

APPENDIX B

ARBORIST REPORT



California Tree and Landscape Consulting, Inc.

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July 29, 2024

Sacramento Corporate Way, LLC
Attn: Bill Henry and Chris Tramonte
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Deerfield, IL 60015
Via Phone: (651) 283-4995
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PRE-DEVELOPMENT ARBORIST REPORT, TREE INVENTORY & PROTECTION PLAN

RE: 1 Corporate Way, APN 031-0051-019-0000; City of Sacramento Jurisdiction

Executive Summary:

Bill Henry of Sacramento Corporate Way, LLC, on behalf of the property owner, contacted California Tree and Landscape Consulting, Inc. to inventory and evaluate the trees on the site or within 25’ of development for purposes of evaluating the impacts to the trees from the proposed development plans, “New 3 Story, Climate Controlled, S-1 w Accessory Office and R-2 Unit, various sheets, by SGW Architecture & Design dated 04/08/24 Entitlements Initial Submittal. The property is within the jurisdiction of the City of Sacramento. See Supporting Information Appendix A –Tree Location Map.

Tyler Thomson, ISA Certified Arborist #WE-12751A, was on site July 15, 2024. A total of 14 trees, 4 of which are onsite, were evaluated on this property. An additional 10 off site trees were evaluated. 3 trees are considered ‘Private-Protected’ by the City of Sacramento Tree Preservation code chapter 12.56, 1 of which also meets the criteria for a Heritage tree.

There were 14 trees evaluated 9 of them are on site and the other 5

TABLE 1 – Tree Inventory Summary

Tree Species	Trees Inventoried	Trees located on the Parcel ¹	Protected by Sacramento City Tree Preservation Code	Proposed for Removal	Trees impacted by the proposed development and requiring special protection measures
Chinese hackberry, <i>Celtis sinensis</i>	7	5	0	0	4
Chinese pistache, <i>Pistacia chinensis</i>	2	0	0	0	0

¹ CalTLC is not a licensed land surveyor. Tree ownership was not determined. Conclusions within this report are based on existing fences or other landmarks which may not represent the actual property boundary.

Tree Species	Trees Inventoried	Trees located on the Parcel ¹	Protected by Sacramento City Tree Preservation Code	Proposed for Removal	Trees impacted by the proposed development and requiring special protection measures
Chinese tallow tree, <i>Triadica sebifera</i>	1	0	0	0	1
Coast redwood, <i>Sequoia sempervirens</i>	2	0	2 (Private Protected)	0	1
Holly oak, <i>Quercus ilex</i>	1	0	0	0	1
Valley oak, <i>Quercus lobata</i>	1	1	1 (Private Protected, Heritage tree)	0	1
Total	14	9 (2 may be offsite)	3	0	8

See Appendices for specific information on each tree and preservation requirements and/or restrictions

The site is currently undeveloped and surrounded on 3 sides by existing development (parking lots). The majority of the trees are landscape plantings. Encroachment/impacts are identified in the following tree inventory data. All encroachments are considered minor and are not expected to cause any long term stress/impact to any of the trees provided the arborists recommendations are followed.

Methods

Appendix 2 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 to produce the tree location map.

Tree Measurements: DBH (diameter at breast height) 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 steel diameter tape was used to measure the DBH for trees less than 23” in diameter and a steel diameter tape for trees greater than 23”. A Stanley laser distance meter was used to measure distances. Canopy radius measurements may also have been estimated due to obstructions.

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.
- City Tag #** The number listed on the City of Sacramento tree inventory in the ARC GIS system found online at: saccity.maps.arcgis.com
- 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 at breast height 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"
DSH	"Diameter at standard height" is the same as DBH except as follows (according to the City of Sacramento requirements): (1) For a tree that branches at or below 4.5 feet, DSH means the diameter at the narrowest point between the grade and the branching point; and (2) For a tree with a common root system that branches at the ground, DSH means the sum of the diameter of the largest trunk plus one-half the cumulative diameter of the remaining trunks at 4.5 feet above natural grade.
Measured at	Height above average ground level where the measurement of DBH was taken
Canopy radius and Protection Zone 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 radius of the protection zone to be specified on any development plans unless otherwise indicated in the arborist recommendations, Appendix 2.
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.

Arborist Ratings

No problem(s)	Excellent	5
No apparent problem(s)	Good	4
Minor problem(s)	Fair	3
Major problem(s)	Fair to Poor	2
Extreme problem(s)	Poor	1
Dead	Dead	0

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.

Development Restrictions/Actions Recommended actions to increase health and longevity.

Development Impacts Projected development impacts are based solely on distance relationships between tree location and grading. Field inspections and findings during the project at the time of grading and trenching can change relative impacts. Closely followed guidelines and requirements can result in a higher chance of survival, while requirements that are overlooked can result in a dramatically lower chance of survival. Impacts are measured as follows:

Impact Term:	Long Term Result of Impact:
Negligible	Tree is unlikely to show any symptoms. Chance of survival post development is excellent. Impacts to the Protected Root Zone are less than 5%.
Minor	Tree is likely to show minor symptoms. Chance of survival post development is good. Impacts to the Protected Root Zone are less than 15% and species tolerance is good.
Moderate	Tree is likely to show moderate symptoms. Chance of survival post development is fair. Impacts to the Protected Root Zone are less than 35% and species tolerance is good or moderate.
Severe	Tree is likely to show moderate symptoms annually and a pattern of decline. Chance of long term survival post development is low. Impacts to the Protected Root Zone are up to 50% and species tolerance is moderate to poor.
Critical	Tree is likely to show moderate to severe symptoms annually and a pattern of decline. Chance of long term survival post development is negligible. Impacts to the Protected Root Zone are up to 80%.

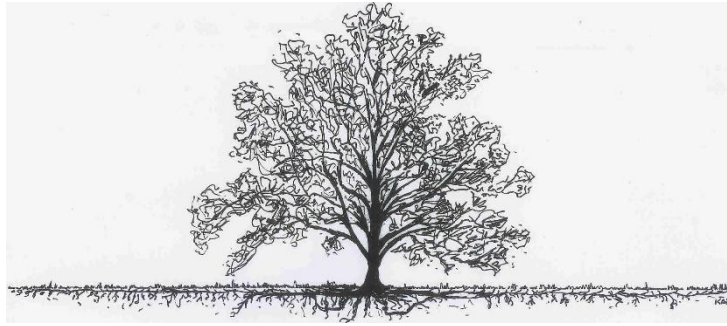
Discussion

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

Our native oak trees are easily damaged or killed by having the soil within the Protected Root Zone (PRZ) disturbed or compacted. All of the work initially performed around protected trees that will be saved should be done by people rather than by wheeled or track type tractors. Oaks are fragile giants that can take little change in soil grade, compaction, or warm season watering. Don't be fooled into believing that warm season watering has no adverse effects on native oaks. Decline and eventual death can take as long as 5-20 years with poor care and inappropriate watering. Oaks can live hundreds of years if treated properly during construction, as well as later with proper pruning, and the appropriate landscape/irrigation design.

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, but they do not necessarily know anything about trees;

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

ISA Certified Arborist: An International Society of Arboriculture Certified Arborist is someone who has been trained and 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 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

The Owner and/or Developer should ensure the project arborist's protection measures are incorporated into the site plans and followed. Tree specific protection measures can be found in Appendix 2 – Tree Information Data.

- **The stumps of the trees to be removed that are within the root zone of the City trees shall be removed using a backhoe or other piece of grading equipment only with supervision by the project arborist.** Roots from the other nearby trees may have intertwined and will be required to be severed and cut clean during the removal

process. Pulling on the stumps with equipment will likely result in the lifting of the asphalt in the parking areas on the adjacent parcels.

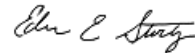
- Clearance pruning should include removal of all the lower foliage that may interfere with equipment PRIOR to having grading or other equipment on site or in the access path. The Project Arborist should approve the extent of foliage elevation and oversee the pruning to be performed by a contractor who is an ISA Certified Arborist.
- Clearly designate an area on the site outside the drip line of all trees on the adjacent parcels where construction materials may be stored and parking can take place. No materials or parking shall take place within the root zones of trees to be retained.
- Sewer line installation and trenching inside the root protection zone of trees to remain on the site shall be directly supervised by the project arborist. A hydraulic or air spade may be required for digging and placement of pipes underneath the roots, or boring of deeper trenches underneath the roots.
- Follow all of the General Development Guidelines, Appendix 3, for all trees not identified as requiring special preservation measures in the summary and in Appendix 2.

Report Prepared by:

Project Arborist:



Caroline Nicholas
Arborist Assistant



Edwin E. Stirtz
Consulting Arborist
ISA Certified Arborist #WE-0510A, TRAQ

Appendix 1 – Tree Location Map/Development Site Plan

Appendix 2 – Tree Data and Tree Specific Recommendations

Appendix 3 – General Development Guidelines

Appendix 4 – Site Photographs

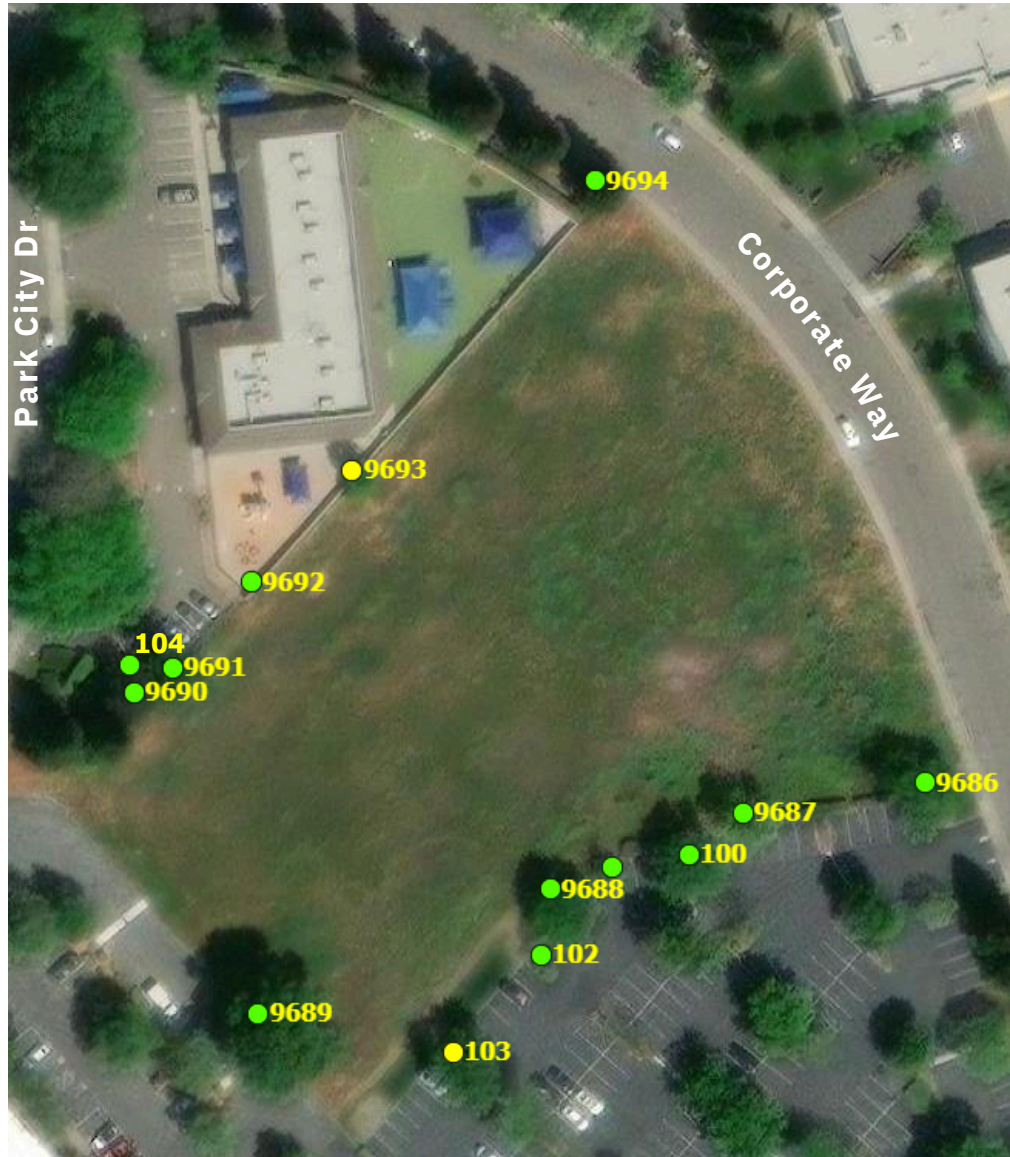
Bibliography

- 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.
- Stamen, R. (1997). *California Arboriculture Law*. Riverside: Law Offices of Randall S. Stamen.
- 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.

1 Corporate Way
Sacramento, CA

Prepared for: Sacramento Corporate Way, LLC

Map of Property Showing Approximate Tree Locations



APPENDIX 2 – TREE DATA

Tag #	Protected By Code	Heritage Tree	Offsite	Species Common Name	Species Botanical Name	DSH (in.)	Measured At (in.)	Canopy Radius (ft.)	Arborist Rating	Notes	Dvlpmnt Status	Mitigation measures
100			Yes	Chinese hackberry	<i>Celtis sinensis</i>	14.5	54	21	3-Minor Problems	fair flare, in growing strip into offsite parking lot. base approximately 14 feet offsite. crown overlaps property line by approximately 10 feet. fair crown balance and density. minor small branch die-back throughout.	No encroachment depicted.	N/A
101			Yes	Chinese pistache	<i>Pistacia chinensis</i>	7	54	17	3-Minor Problems	flare obscured, approximately 11 feet offsite. crown overextended west and overlaps property line west by approximately 8 feet, low crown west. slightly low crown density. fair crown balance. in offsite growing strip.	No encroachment depicted.	N/A
102			Yes	Chinese pistache	<i>Pistacia chinensis</i>	6.5	54	14	3-Minor Problems	fair flare, approximately 12 feet offsite, growing in parking lot strip offsite. unbalanced crown west, overlaps property line by approximately 5 feet. fair crown density.	No encroachment depicted.	N/A
103			Yes	Chinese hackberry	<i>Celtis sinensis</i>	17	54	25	2-Major Structure or health problems	large elevated roots in parking lot growing strip. sunken sinuses around flare and trunk. crowded main stems, crossing and rubbing. unbalanced main crown stems lean heavy and low west. good crown	No encroachment depicted.	N/A

Tag #	Protected By Code	Heritage Tree	Offsite	Species Common Name	Species Botanical Name	DSH (in.)	Measured At (in.)	Canopy Radius (ft.)	Arborist Rating	Notes	Dvlpmnt Status	Mitigation measures
										density. offsite by approximately 12 feet. crown overlaps property line by approximately 12 feet.		
104			Yes	Holly oak	<i>Quercus ilex</i>	15	54	18	3-Minor Problems	fair flare, offsite by approximately 17 feet. crown west overlaps property line by approximately 2 feet. fair crown balance and density.	Minor encroachment for driveway construction which falls slightly inside the critical root zone and landscaping directly under the tree.	Monitor excavation, may require irrigation.
9686				Chinese hackberry	<i>Celtis sinensis</i>	17.5	54	27	3-Minor Problems	fair flare, large surface roots, severed large root east. moderately overextended crown branches, recommend pruning end weight. fair crown balance and density. fair vigor.	Minor encroachment for driveway construction which falls slightly inside the critical root zone and landscaping directly under the tree.	Monitor excavation, may require irrigation.
9687				Chinese hackberry	<i>Celtis sinensis</i>	16	54	21	3-Minor Problems	fair flare. codominant at 7 and 9 feet. fair crown balance, overextended west crown. fair crown density.	Minor encroachment for driveway construction which falls slightly inside the critical root zone and landscaping directly under the tree.	Monitor excavation, may require irrigation.
9688				Chinese hackberry	<i>Celtis sinensis</i>	13.5	54	21	3-Minor Problems	fair flare. poor branch attachment southwest at 6 feet. fair crown balance and density. small branch die-back throughout	Minor encroachment for landscaping slightly within the crz.	Monitor excavation, may require irrigation.

Tag #	Protected By Code	Heritage Tree	Offsite	Species Common Name	Species Botanical Name	DSH (in.)	Measured At (in.)	Canopy Radius (ft.)	Arborist Rating	Notes	Dvlpmnt Status	Mitigation measures
										crown. low crown north, west, and south. fair vigor.		
9689	Yes	Yes	Shared	Valley oak	<i>Quercus lobata</i>	40.3	54	37	3-Minor Problems	good flare, shallow roots lifting asphalt, possibly a shared tree. overlaps main stem southeast, inclusion at attachment union. fair crown balance, low crown northeast over lot. good crown density. good vigor.	Minor to moderate encroachment for water line installation and drive isle above water line. Building falls at edge of crz.	Monitor excavation, root prune as necessary. Excavation may require hydrovac equipment, begin with exploratory trench to determine root size (if any) at trench location. May require irrigation. The tree requires reduction pruning to reduce leverage and weight on overburdened branches. Install "permeable paving" surface within CRZ or install a piped aeration system beneath the hardscape.
9690	Yes		Yes	Coast redwood	<i>Sequoia sempervirens</i>	24	54	13	3-Minor Problems	good flare. good overall balance and density. good vigor. my guess is that the tree is 7 feet offsite.	No encroachment depicted.	N/A
9691			Yes	Chinese hackberry	<i>Celtis sinensis</i>	13	54	21	3-Minor Problems	good flare, elevated roots. flush cuts on lower half of tree. moderate amount of dead branches up to 2 inches. fair crown balance and density.	Minor encroachment for driveway construction which falls slightly inside the critical root zone and landscaping directly under the tree.	Monitor excavation, may require irrigation.
9692			Yes	Chinese hackberry	<i>Celtis sinensis</i>	4	54	13	3-Minor Problems	fair flare, north flare touching wall on property	No encroachment depicted.	N/A

Tag #	Protected By Code	Heritage Tree	Offsite	Species Common Name	Species Botanical Name	DSH (in.)	Measured At (in.)	Canopy Radius (ft.)	Arborist Rating	Notes	Dvlpmnt Status	Mitigation measures
										line. low crown, fair crown balance and density.		
9693			Yes	Chinese tallow tree	<i>Triadica sebifera</i>	13	54	16	2-Major Structure or health problems	unbalanced base, touching wall on property line. swollen lower trunk with dead branches. low mature lateral branches, low crown. fair crown balance and density.	Minor encroachment for driveway construction which falls slightly inside the critical root zone and landscaping directly under the tree.	Monitor excavation, root prune as necessary. May require irrigation.
9694	Yes		Yes	Coast redwood	<i>Sequoia sempervirens</i>	28.5	54	15	3-Minor Problems	good flare, approximating tree is 4 feet offsite. good overall balance and foliage health. low lateral branches west over property line. good vigor.	Minor encroachment for driveway construction which falls at the critical root zone and landscaping under the tree.	Monitor excavation, may require irrigation.

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.

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.²

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.

Design the irrigation system so it can slowly apply water (no more than ¼” to ½” 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.

² 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.

APPENDIX 4 – SITE PHOTOGRAPHS by Tyler Thomson, July 15, 2024



Photo #1, Shows Trees #100, left (offsite) and #9687, right (onsite)



Photo #2, Shows Tree #103, left (offsite) and Heritage Tree #9689, right (onsite)



Photo #3, Shows Heritage Tree #9689

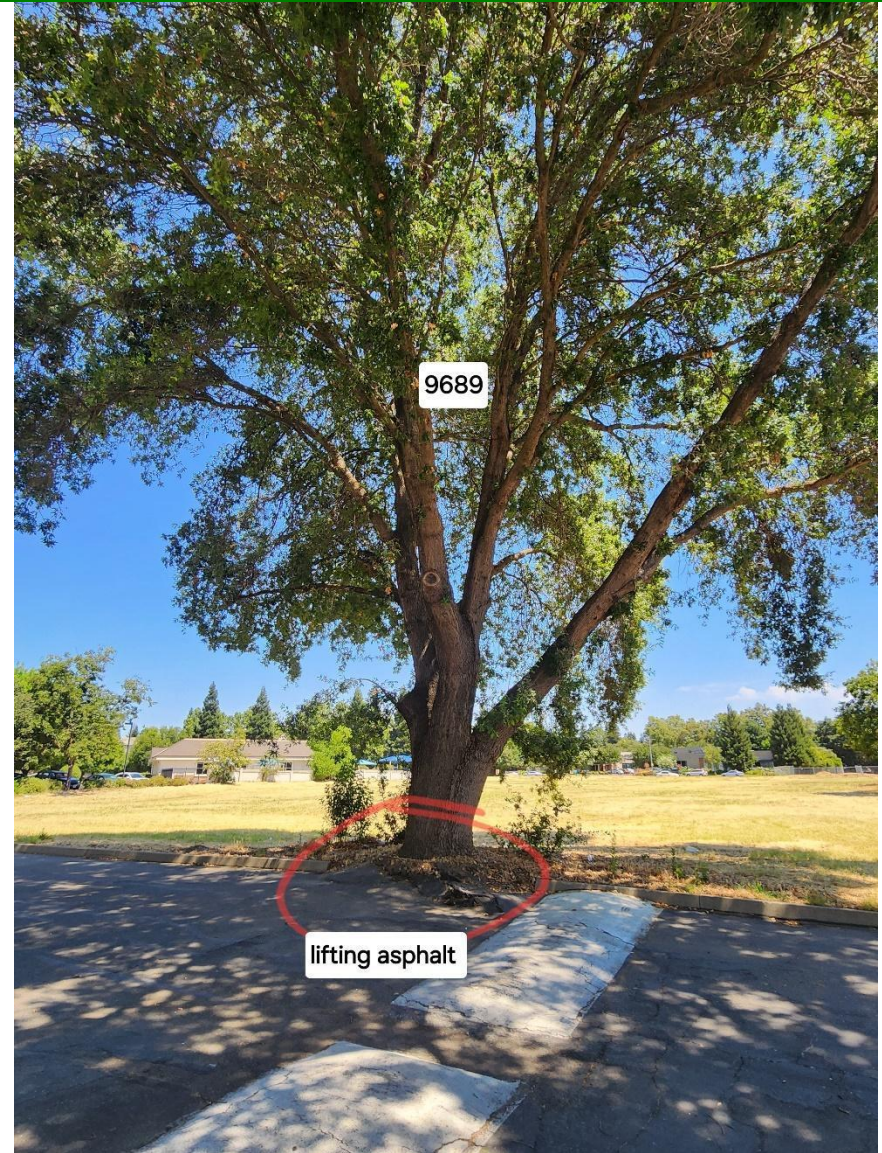


Photo #4, Shows Heritage Tree #9689, lifting asphalt



Photo #5, Shows Tree #9690, left (possibly offsite) and Tree #104, right (offsite)



Photo #6, Shows Tree #9693