California Tree and Landscape Consulting, Inc.

June 24, 2019

Michael Weinstein
Psynergy Programs, Inc.
18225 Hale Avenue
Morgan Hill, Ca 95037
VIA Email: Mweinstein@psynergy.org

PRE-DEVELOPMENT ARBORIST REPORT & TREE INVENTORY

RE: 4514, 4516, 4604, 4608, 4612, and 4616 Roosevelt Ave; 4632 and 4640 47th Street, Sacramento, Ca

Executive Summary:

Marion Weaver, the landscape architect, on behalf of the property owner, contacted California Tree and Landscape Consulting, Inc. to inventory and evaluate the trees on the site for purposes of evaluating the impacts to the trees from the proposed grading plan C1, dated 6-19, for the Nueva Vista Sacramento LLC, by MH Engineering Co. The properties are located on Roosevelt Avenue in Sacramento, California, and are subject to the jurisdiction of Sacramento County. See Supporting Information Appendix A –Tree Location Map.

Nicole Harrison, ISA Certified Arborist #WE-6500AM, was on site May 16-21, 2019. In addition, much of the tree information was provided by Jeffrey Strader, ISA Certified Arborist #WE-9721A, of A Better Tree Service, who provided the client with a preliminary inventory. A total of 55 trees were evaluated on this property or on the neighboring parcels for the proposed development, of which, 5 are protected by the Sacramento County Tree Preservation Ordinance[1]. All 5 of the protected trees will require mitigation fees for removal or heavy impacts to the root zone for a total of 116 inches.

Tree Species	Trees Inventoried	Protected by Sacramento County Tree Preservation, 19.12[1]	Proposed for Removal	Trees impacted by the proposed development and requiring special protection measures and/or mitigation
Coast Live Oak, Quercus agrifolia	1	0	0	1 (Off Site at 4730 47th St.) Severe Impact
Valley Oak, Quercus lobata	5	5	1	4 (2 property line trees, 2 on the site) Moderate to Severe Impacts
High value landscape sp (Chinese Elm, London Planetree, Aleppo, Stone Pine, Incense Cedar)	10	0	6	3 (1 is Off Site at 4730 47th St.) Moderate Impact, 2 onsite trees, Moderate to Severe
Low value landscape sp. (Privet, Crape Myrtle, Tree of Heaven, Willow, Blue Gum, Red Bark, Eucalyptus)	25	0	25	–
Misc Orchard species (Almond, Citrus, Pecan, Persimmon, Plum & Walnut)	14	0	8	5 (3 property line trees, 2 on the site), Moderate to Severe Impacts
Total	55	5	40	12

Methods

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

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

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

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

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

Terms

Field Tag #	The pre-stamped tree number on the tag which is installed at approximately 6 feet above ground level on the north side of the tree.
Old Tag #	If additional field tags are found on the trees and are legible, they are listed here.
Species	The species of a tree is listed by our local and correct common name and botanical name by genus (capitalized) and species (lower case). Oaks frequently cross-pollinate and hybridize, but the identification is towards the strongest characteristics.
DBH	Diameter breast high' is normally measured at 4'6" (above the average ground height for "Urban Forestry"), but if that varies then the location where it is measured is noted in the next column "measured at"
Measured at	Height above average ground level where the measurement of DBH was taken
Canopy radius and Protection Area	The farthest extent of the crown composed of leaves and small twigs. Most trees are not evenly balanced. This measurement represents the longest extension from the trunk to the outer canopy. The dripline measurement is from the center point of the tree and is shown on the Tree Location Map as a circle. This measurement further defines the protection zone and can indicate if pruning may be required for development. Sacramento County specifies this measurement as the required 'Protected Root Zone'
Critical Root Zone	The radius of the critical root zone is a circle equal to the trunk diameter inches converted to feet and factored by tree age, condition and health pursuant to the industry standard. Best Management Practices: Managing Trees During Construction, the companion publication to the Approved American National Standard, provides guidance regarding minimum tree root protection zones for long term survival. In instances where a tree is multi-stemmed the protected root zone is equal to the extrapolated diameter (sum of the area of each stem converted to a single stem) factored by tree age, condition and health.
Arborist Rating	Subjective to condition and is based on both the health and structure of the tree. All of the trees were rated for condition, per the recognized national standard as set up by the Council of Tree and Landscape Appraisers and the International Society of Arboriculture (ISA) on a numeric scale of 5 (being the highest) to 0 (the worst condition, dead) as in Chart A. The rating was done in the field at the time of the measuring and inspection.

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

Rating #0: This indicates a tree that has no significant sign of life.
Rating #1: The problems are extreme. This rating is assigned to a tree that has structural and/or health problems that no amount of work or effort can change. The issues may or may not be considered a dangerous situation.
Rating #2: The tree has major problems. If the option is taken to preserve the tree, its condition could be improved with correct arboricultural work including, but not limited to: pruning, cabling, bracing, bolting, guying, spraying, mistletoe removal, vertical mulching, fertilization, etc. If the recommended actions are completed correctly, hazard can be reduced and the rating can be elevated to a 3. If no action is taken the tree is considered a liability and should be removed.
Rating #3: The tree is in fair condition. There are some minor structural or health problems that pose no immediate danger. When the recommended actions in an arborist report are completed correctly the defect(s) can be minimized or eliminated.
Rating #4: The tree is in good condition and there are no apparent problems that a Certified Arborist can see from a visual ground inspection. If potential structural or health problems are tended to at this stage future hazard can be reduced and more serious health problems can be averted.
Rating #5: No problems found from a visual ground inspection. Structurally, these trees have properly spaced branches and near perfect characteristics for the species. Highly rated trees are not common in natural or developed landscapes. No tree is ever perfect especially with the unpredictability of nature, but with this highest rating, the condition should be considered excellent.

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

Preservation Requirements: Recommended actions to increase likelihood of long term survival, health and longevity.

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.

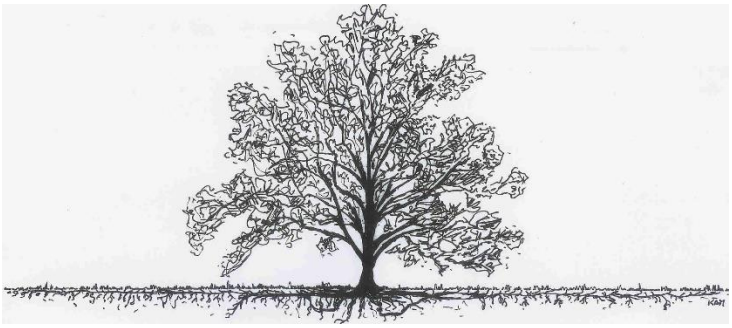
Critical	Tree is likely to show moderate to severe symptoms annually and a pattern of decline. Chance of long term survival post development is negligible. Impacts to the Protected Root Zone are up to 80%.

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

Pruning Mature Trees for Risk Reduction and/or Development Clearance

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

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

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

Arborist Classifications

There are different types of Arborists:

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

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

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

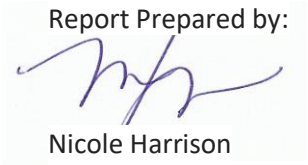
Consulting Arborist: An American Society of Consulting Arborists Registered Consulting Arborist is someone who has been trained and then tested to have specialized knowledge of trees; and trained and tested to provide high quality reports and documentation. You can look up registered consulting arborists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

RECOMMENTATIONS: 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.

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

Report Prepared by:



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

Attachments
Appendix 1 – Tree Location Map/Development Site Plan
Appendix 2 – Tree Data

Appendix 3 – General Development Guidelines

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.

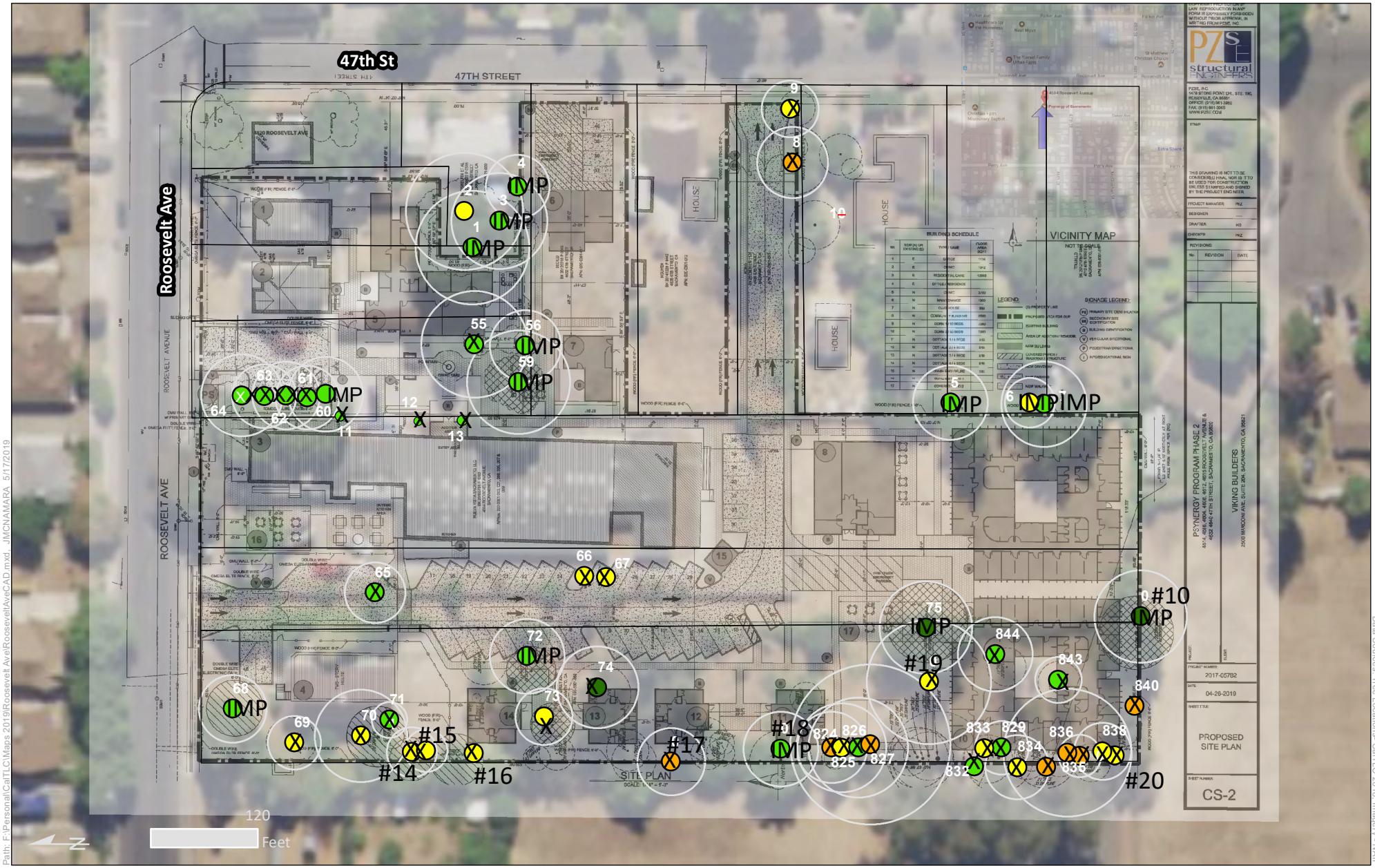
Tree Care Industry Association. (2017). *Tree, Shrub, and Other Woody Plant Management - Standard Practices (Pruning).* Londonderry: Tree Care Industry Association.

Urban, J. (2008). *Up by the Roots.* Champaign: International Society of Arboriculture.

4514 Roosevelt Ave

Sacramento, Sacramento County, California.

ARBORIST SURVEY



Path: F:\Personal\CalTLC\Maps 2019\Roosevelt Ave\RooseveltAveCAD.mxd JMCNAMARA 5/17/2019

Data Sources: Tree Locations- CalTLC 2019; Imagery - NAIP

CalTLC

5/17/2019

>Tree locations are approximate and were collected using ISO apple products.
>Property line information was downloaded from Sacramento County on 05/16/2019.
>Development plans provided by PZ Structural Engineering dated 04/29/2019.

Arborist Rating

- 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
- Property Line
- Measured Tree Canopy

Appendix 2 – Tree Data

Field Tag #	Species Common Name	Species Botanical Name	DBH	Canopy Radius	Arborist Rating	Development Status	Notes	Preservation Requirements	Impact Notes
1	Coast Live Oak	Quercus agrifolia	±20, ±12	32	3 Fair - Minor Problems	Impacted	offsite 2'? No visibility below 7' due to fence, 2 main stems, larger stem codominant at 10' into 3, entire canopy leans over development parcel, Clearance pruning required at 20'	(1) Install unmovable exclusionary fence at 2' from back of proposed structure. NOTE: Access to structure will be limited for foot traffic, scaffold, etc.; (2) Install 8" of wood chips in protection zone using onsite trees being removed; (3) Reduce canopy under project arborist supervision (Note: Structure height is proposed at 12' and current canopy extends into structure area)	Assumed tree is 1' off property line, foundation for proposed structure < 10' with impacts likely at 5' from trunk - 40%
2	Italian Stone Pine	Pinus pinea	±35	33	2 Major Structure or Health Problems		18' off the site from the north, ±25 from the west	Follow general recommendations	< 20% Impact
3	Pecan	Carya illinoinensis	±20	27	3 Fair - Minor Problems		14' off the site, no clearance pruning required	Follow general recommendations	< 20% Impact
4	English Walnut	Juglans regia	13	18	3 Fair - Minor Problems	Impacted	Canopy onto development parcel, will require pruning	(1) Install unmovable exclusionary fence at edge of proposed walkway. (2) Install 8" of wood chips in protection zone using onsite trees being removed; (3) Reduce canopy under project arborist supervision	Assumed tree is 1' off property line, proposed walkway is < 10' from trunk - 19.5%. Severe pruning may be required
5	Pecan	Carya illinoinensis	13	21	3 Fair - Minor Problems	Impacted	Close to fenceline	(1) Install unmovable exclusionary fence at 5' from property line. (2) Install 8" of wood chips in protection zone using onsite trees being removed; (3) All trenching/digging for storm drain under project arborist supervision - structural roots may need to be severed, OR storm drain to be bored within 10' of trunk (20' total)	Stormdrain at 2'(?) along property line, >40% impact

Field Tag #	Species Common Name	Species Botanical Name	DBH	Canopy Radius	Arborist Rating	Development Status	Notes	Preservation Requirements	Impact Notes
6	English Walnut	Juglans regia	±24, ±24, ±24	24	3 Fair - Minor Problems	Impacted	fence jogs around trunk, at least three trunks 24"	(1) Install unmovable exclusionary fence at a minimum of 12' from property line. (2) Install 8" of wood chips in protection zone using onsite trees being removed; (3) Reduce canopy under project arborist supervision - may be Severe, need property owner permission, (4) All trenching/digging for storm drain under project arborist supervision - structural roots may need to be severed, OR storm drain to be bored within 10' of trunk (20' total)	Storm drain at 2'(?) along property line, >40% impact
7	Valley Oak	TBD	7	14	2 Major Structure or Health Problems	Impacted	embedded fence wire, less than 2' off fence line, poor structure, under walnut	(1) Install unmovable exclusionary fence at 3' from property line. (2) Install 8" of wood chips in protection zone using onsite trees being removed; (3) Diggning/trenching for storm drain under project arborist supervision	Stormdrain at 2'(?) along property line, >40% impact
8	Tree of Heaven	Ailanthus altissima	±15	20	1 Extreme Structure or Health Problems	Proposed for Removal	No Access, 1 sided evaluation from street. Late coming out of dormancy, debris at base, poor topping wounds at 15' with decay, poor canopy density		
9	Tree of Heaven	Ailanthus altissima	±10	16	2 Major Structure or Health Problems	Proposed for Removal	No Access. Poor at flare with 2 stems intertwining to 7', in contact with fence, topped at 8'? One sided canopy east over street, fair crown ratio and fair density		
10	Valley Oak	Quercus lobata	30	26	4 Good - No Apparent Problems	**Impacted**	Not measured no access, located between chain-link from Park and new wood privacy fence, fair structure, good crown ratio, good canopy density	(1) Install unmovable exclusionary fence at a minimum of 5' from property line. (2) Install 8" of wood chips in protection zone using onsite trees being removed; (3) Reduce canopy under project arborist supervision - may be Severe. (4) Storm drain shall be a minimum of 20' from trunk. (5) All trenching/digging for foundation within 12' of trunk under project arborist supervision	Root encroachment at 5' from trunk = 38%, likely needs significant clearance pruning
11	Crape Myrtle	Lagerstromia indica	Not Measured	4	3 Fair - Minor Problems	Proposed for Removal			

Field Tag #	Species Common Name	Species Botanical Name	DBH	Canopy Radius	Arborist Rating	Development Status	Notes	Preservation Requirements	Impact Notes
12	Crape Myrtle	Lagerstromia indica	Not Measured	6	3 Fair - Minor Problems	Proposed for Removal			
13	Crape Myrtle	Lagerstromia indica	Not Measured	6	3 Fair - Minor Problems	Proposed for Removal			
14	Plum	Prunus sp.	10, 6	14	2 Major Structure or Health Problems	Proposed for Removal	On the Fenceline sprouting is being removed below 2', structural am in contact with top offense for structure from 5' up crossing lambs narrow attachments rubbing. I have a comic sprouting Faircrown ratio good density		
15	Plum	Prunus sp.	4, 3, 2, 1, 1, 2	12	2 Major Structure or Health Problems	Proposed for Removal	On the Fenceline multi-stem from ground some removed some stubs overall understory poor structure good density. Lots of resprouting		
16	Plum	Prunus sp.	2, 2, 2, 5, 4, 4, 5	0	2 Major Structure or Health Problems	Proposed for Removal	On the Fenceline codominant from grounds stub in Junction some stems measured low overall rubbing Crossing or structure good density		
17	Almond	Prunus dulcis	9, 12 @ 3', 8, 8	19	1 Extreme Structure or Health Problems	Proposed for Removal	Wide at flare with most stems originating from ground, pruned on parcel side for clearance most of remaining canopy is over schoolyard, Fair crown ratio, good density, lots of resprouting		

Field Tag #	Species Common Name	Species Botanical Name	DBH	Canopy Radius	Arborist Rating	Development Status	Notes	Preservation Requirements	Impact Notes
18	California Black Walnut	Juglans calfornica	17	21	3 Fair - Minor Problems	**Impacted**	On Fenceline, codominant at 4' stub on property side with resprouting, old pruning wound, poor structure at 6' into 4 stems against the fence, one wide structural junction at 3' south is most of canopy, overall fair crown ratio, fair to good density	(1) Install unmovable exclusionary fence at 10' from property line. (2) Install 8" of wood chips in protection zone using onsite trees being removed; (3) Diggning/trenching for overland drainage under project arborist supervision	Foundation is at an adequate distance, overland drainage unlikely to cause any signficant impact, root impact = <20%
19	Blue Gum	Eucalyptus globulus	0	0	2 Major Structure or Health Problems	Proposed for Removal			
20	California Black Walnut	Juglans calfornica	20	12	1 Extreme Structure or Health Problems	Proposed for Removal	Fair at flare, codominant at 4', 12" stem removed, remaining stem entire canopy is over schoolyard, poor crown with significant die back in upper canopy		
55	Chinese Evergreen Elm	Ulmus parvifolia	12.5	30	3 Fair - Minor Problems	Proposed for Removal			
56	Chinese Evergreen Elm	Ulmus parvifolia	8	20	3 Fair - Minor Problems	**Impacted**	Good structure below 10', suppressed bows over at top, good canopy density	Path proposed between trees can not change existing grade (ie. need stairs or no path). (1) Install exclusionary fence at minimum of 7' from trunk and include in fencing for tree #59. (2) Install 8" of wood chips in protection zone using onsite trees being removed; (3) Any clearance pruning under project arborist supervision	> 40% Impact

Field Tag #	Species Common Name	Species Botanical Name	DBH	Canopy Radius	Arborist Rating	Development Status	Notes	Preservation Requirements	Impact Notes
59	Valley Oak	Quercus lobata	37	29	3 Fair - Minor Problems	**Impacted**	Less than 2' to cement, codominant with included bark from 2 to 5', 3 stems, additional codominant unions at 7' and 10', smallest stem from 2' poor structure understory and bows over, otherwise fair structure and good canopy density	Path proposed between trees can not change existing grade (ie. need stairs or no path), seating area beneath 59 to the south should be moved/removed to a minimum distance of 15', storm drain line and inlet should be a minimum of 22' from trunk. (1) Install exclusionary fence at minimum of 20' from trunk (in all directions) and include in fencing for tree #56. (2) Install 8" of wood chips in protection zone using onsite trees being removed; (3) Any clearance pruning under project arborist supervision. (4) Grade changes for path between trees under project arborist supervision. (5) Trenching/digging for storm drain within 25' of trunk under arborist supervision. (6) Chemical stress and preventative pest treatment required prior to grading/grubbing.	> 40% Impact
60	London Planetree	Platanus x acerifolia	25	21	3 Fair - Minor Problems	**Impacted**	Planting island covered in rock with cars parking on roots, needs protection if to remain	Should be considered for retention even if others are removed. (1) Install exclusionary fence at minimum of 10' from trunk (in all directions) and at edge of existing parking area. (2) Install 8" of wood chips in protection zone using onsite trees being removed; (3) Any clearance pruning under project arborist supervision. (4) Trenching/digging for storm drain within 15' of trunk under arborist supervision. (5) Chemical stress and preventative pest treatment required prior to grading/grubbing.	±35% Impact
61	London Planetree	Platanus x acerifolia	12	18	3 Fair - Minor Problems	Proposed for Removal	18" to parking		
62	London Planetree	Platanus x acerifolia	12	19	3 Fair - Minor Problems	Proposed for Removal	18" to parking		
63	London Planetree	Platanus x acerifolia	12	18	3 Fair - Minor Problems	Proposed for Removal	Cement to base, 18" off of parking, fence also encroaching on base of tree, one sided canopy E, fair crown		

Field Tag #	Species Common Name	Species Botanical Name	DBH	Canopy Radius	Arborist Rating	Development Status	Notes	Preservation Requirements	Impact Notes
64	London Planetree	Platanus x acerifolia	21	23	3 Fair - Minor Problems	Proposed for Removal	Codominant unions at 4' and 5' into 3 stems, fair structure, fair canopy density		
65	Willow sp.	Salix sp.	10	17	3 Fair - Minor Problems	Proposed for Removal			
66	Red Gum-Ironbark		13.5	17	2 Major Structure or Health Problems	Proposed for Removal	Trunk wound below 1', cavity into soil at base, dogleg at 7 to 10', poor structure, large failure in upper canopy, fair density		
67	Allepo Pine	Pinus halepensis	6	7	2 Major Structure or Health Problems	Proposed for Removal			
68	Incense Cedar	Calocedrus decurrens	31	19	3 Fair - Minor Problems	**Impacted**	Fair at flare, slight lean, good crowd ratio fair canopy density minor die back in canopy. Going in grassy lawn	Stormdrain line and any grading needs to be a minimum of 25' from trunk. (1) Install exclusionary fence at a minimum of 15' from trunk in all directions and to the property line. (2) Install 8" of wood chips in protection zone using onsite trees being removed. (3) Chemical stress and preventative pest treatment required prior to grading/grubbing. (4) Summer irrigation required pursuant to arborist recommendations.	±25% Impact
69	Privet	Ligustrum sp.	8, 5, 8	15	2 Major Structure or Health Problems	Proposed for Removal	8,5,8. Fair at flare codominant at 8" and 12" both narrow attachments for pruning and narrow crossing lambs and west stem fair ratio for fair to good density. Closing wounds on lower trunk		
70	Almond	Prunus dulcis	19.5	26	2 Major Structure or Health Problems	Proposed for Removal	Large surface routes towards structure, slightly in with correction at 6' old decaying failure at 5' for upper canopy structure Faircrown racial a good crowd density		

Field Tag #	Species Common Name	Species Botanical Name	DBH	Canopy Radius	Arborist Rating	Development Status	Notes	Preservation Requirements	Impact Notes
71	Mandarin	Citrus sp.	6, 4	10	3 Fair - Minor Problems	Proposed for Removal	4" limb removed at 18" narrower connection between two remaining stems at 18", other small miscellaneous pruning and deadwood issues overall fair to good		
72	Pecan	Carya illinoinensis	15.0	21	3 Fair - Minor Problems	**Impacted**		Consider changing to a compact parking space to allow more distance to grading. (1) Install exclusionary fence at minimum of 5'' from trunk on parking lot side and 25' in all other directions. (2) Install 8" of wood chips in protection zone using onsite trees being removed; (3) Any clearance pruning under project arborist supervision. (4) Any work withing the protection zone under project arborist supervision	> 40% Impact
73	Persimmon	Diospyros virginiana	12	16	2 Major Structure or Health Problems	Proposed for Removal	Good at flare open wound 6 to 12" with deadwood under bark too cold IΓÇÖm at Junction at 5 to 6' additional wound, decaying removal cut at 8', poor crown ratio fair density		
74	Valley Oak	Quercus lobata	19	23	4 Good - No Apparent Problems	Proposed for Removal	Good at flare, for structural am attachment at 10' mid to upper canopy additional attachments most moderately angled, good crowd ratio fair density		

Field Tag #	Species Common Name	Species Botanical Name	DBH	Canopy Radius	Arborist Rating	Development Status	Notes	Preservation Requirements	Impact Notes
75	Valley Oak	Quercus lobata	23	26	4 Good - No Apparent Problems	**Impacted**	bump out in fence, good at flare, rocks should be removed at base, nice structure for species, wide attachments, good canopy, good crown ratio and density	Covered patio and proposed walkways should not change existing grade. (1) Install exclusionary fence at minimum of 20' from trunk (in all directions) except at foundation to be 2' from foundation location (2) Install 8" of wood chips in protection zone using onsite trees being removed; (3) Any clearance pruning under project arborist supervision. (4) Grade changes for path and piers for covered patio under project arborist supervision. (5) Chemical stress and preventative pest treatment required prior to grading/grubbing.	> 40% Impact
824	Blue Gum	Eucalyptus globulus	17	20	1 Extreme Structure or Health Problems	Proposed for Removal	Poor from ground, removal cut at 12", very poor structure, most of canopy failed at 15'		
825	Blue Gum	Eucalyptus globulus	20.5	25	2 Major Structure or Health Problems	Proposed for Removal	fair structure, fair vigor		
826	Blue Gum	Eucalyptus globulus	22.5	28	3 Fair - Minor Problems	Proposed for Removal	Good flare, fair crown ratio, mostly one-sided due to suppression to the east, fair canopy density		
827	Blue Gum	Eucalyptus globulus	19	45	1 Extreme Structure or Health Problems	Proposed for Removal	Leans from ground, understory, overextended, large failures		
828	Blue Gum	Eucalyptus globulus	34.5	35	2 Major Structure or Health Problems	Proposed for Removal	Good at flare, codominant at 6' with seam from ground, North stem is leans with poor canopy development; main upright stem has fair crown ratio and fair density. See photo		
829	Blue Gum	Eucalyptus globulus	15.5	15	3 Fair - Minor Problems	Proposed for Removal			

Field Tag #	Species Common Name	Species Botanical Name	DBH	Canopy Radius	Arborist Rating	Development Status	Notes	Preservation Requirements	Impact Notes
831	Blue Gum	Eucalyptus globulus	14	12	2 Major Structure or Health Problems	Proposed for Removal	Not evaluated, information from A Better Tree Service		
832	Blue Gum	Eucalyptus globulus	0.0	0	3 Fair - Minor Problems	Proposed for Removal			
833	Blue Gum	Eucalyptus globulus	27, ±15	0	2 Major Structure or Health Problems	Proposed for Removal	Large extensive surface roots to 7' onto parcel side, codominant with poor junction and included bark at 2', smaller stem leans over schoolyard, larger stem has fair crown ratio and fair density		
834	Blue Gum	Eucalyptus globulus	16	18	2 Major Structure or Health Problems	Proposed for Removal			
835	Blue Gum	Eucalyptus globulus	9	0	1 Extreme Structure or Health Problems	Proposed for Removal	Understory structure, poor attachments and rubbing with next tree, poor canopy		
836	Blue Gum	Eucalyptus globulus	23	36	1 Extreme Structure or Health Problems	Proposed for Removal			
838	Blue Gum	Eucalyptus globulus	14.5	16	2 Major Structure or Health Problems	Proposed for Removal			

Field Tag #	Species Common Name	Species Botanical Name	DBH	Canopy Radius	Arborist Rating	Development Status	Notes	Preservation Requirements	Impact Notes
840	Blue Gum	Eucalyptus globulus	15, 10	0	1 Extreme Structure or Health Problems	Proposed for Removal	Exposed structural roots, removal cuts, poor codominant union at 3', smaller stem has understory structure and is over extended with poor taper; main stem has fair structure and fair canopy density		
843	Blue Gum	Eucalyptus globulus	13	13	3 Fair - Minor Problems	Proposed for Removal			
844	Blue Gum	Eucalyptus globulus	12	21	3 Fair - Minor Problems	Proposed for Removal	Fair at flare, poor taper above 10' fair crown ratio poor density		

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.[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.

[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.

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.

Appendix 4 – Site Photographs

Photo #1, Looking South, 4514 Roosevelt.
Taken from the middle of the parcel

Tree #75 on the left and #18 on the right in the foreground with the Blue Gum behind in the background

Photo #2, Looking North, 4514 Roosevelt,
Taken from the middle of the parcel

Tree #74 in the foreground on the Right, #73 on the left

Photo #3, Looking North, 4514 Roosevelt,
Taken from south side of parcel

Tree #75 on the right

Photo #4, Tree 10

Photo #5, 4516 Roosevelt, Looking approximately South

Tree #66 and 67

Photo #6, 4632 47th Street, Looking West

Tree #4 overhanging the parcel

Photo #7, Tree #60 existing conditions

Photo #8 & #9
Tree #59