

APPENDIX B
PRELIMINARY ARBORIST REPORT AND TREE INVENTORY



California Tree and Landscape Consulting, Inc.

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September 1, 2023

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Via Email: tammy@pdf-usa.com

PRELIMINARY ARBORIST REPORT AND TREE INVENTORY

RE: Corporate Way, APN #031-0053-017, #031-0053-028, #031-0053-030; City of Sacramento Jurisdiction

Summary

Tammy Rayfield of PDF Development contacted California Tree and Landscape Consulting, Inc., on behalf of the property owner, to inventory and evaluate the trees on the site for purposes of evaluating the impacts to the trees during development¹. In addition, we are to provide a Tree Preservation Plan for protection of the trees to remain during the development process. The address is Corporate Way (APN #031-0053-017, #031-0053-028, #031-0053-030. The parcel is adjacent to 1501 Corporate way) and is subject to the jurisdiction of the City of Sacramento. (See Appendix 1 –Tree Location Map)

Edwin E. Stirtz, ISA Certified Arborist #WE-0510AM, visited the site on August 9, 2023. A total of 8 trees were evaluated for potential conflicts during development of the parcel. 5 trees may be on the parcel and 3 trees are located offsite. Following evaluation, 1 tree, a dead tree, is recommended for removal.

Table 1 – Tree Inventory

Tree Species	Trees Inventoried	Trees located on the Parcel ²	Trees Protected by Code	Trees of Local Importance	Proposed for Removal
Chinese pistache, <i>Pistacia chinensis</i>	3	0	0	0	TBD
Flowering cherry, <i>Prunus sp.</i>	3	3 (3 may be offsite)	0	0	TBD
Pacific willow, <i>Salix lasiandra</i>	1	1 (1 may be offsite)	0	0	TBD
Dead	1	1 (1 may be offsite)	0	0	1
Totals:	8	5 (5 may be offsite)	0	0	1

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

¹ Development Plans were not provided at this time.

² 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.

METHODS

Appendix 2 in this report is the detailed inventory of the trees. The following terms will further explain our methods and 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.

Tree Measurements: DSH (diameter at standard 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 DSH for all trees. A Stanley laser distance meter was used to measure distances and/or pacing was used to estimate canopy measurements. Canopy radius measurements may also have been estimated due to obstructions, such as steep slopes or other trees.

Terms

Field Tag #	The pre-stamped tree number on the tag which is installed at approximately 6 feet above ground level on the north side of the tree.
Old Tag #	If additional field tags are found on the trees and are legible, they are listed here.
Species	The species of a tree is listed by our local and correct common name and botanical name by genus (capitalized) and species (lower case). Oaks frequently cross-pollinate and hybridize, but the identification is towards the strongest characteristics.
DSH	Diameter at standard 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”
Measured at	Height above average ground level where the measurement of DBH was taken
Canopy radius	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 can further define a protection zone if specified in the local ordinance as such or can indicate if pruning may be required for development.
Protected Root Zone	The radius of the protected 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.

No problem(s)	Excellent	5	No problems found from a visual ground inspection. Structurally, these trees have properly spaced branches and near perfect
No apparent problem(s)	Good or Fair to Good	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.
Minor problem(s)	Fair	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 and/or health can be improved.
Major or uncorrectable problems (2)	Fair to Poor	2	The tree has major problems. If the option is taken to preserve the tree, additional evaluation to identify if health or structure can be improved with correct arboricultural work including, but not limited to: pruning, cabling, bracing, bolting, guying, spraying, mistletoe removal, vertical mulching, fertilization, etc. Additionally, risk should be evaluated as a tree rated 2 may have structural conditions which indicate there is a high likelihood of some type of failure. Tree rated 2 should be removed if these additional evaluations will not be performed.
Extreme problem(s)	Poor	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.
Dead	Dead	0	This indicates the tree has no significant sign of life.

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 DSH 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.

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%.

Limitations

All of the conclusions in this report are based solely on the observation of conditions on the site which were readily visible from the ground. Trees may appear to be healthy and structurally sound but can contain hidden faults which could result in failure. Any tree could have had previous failures in the upper canopy which could not be seen adequately from the ground. This tree was evaluated during the dormant season.

RECOMMENDATIONS

Follow the General Development Guidelines, Appendix 3, unless otherwise specified in Appendix 2.

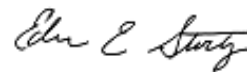
- Clearance pruning, if required, should include removal of all the lower foliage that may interfere with equipment PRIOR to having grading or other equipment on site. The Project Arborist should approve the extent of foliage elevation and oversee the pruning to be performed by a contractor who is an ISA Certified Arborist.
- Any and all work to be performed inside the protected root zone fencing shall be supervised by the project arborist.
- An Arborist inspection schedule should be developed to monitor the site during (and after) construction to confirm protection measures are followed and make recommendations for care of the trees on site, as needed.

Report Prepared by:

Project Arborist:



Caroline Nicholas
Arborist Assistant



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

Appendix 1 – Map of the Property Showing Tree Location
Appendix 2 – Tree Data
Appendix 3 – General Development Guidelines for all trees to remain
Appendix 4 – Site Photographs

Bibliography

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APPENDIX 1 – MAP OF THE PROPERTY SHOWING TREE LOCATION

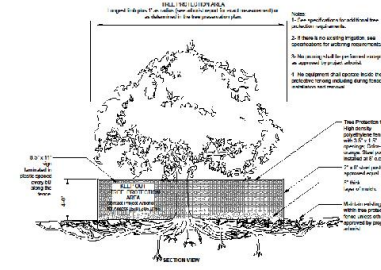


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Tree Protection General Requirements

1. The project arborist for this project is California Tree & Landscape Consulting. The primary contact information is Edwin E. Stirtz (916) 801-8059. The project arborist may continue to provide expertise and make additional recommendations during the construction process if and when additional impacts occur or tree response is poor. Monitoring and construction oversight by the project arborist is recommended for all projects and required when a final letter of assessment is required by the jurisdiction.
2. The project arborist should inspect the exclusionary root protection fencing installed by the contractor prior to any grading and/or grubbing for compliance with the recommended protection zones. Additionally, the project arborist shall inspect the fencing at the onset of each phase of construction. The protection zone for trees is specified as the 'canopy radius' in Appendix 2 unless otherwise specified in the preservation requirements. The location of the tree protection fencing shall be depicted on the plans pursuant to the arborist recommendations. Note 'drillpipe' is not an acceptable location for installation of tree protection fencing.
3. The project arborist should directly supervise any clearance pruning, irrigation, fertilization, placement of mulch and/or chemical treatments. If clearance pruning is required, the Project Arborist should approve the extent of foliage elevation and oversee the pruning to be performed by a contractor who is an ISA Certified Arborist. Clearance pruning should include removal of all the lower foliage that may interfere with equipment PRIOR to having grading or other equipment on site.
4. No trunk within the root protection zone of any trees shall be removed using a backhoe or other piece of grading equipment.
5. Clearly designate an area on the site outside the drip line of all trees where construction materials may be stored, and parking can take place. No materials or parking shall take place within the root zones of protected trees.
6. Any and all work to be performed inside the protected root zone fencing, including all grading and utility trenching, shall be approved and/or supervised by the project arborist.
7. Trenching, if required, inside the protected root zone shall be approved and/or supervised by the project arborist and may be required to be by a hydraulic or air spade, placing pipes underneath the roots, or boring deeper trenches underneath the roots.



Tree Protection
The City of Sacramento Requires CHAIN LINK Fencing for Tree Protection

TREE INVENTORY MAP

>Tree locations are approximate and were collected using apple IOS products.
>Property line information was downloaded from Sacramento County on 08/13/2023.

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

O	Corporate Way Dutch Bros
	Sheet No. TPP 1.0
	PREPARED BY: Nicole Harrison, ISA Cert #WE-6500AM Date: 8/31/2023

APPENDIX 2 – TREE DATA

Tag #	Protected By Code	Offsite	Species Common Name	Species Botanical Name	DSH (in.)	DBH Multi Stem (in.)	Measured At (in.)	Canopy Radius (ft.)	Arborist Rating	Notes
100	No	Yes	Chinese pistache	<i>Pistacia chinensis</i>	9		54	18	3-Minor Problems	Offsite in finger planter approximately 14 feet from estimated property line
101	No	Yes	Chinese pistache	<i>Pistacia chinensis</i>	12		54	17	3-Minor Problems	Located in parking lot finger planter offsite buy an estimated 14 feet
102	No	Yes	Chinese pistache	<i>Pistacia chinensis</i>	13		54	18	3-Minor Problems	Offsite located in finger planter approximately 16 feet from estimated property line
2353	No	Unknown	Pacific Willow	<i>Salix lasiandra</i>	29	14,14,15	54	24	2-Major Structure or health problems	Root collar/base obscured with debris and shrubs, probable, weak attachments, Forks, somewhere between grade and 3 feet. Excessive amount of dead branches.
2354	No	Unknown	Flowering cherry	<i>Prunus sp.</i>	6		54	9	2-Major Structure or health problems	Poor condition, not maintained
2355	No	Unknown	Flowering cherry	<i>Prunus sp.</i>	10		54	0	0-Dead	Tree is completely dead
2356	No	Unknown	Flowering cherry	<i>Prunus sp.</i>	6		40	6	2-Major Structure or health problems	Very poor condition, son scolding on lower trunk out of balance
2357	No	Unknown	Flowering cherry	<i>Prunus sp.</i>	8		54	8	2-Major Structure or health problems	Severe son scolding to lower trunk with significant entered K not maintained

APPENDIX 3 - GENERAL PRACTICES FOR TREE PROTECTION

Definitions

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

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

Methods Used in Tree Protection:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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.

APPENDIX 4 – SITE PHOTOGRAPHS By Edwin E. Stirtz, August 9, 2023



Photo #1, A portion of the site



Photo #2, Pepper tree



Photo #3, Dead cherry tree



Photo #4, Offsite parking lot tree typical



Photo #5, Southeast property corner



Photo #6, 2 cherry trees



Photo #7, Cherry tree w/ trunk defect



Photo #8, Northeast corner at driveway for 1501 Corporate Way