State Licenses and General Liability and Workman's Compensation insurance.

Development Site Tree Health Care Measures

RECOMMENDED TO PROVIDE OPTIMUM GROWING CONDITIONS, PHYSIOLOGICAL INVIGORATION AND STAMINA, FOR PROTECTION AND RECOVERY FROM CONSTRUCTION IMPACT.

Establish and maintain TPZ fencing, trunk and scaffold limb barriers for protection from mechanical damage, and other tree protection requirements as specified in the arborist report.

Project arborist to specify site-specific soil surface coverings (wood chip mulch or other) for prevention of soil compaction and loss of root aeration capacity.

Soil, water and drainage management is to follow the ISA BMP for "Managing Trees During Construction" and the ANSI Standard A300(Part 2)- 2011 Soil Management (a. Modification, b. Fertilization, c. Drainage.)

Fertilizer / soil amendment product(s) amounts and method of application to be specified by certified arborist.

City of Santa Cruz

9.56.040 HERITAGE TREE AND HERITAGE SHRUB DESIGNATION.

Any tree, grove of trees, shrub or group of shrubs, growing on public or private property within the city limits of the city of Santa Cruz which meet(s) the following criteria shall have the “heritage” designation:

(a) Any tree which has a trunk with a circumference of forty-four inches (approximately fourteen inches in diameter or more), measured at fifty-four inches above existing grade;

(b) Any tree, grove of trees, shrub or group of shrubs which have historical significance, including but not limited to those which were/are:

- (1) Planted as a commemorative;
- (2) Planted during a particularly significant historical era; or
- (3) Marking the spot of an historical event.

(c) Any tree, grove of trees, shrub or group of shrubs which have horticultural significance, including but not limited to those which are:

- (1) Unusually beautiful or distinctive;
- (2) Old (determined by comparing the age of the tree or shrub in question with other trees or shrubs of its species within the city);
- (3) Distinctive specimen in size or structure for its species (determined by comparing the tree or shrub to average trees and shrubs of its species within the city);
- (4) A rare or unusual species for the Santa Cruz area (to be determined by the number of similar trees of the same species within the city);
- (5) Providing a valuable habitat; or
- (6) Identified by the city council as having significant arboricultural value to the citizens of the city.

City of Santa Cruz Municipal Code

Chapter 24.08 LAND USE PERMITS AND FINDINGS

Part 21: WATERCOURSE DEVELOPMENT PERMIT

24.08.2100 PURPOSE.

The purpose of this part is to carry out the goals of the City-Wide Creeks and Wetlands Management Plan by applying development standards to lands adjacent to watercourses within the city of Santa Cruz that will enhance and protect watercourse functions and values. This part of the zoning title is also part of the Local Coastal Implementation Plan.

(Ord. 2008-03 § 1 (part), 2008: Ord. 2006-02 § 2 (part), 2006).

24.08.2110 GENERAL PROVISIONS.

1. Applicability. The watercourse development permit requirements of this part apply to every zoning district within the city of Santa Cruz. Refer to the City-Wide Creeks and Wetlands Management Plan to determine the category and development setback areas for each individual watercourse.

2. Definitions.

a. Best Management Practices (BMP). Any program, technology, process, siting criteria, operating method, measure or device which controls, prevents, removes or reduces discharge of pollutants or sediments into bodies of water.

b. Centerline of Creek. The midpoint of a creek channel as determined by taking the midpoint of the bank-full width. Bank-full width is the lateral extent of water surface at the point where the channel is completely filled to a point above which water would spill onto the floodplain.

c. Development. For the purpose of this part the term "development" shall include any work requiring a use, building, grading, or public works permit; the placement of a fence, wall, retaining wall, steps, deck, patio, any accessory structures, or walkway; grading, relocation or removal of stones from the creek channel; bank stabilization or repair structures; and certain landscape changes occurring within the management area.

d. **Development Setback Area.** The distance from the centerline of the watercourse and the edge of development, which provides a buffer between new development and the riparian corridor and watercourse.

e. **Integrated Pest Management (IPM).** An approach to pest management that relies primarily on nonchemical means (such as controlling climate, food sources, and building entry points) to prevent and manage pest infestation.

f. **Management Area.** The area of city permitting authority adjacent to watercourses that includes the riparian corridor, development setback area and extends twenty-five feet beyond the edge of the development setback area.

g. **Riparian Corridor.** The width of riparian vegetation and/or immediate watercourse influence area, measured outward from the centerline of the watercourse.

h. **Vegetation Removal, Major.** Clearing of woody and non-woody vegetation canopy cover or herbaceous ground cover that does not meet the definition of minor vegetation removal; removal of any native (indigenous) annual or perennial woody or non-woody species within the riparian area; or pruning, trimming, cutting off, or removal of greater than twenty-five percent of the crown of any tree within a three-year period. Major vegetation removal is allowable under certain limited conditions for prevention of serious fire hazards, prevention of noxious weed infestation (provided, that erosion control measures are implemented and the cleared area is replanted/reestablished and seeded with appropriate native species to reduce the potential for erosion), or for other projects allowed under the watercourse development permit procedures.

i. **Vegetation Removal, Minor.** Routine trimming of plant material; pruning of tree branches totaling less than twenty-five percent of the crown within a three-year period; removal of nonnative invasive species of brush, annual or perennial vegetation, and herbaceous grass species that out compete or suppress existing native vegetation; provided, that sufficient vegetation remains to prevent erosion (bare soil shall not be left exposed); or the removal of vegetation as authorized by the planning director or his/her designee to alleviate an existing hazardous condition. Minor vegetation removal is permissible only for routine maintenance, increasing interior light and air circulation, improving tree structure, controlling plant disease or decay, promoting longevity of vegetation, habitat enhancement and under certain conditions, for fire safety and prevention. Minor vegetation removal does not include removal of mature eucalyptus trees in known monarch butterfly habitat areas.

j. Watercourse Categories. All watercourses and watercourse reaches included within the City-Wide Creeks and Wetlands Management Plan are categorized as either an “A,” “B” or “C” watercourse. This designation is based on the quality of the riparian corridor associated with each watercourse.

k. Wetland. An area that is: (1) identified as a known wetland or area of ponding water that needs further site-specific review by the City-Wide Creeks and Wetlands Management Plan or (2) identified as part of a review process as inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions (hydrophytes).

l. Wetland (Coastal Zone). An area that is (1) identified as a known wetland or area of ponding that needs further site-specific review as described in the City-Wide Creeks and Wetlands Management Plan or (2) identified as part of a review process as having at least one of the following three attributes: (A) land that supports predominantly hydrophytic cover; (B) soil that is predominantly hydric; (C) or in the case of wetlands without vegetation or soils, land that is flooded or saturated at some time during years of normal precipitation.

(Ord. 2008-03 § 1 (part), 2008: Ord. 2006-02 § 2 (part), 2006).



City of Santa Cruz - Parks Division

Leslie Keedy City Urban Forester/Arborist

323 Church Street, Santa Cruz, CA 95060

Telephone: (831) 420-5246 Fax: (831) 420-5361

Approved Street Trees of Santa Cruz



LATIN NAME	COMMON NAME	TREE WIDTH	TREE HEIGHT	DECIDUOUS	EVERGREEN	FLOWERING	FALL COLOR	SPECIAL INFORMATION
<i>Aesculus x carnea</i> 'Briotii'	Red Horsechestnut	40	35	Y	N	Y	Y	
<i>Arbutus</i> 'Marina'	Marina Madrone	20	25	N	Y	Y	N	
<i>Betula jacquemontii</i>	White Birch	10	25	y	N	N	Y	Requires regular watering and care
<i>Cercis canadensis</i>	Eastern Redbud	20	25	Y	N	Y	Y	
<i>Cinnamomum camphora</i>	Camphor	45	50	N	Y	N	N	Wide park strips only
<i>Fraxinus americana</i> 'Autumn Purple'	Autumn Purple Ash	40	50	Y	N	N	Y	
<i>Jacaranda mimosifolia</i>	Jacaranda	35	30	Y	N	Y	Y	Late to leaf out in spring
<i>Lagerstroemia indica</i> 'Natchez' 'Tuscarora' 'Muskogee'	Crepe Myrtle	20	20	Y	N	Y	Y	Available in Light pink, dark pink and white
<i>Laurus</i> 'Saratoga'	Saratoga Grecian Bay	20	20	N	Y	N	N	Medium to slow growth rate, good cooking herb
<i>Maytenus boaria</i>	Mayten Tree	20	20	N	Y	N	N	
<i>Melaleuca linariifolia</i>	Flaxleaf Paperbark	25	25	N	Y	Y	N	
<i>Melaleuca stypheliodes</i>	Prickly Paperbark	35	30	N	Y	Y	N	
<i>Melaleuca quinquenervia</i>	Cajeput Tree	45	30	N	Y	Y	N	
<i>Nyssa sylvatica</i>	Tupelo Gum	40	35	Y	N	N	Y	Excellent fall color
<i>Pistachia chinensis</i>	Chinese Pistache	45	40	Y	N	N	Y	Excellent fall color
<i>Platanus acerifolia</i> 'Columbia' or 'Yarwood'	London Plane	50	40	Y	N	N	Y	'Columbia' has a better branching structure
<i>Pyrus calleryana</i> 'Chanticleer'	Chanticleer Pear	30	20	Y	N	Y	Y	Columner form
<i>Pyrus calleryana</i> 'Aristocrat'	Aristocrat Pear	30	25	Y	N	Y	Y	Open form
<i>Quercus agrifolia</i>	Coast Live Oak	50	50	N	Y	N	N	Requires wide planting strip
<i>Quercus frainetto</i> 'Forest Green'	Hungarian Oak	40	30	Y	N	N	Y	
<i>Quercus lobata</i>	Valley Oak	50	50	Y	N	N	Y	requires wide planting strip
<i>Quercus macrocarpa</i>	Bur or Mossy Cup Oak	50	50	Y	N	N	Y	Interesting Acorns, requires wide planting strip
<i>Quercus rober</i>	English Oak	40	40	Y	N	N	Y	'Fastigiata' is an upright form
<i>Quercus rubra</i>	Red Oak	40	40	Y	N	N	Y	
<i>Quercus suber</i>	Cork Oak	50	50	N	Y	N	N	Interesting bark
<i>Quercus shumardii</i>	Shumard Oak	50	50	Y	N	N	Y	Requires wide planting strip
<i>Quercus virginiana</i>	Southern Live Oak	40	40	N	Y	N	N	Irrigation and Lawn tolerant
<i>Sophora japonica</i> 'Regent'	Regent Scholar Tree	30	30	Y	N	Y	Y	White wisteria-like blossoms
<i>Syagrus romanzoffianum</i>	Queen Palm	45	15	N	Y	N	N	Tropical accent palm
<i>Tilia americana</i> 'Redmond'	American Linden	45	30	Y	N	Y	Y	Excellent smelling blossoms
<i>Tristania laurina</i> 'Elegant'	Yellow Tristania	15	10	N	Y	N	N	'Elegant' has larger leaves and a redish tint
<i>Ulmus parvifolia</i> 'Drake'	Drake Chinese Elm	40	40	Y	N	N	N	Anthraco-nose resistant
<i>Washingtonia filifera</i>	CA Fan Palm	50	15	N	Y	N	N	Thicker and stouter than the Mexican relative
<i>Washingtonia robusta</i>	Mexican fan Palm	60	15	N	Y	N	N	Tall thin trunk

ASSUMPTIONS AND LIMITING CONDITIONS

1. Any legal description provided by the appraiser/consultant is assumed to be correct. No responsibility is assumed for matters legal in character nor is any opinion rendered as the quality of any title.
2. The appraiser/consultant can neither guarantee nor be responsible for accuracy of information provided by others.
3. The appraiser/consultant shall not be required to give testimony or to attend court by reason of this appraisal unless subsequent written arrangements are made, including payment of an additional fee for services.
4. Loss or removal of any part of this report invalidates the entire appraisal/evaluation.
5. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person(s) to whom it is addressed without written consent of this appraiser/consultant.
6. This report and the values expressed herein represent the opinion of the appraiser/consultant, and the appraiser/consultant's fee is in no way contingent upon the reporting of a specified value nor upon any finding to be reported.
7. Sketches. Diagrams. Graphs. Photos. Etc., in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering reports or surveys.
8. This report has been made in conformity with acceptable appraisal/evaluation/diagnostic reporting techniques and procedures, as recommended by the International Society of Arboriculture.
9. When applying any pesticide, fungicide, or herbicide, always follow label instructions.
10. 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 root collar inspection, consisting of excavating 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.

CONSULTING 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 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. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like medicine, cannot be guaranteed.

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.

