



JULY 20, 2021

TO:

Landscape Design and Tree Section
County of Sacramento Dept. of Transportation
906 G Street, Suite 510, Sacramento, CA 95814
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SUBJECT:

Technical Memo: Arborist Survey for 5601 Gibbons Drive, Carmichael, CA.

INTRODUCTION

I performed an arborist survey in my capacity as a certified arborist of the property at 5601 Gibbons Drive, Carmichael (the Property), on July 15, 2021. The purpose of this survey was to inventory all trees within the Property, as required by Sacramento County as part of the environmental review of a property subdivision and development proposal.

Tree inventories and arborist reports submitted to DERA are used to evaluate project impacts and create appropriate mitigation pursuant to Sacramento County General Plan policies and CEQA. These survey results should not be construed as a technical analysis, such as for tree hazard assessment, plant appraisal, tree health diagnosis, or tree care prescription.

REGULATORY SETTING

Sacramento County regulates trees within their jurisdiction as follows:

"A Tree Pruning or Tree Removal Permit is required to prune or remove any public tree and certain private trees. Public Trees are those that occur on any County owned land (parks, building grounds, etc.) and/or within Right-of-Way situations. Privately owned trees also require a tree permit in accordance with Zoning Code Regulations and the County's Tree Preservation and Protection Ordinance. View the Tree Removal Permits page for more information."
<http://www.sacdot.com/Pages/TreeRemovalPermits.aspx>

Typical examples requiring a Tree Permit include:

- Any trees that are located within parking lots and/or the landscaped areas that surround commercial buildings or apartment complexes.
- Native oak trees (Heritage Trees) occurring anywhere, including on private residential properties.
- Public trees adjacent to roadways (Street Trees) within the County Right-of-Way or on any County land/parkway.
- Certain tree species that are especially prominent and stately are also considered as "Landmark" trees and receive special consideration for preservation during the Conditional Use Permit/Development Plan Review process through the Planning Department.
- (<http://www.sacdot.com/Pages/TreeRemovalPermits.aspx>)

Non-Native Tree Canopy Policy

The Urban Forest Management section of the Conservation Element of the General Plan has the objective of doubling the county's tree canopy by 2050. Supporting policies call for education and regional cooperation toward that objective. Further, Policy CO-145 specifies mitigation for non-native tree canopy impacts by creating equivalent canopy on-site. Equivalent canopy coverage is calculated using the 15-year shade cover values for tree species. If onsite mitigation isn't possible, then applicants may contribute to Greenprint funding. Mitigation for tree canopy impacts will be fully assessed through the environmental process and implemented through the conditions of approval for the project.

METHODS

Methods followed standards of the International Society of Arboriculture (ISA) and American National Standards Institute, Inc., and were performed by a currently certified arborist—Dr. G.O. Graening, ISA Certification Number WE-6725A. The following texts were consulted for tree identification, as needed: Pavlik (1991); Lanner (2002); Stuart and Sawyer (2001); Baldwin et al. (2012); and University of California at Berkeley (2013a,b).

The survey assessed trees that met the jurisdictional criteria of the Sacramento County Tree Preservation Ordinance (Sacramento County Code 480, Chapter 19.12, Sections 19.12.010 through 19.12.240) and the Sacramento County General Plan (Policy CO-130, Section 5):

Size Threshold. All native oak and specified non-oak native trees (see following species list) that are 6 inches in diameter (dbh) and larger (or 10-inch aggregate diameter for multi-trunk native oak and Northern California black walnut trees)

Species List

- valley oak/*Quercus lobata*
- interior live oak/*Quercus wislizeni*
- blue oak/*Quercus douglasii*
- coast live oak/*Quercus agrifolia* (in the Delta area)
- oracle oak/*Quercus X morehus*
- native oak hybrids
- California sycamore/*Platanus racemosa*
- Northern California black walnut/*Juglans californica v. hindsii*
- Oregon ash/*Fraxinus latifolia*
- Goodding's black willow/*Salix gooddingii*
- box elder/*Acer negundo v. californicum*
- white alder/*Alnus rhombifolia*
- California buckeye/*Aesculus californica*

Definitions

- Landmark Tree: This classification is for an especially prominent or stately tree, or a special variety of a certain tree. It can be any native or non-native tree that is exceptional for its type that is in good health and structural condition. Size is not a mandatory criterion (definition from September 2, 1992 memo and SCC §19.04.030).
- Heritage Tree: This classification is for a California native oak tree growing on any land in Sacramento County, including privately owned land, with a trunk sixty (60) inches or greater in girth (equal to 19 inches dbh or larger) measured four and one-half feet above the ground (from SCC §19.04.030).

RESULTS / TREE INVENTORY

Table 1 presents the tree inventory and the Exhibits show the location of tagged trees.

The following tree species occur on the Property: privet; olive; purple plum; Tree of Heaven; almond, interior live oak; valley oak, and blue oak.

Four native oaks larger than 4 inches DBH but smaller than 6 DBH were mapped, as suggested by DERA's arborist report submittal requirements.

No Street Trees or Public Trees were detected on the Property. No Landmark Trees are known on the Property. Two Heritage Trees were detected on the Property.

Note that all trees appear to be suffering from drought stress, as this summer has been extremely hot and dry: thus no trees were ranked "5" excellent condition. Note also that several oak trees had severe leans and/or unbalanced canopies and were given rankings of "2" declining; this indicates that trees will most likely topple and may pose a fall hazard.

For planning purposes, 1 dead oak tree was mapped.

Tree Inventory Table

Tag #	Scientific Name	DBH (inches)	Dripline radius (feet)	Condition (0-5)	Comment / Condition	Heritage Tree	under 6"
Tagged by others							
238	<i>Quercus lobata</i>	15.9	30	4			
239	<i>Quercus wislizeni</i>	6.3	20	4			
240	<i>Quercus wislizeni</i>	7.9	20	4			
241	<i>Quercus lobata</i>	7.0	18	4			
242	<i>Quercus lobata</i>	10.9	20	3	fair		
243	<i>Ulmus sp.</i>	6.9	15	2	sapsucker damage, poor health		
253	<i>Quercus wislizeni</i>	5.4	10	4			x
254	<i>Quercus lobata</i>	4.5	10	4			x
255	<i>Quercus wislizeni</i>	10.1	15	4			
256	<i>Quercus lobata</i>	19.5	30	4		yes	
257	<i>Quercus lobata</i>	5.8	20	4			x
258	<i>Quercus lobata</i>	9.9, 15.0	25	4	multi-stem		
259	<i>Quercus wislizeni</i>	9.2, 15.9	30	4	multi-stem		
259b	<i>Quercus wislizeni</i>	10.3	15	4	untagged, but adjacent to Tag #259		
260	<i>Quercus douglasii</i>	9.8	18	4			
261	<i>Quercus lobata</i>	5.7	8	4			x
262	<i>Quercus wislizeni</i>	15.6	25	4			
263	<i>Quercus wislizeni</i>	15.3	22	4			
264	<i>Quercus lobata</i>	12.5, 17.2	35	4	multi-stem		
265	<i>Quercus wislizeni</i>	6.7	20	2	unbalanced / lean		
266	n/a				missing tag		
267	<i>Quercus wislizeni</i>	50.6	50	3	broken half, some decay	yes	
268	<i>Quercus wislizeni</i>	16.1	40	2	unbalanced, lean, a hazard		
269	<i>Quercus wislizeni</i>	5.8, 4, 2, 2	12	4	multi-stem		
270	<i>Quercus lobata</i>	7.5	15	4			
271	<i>Quercus wislizeni</i>	10.9	18	4			
272	<i>Quercus wislizeni</i>	10.2, 13.2, 8.1	22	4	multi-stem		
273	<i>Quercus wislizeni</i>	8.6	15	4			
274	<i>Quercus wislizeni</i>	14.3	25	4			
275	<i>Quercus wislizeni</i>	7.6	15	4			
Tagged by Dr. Graening							
654	<i>Quercus wislizeni</i>	8	20	4			

Tag #	Scientific Name	DBH (inches)	Dripline radius (feet)	Condition (0-5)	Comment / Condition	Heritage Tree	under 6"
655	<i>Quercus wislizeni</i>	7.8	18	3	fair		
656	<i>Quercus lobata</i>	7.1	15	3	fair		
657	<i>Quercus lobata</i>	13.2	30	2	lean		
658	<i>Quercus wislizeni</i>	8.3	15	4			
659	<i>Quercus wislizeni</i>	13.3	25	4			
Untagged							
A	<i>Quercus wislizeni</i>	18	20	0	dead; untagged		

CONCLUSIONS AND RECOMMENDATIONS

Architectural drawings were not provided, and work areas were not staked, so specific trees and exact measurements of impact cannot be reported at this time.

The implementation of avoidance measures and tree impact minimization measures is recommended. These measures are provided in the Appendix.

Note that all trees are subject to toppling and branch failure as they mature, and thus there is always some tree hazard present where human or property targets are present. Regular tree maintenance performed by a certified arborist, including yearly inspections and periodic trimming, can reduce the risk of tree toppling or branch failure significantly. In general, I recommend maintenance pruning of all trees on the property to improve tree health and structure, to remove deadwood, and to reduce the risk of branch failure. Supplemental watering for trees in urban forests is recommended during periods of drought. This may consist of monthly or bi-monthly deep waterings using drip irrigation or hose. Discontinue if fungal infections or fruiting bodies appear and consult an arborist.

FROM:

A handwritten signature in black ink, appearing to read "G. O. Graening", with a stylized flourish at the end.

G. O. Graening, PhD, MSE

LITERATURE CITED AND FURTHER READING

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- ANSI A300 (Part 3)-2000: Tree Support Systems (a. Cabling, Bracing, and Guying).
- ANSI A300 (Part 4)-2002: Lightning Protection Systems.
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- ANSI A300 (Part 6)-2005: Transplanting.
- ANSI A300 (Part 7)-2006: Integrated Vegetation Management and Electric Utility Rights-of-Way.

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University of California at Berkeley. 2013b. CalPhotos. Biodiversity Sciences Technology Group, University of California at Berkeley. Internet database available at <http://calphotos.berkeley.edu/>.

QUALIFICATIONS OF CONSULTING ARBORIST

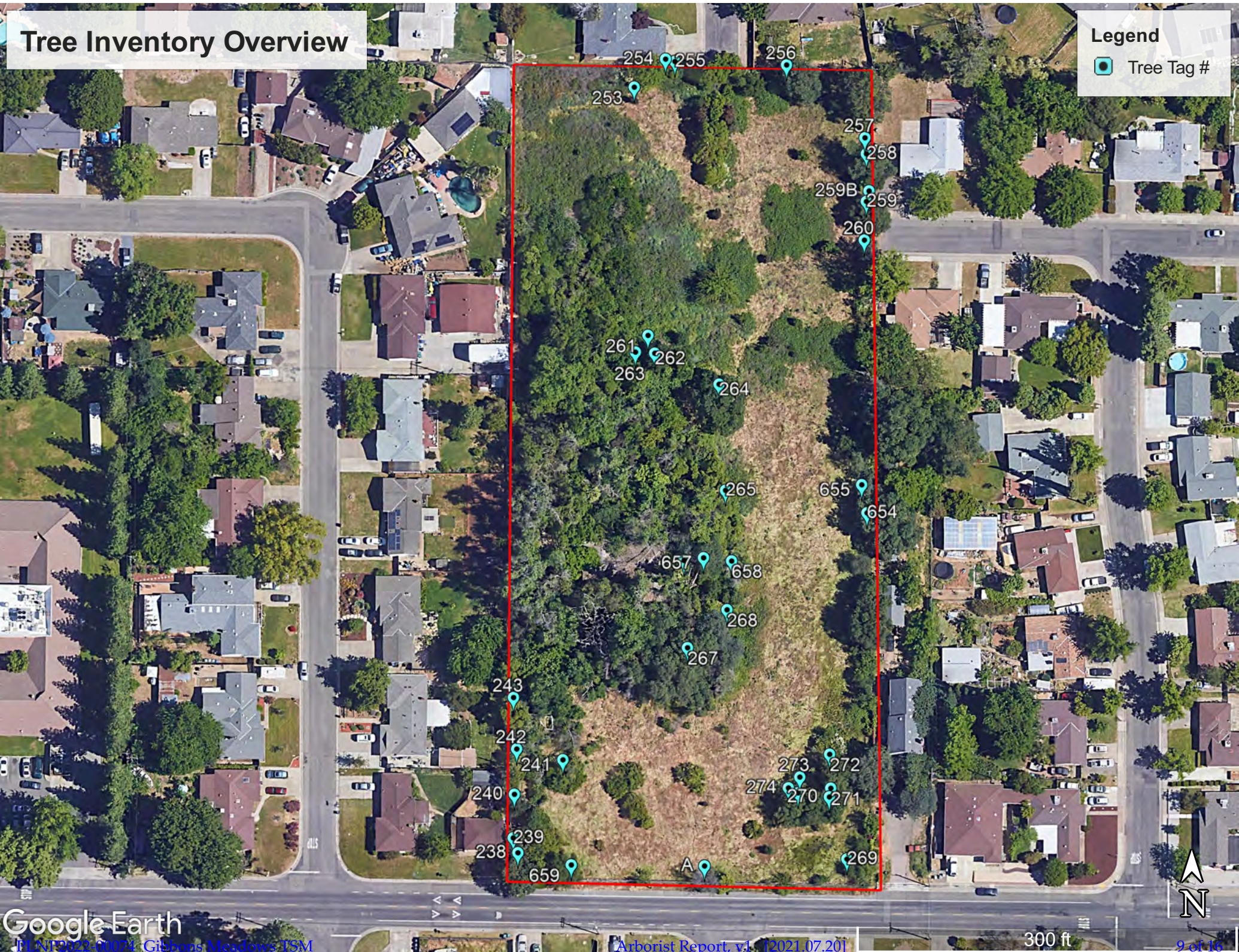
Dr. G. O. Graening is a consulting arborist continuously certified by the International Society of Arboriculture (Certification # WE-6725A) since 2003. Certification may be verified on the Internet at the ISA website (<http://www.isa-arbor.com/certification/verifyCredential/index.aspx>). Dr. Graening also holds a Ph.D. in Biology and a Master of Science degree in Biological and Agricultural Engineering. Dr. Graening has 13 years of experience in environmental assessment and research, including the performance of numerous arborist surveys, appraisals, and design of tree mitigation plans.

TREE INVENTORY DIAGRAMS

Tree Inventory Overview


Legend

Tree Tag #



Detail North


Legend

 Tree Tag #



Detail North

Legend

 Tree Tag #



SITE PHOTOS





Pre-Construction Phase

Fencing and Other Tree Protection Zone Barriers

The limits of all tree protection zones shall be staked in the field; normally this is defined as the drip line of the tree canopy or a minimum circular area defined by a 20-foot radius around the trunk of the tree. Tree protection zone barriers shall be installed prior to site work. Tree protection zones shall be delineated and protected with fencing, consisting of, at the minimum, metal t-post stakes and orange plastic fencing. Where construction materials such as fill dirt may encroach, silt fencing or plywood shoring should be placed as well. Erosion control devices such as silt fencing, debris basins, and water diversion structures should be installed to prevent siltation or erosion within tree protection zones. Construction limit fencing should be erected that restricts access to protected areas and tree protection devices shall be installed where required over tree roots, branches, and/or tree trunks.

Proper Tree Removal and Pruning

Trees to be removed or pruned shall be removed by a qualified tree care professional such that trees to be preserved are not affected. Trees to be removed shall be felled away from tree protection zones. Brush and limbs shall be chipped and placed as mulch in tree protection zones to a depth of 6 inches (but leaving the trunk clear of mulch). Removal or reduction of major structural limbs should be done only as required for actual equipment clearance or safety. In some cases it may be possible to tie back branches to provide temporary clearance without pruning limbs. If limbs must be removed, cuts should be made perpendicular to the branch, to limit the size of the cut face. The branch bark collar should be preserved (i.e., no “flush cuts”), and cuts should be made in such a way as to prevent the tearing of bark from the tree. All tree pruning and tree felling is to be performed in accordance with American National Standards Institute (ANSI) Standards for Tree Care Operations (A300 Series)(ANSI, 2006a) and safety standards in ANSI Z133.1 (ANSI, 2006b).

Trunk Protection

Where construction equipment must enter tree protection zones, tree trunks and scaffold limbs should be protected from mechanical damage. Wrap trunk and all exposed scaffold limbs with plastic fencing to a thickness of 2 inches with orange plastic construction fencing, or protect vulnerable areas by strapping boards (2x4 inch dimension) to the main upright stem(s) of the trees where possible injury could occur. Trunk protection may also be provided by strapping from one to four straw bales around the base of the tree. The bales are placed on end. The Project Arborist should direct the placement of protection devices.

Root Protection

The purpose of root protection is to protect roots from compaction or suffocation. If temporary haul or access roads must pass over the root area of trees (or tree protection zones), a road bed of 6 inches of mulch or gravel should be created to reduce soil compaction. This road bed material should be replenished as necessary to maintain a depth of 6 inches. The preferred method for excavation in tree protection zones is by hand digging or with the use of an “air spade” (a method of removing soil from around tree roots by the use of air pressure to minimize root damage). Exposure of roots to air should be minimized; backfill excavation as soon as possible to rebury roots.

Construction Phase

Proper Root Cutting

Where root cutting is unavoidable, hand cutting is preferred. The bank is cut back an additional 6 inches around the root. Cuts should be made cleanly with a sharp saw or pruning tool. The cut should be made at right angles to the root so that the wound is no larger than necessary. When practical, cut roots back to a branching lateral root. Perform all grading and trenching within tree protection zones by hand or with small equipment to minimize root damage. All root cutting should be performed in accordance with the ANSI A300 Series guidelines (ANSI, 2006a) and safety standards in ANSI Z133.1 (ANSI, 2006b). Exposure of roots to air should be minimized; backfill excavation as soon as possible to rebury roots. If the trench must remain open, the exposed roots and bank should be covered with 4 layers of burlap or other acceptable material and an outer layer of geotextile fabric. The burlap is used to a depth of 3 feet.

Other Construction Best Management Practices

During construction, the Contractor should maintain all fences and tree protection devices and refrain from causing or permitting any activity within tree protection zones including, but not limited to, the storage of equipment, supplies, excavation materials, disposal of fuels, solvents, or chemicals, or causing the disturbance of any soils or vegetation within protected areas. Trees impacted by construction activities should be deeply watered once a week during periods of hot, dry weather. Spray tree crowns with water periodically to reduce dust accumulation on the leaves. Each irrigation should wet the soil within the tree protection zone to a depth of 30 inches. This activity should be coordinated with site watering as a dust palliative required by the Storm Water Pollution Prevention Plan. When installing replacement concrete adjacent to the root zone of a tree, use a plastic vapor barrier behind the concrete to prohibit leaching of lime into the soil. "Natural" or pre-construction grade should be maintained for as great a distance from the trunk of each tree as construction permits. At no time during or after construction should soil be in contact with the trunk of the tree above natural grade. It is important that the tree protection zone not be subjected to flooding incidental to the construction work. Topsoil should be replaced as the final fill within the trenching corridor. Reseeding (including "hydroseeding" for erosion control) should consist only of mixtures of native grasses and wildflowers.


Post-construction Phase

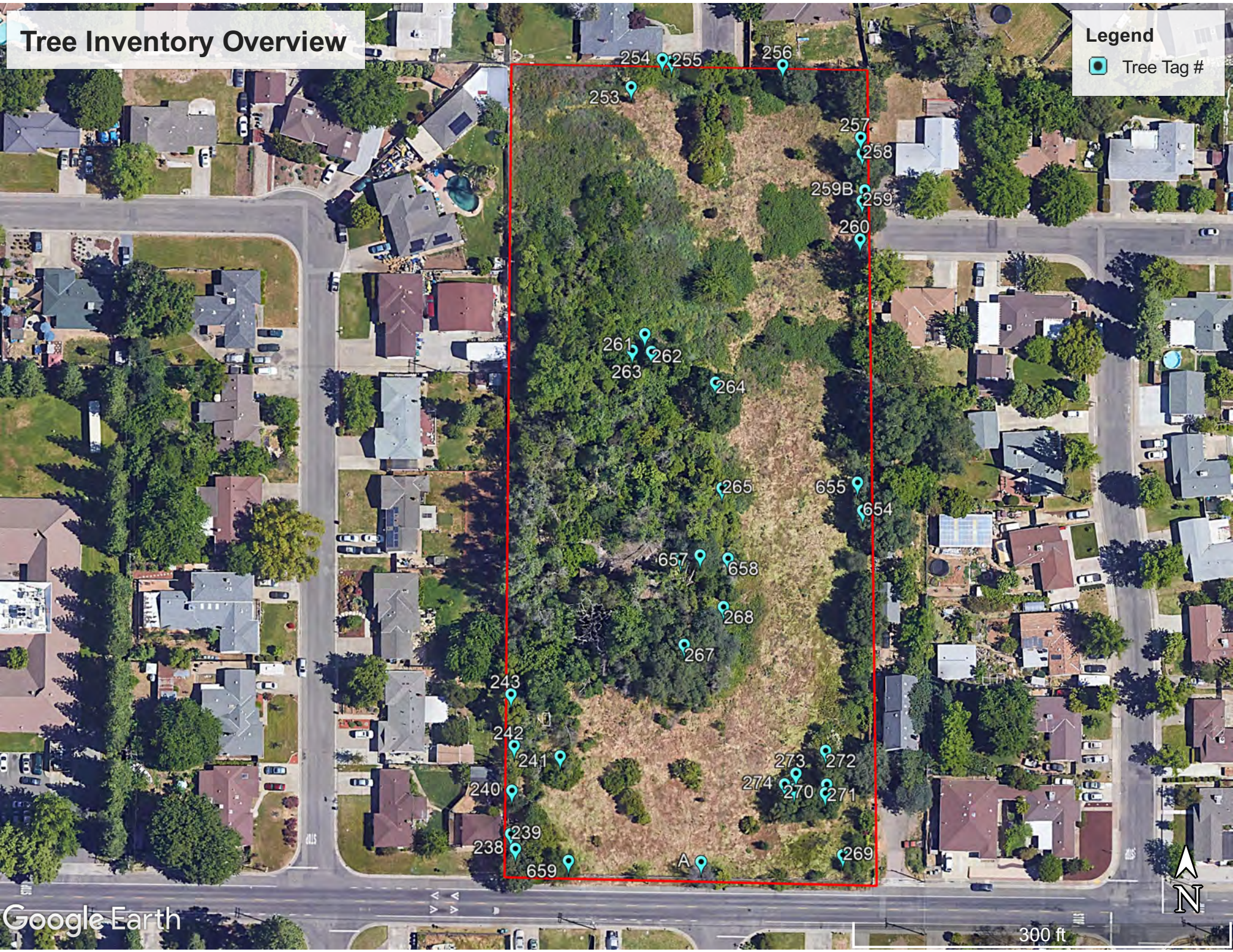
A certified arborist should conduct an inspection of the finished Project areas for delayed impacts to tree health and vigor, and to survey for tree structural stability and hazards. The arborist can prescribe health mitigation treatments based upon the site conditions and level of adverse impact suffered. Possible treatments are listed below:

- supplemental mulching, irrigation, and fertilization should be performed for trees with significant root or crown loss;
- mulching with tree protection zones to rebuild soil structure lost to soil compaction;
- compost and compost tea to supply nutrients and micronutrients;
- a sugar-water solution (30 g of sugar / liter of water) may be used immediately after root cutting, applied at the rate of one liter per square meter of soil surface area;
- soil and leaf tissue analysis to determine nutrient deficiencies before the addition of fertilizer;
- bark wounds should be treated, and broken limbs or roots should be cleanly pruned;
- any fill placed upon the tree root crown should be removed by hand shovel; and
- weakened or diseased trees may need to be removed.

Tree Inventory Overview


Legend

 Tree Tag #



Detail North

Legend


 Tree Tag #



100 ft

Detail North

Legend

 Tree Tag #



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- 269



Quercus wislizeni (Interior Live Oak)

Quercus lobata (Valley Oak)

Quercus douglasii (Blue Oak)

Tree Inventory Table

Tag #	Scientific Name	DBH (inches)	Dripline radius (feet)	Condition (0-5)	Comment / Condition	Heritage Tree	under 6"
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243	<i>Ulmus</i> sp.	6.9	15	2	sapsucker damage, poor health		
253	<i>Quercus wislizeni</i>	5.4	10	4			x
254	<i>Quercus lobata</i>	4.5	10	4			x
255	<i>Quercus wislizeni</i>	10.1	15	4			
256	<i>Quercus lobata</i>	19.5	30	4		yes	
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259b	<i>Quercus wislizeni</i>	10.3	15	4	untagged, but adjacent to Tag #259		
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261	<i>Quercus lobata</i>	5.7	8	4			x
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Tagged by Dr. Graening							
654	<i>Quercus wislizeni</i>	8	20	4			

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659	<i>Quercus wislizeni</i>	13.3	25	4			
Untagged							
A	<i>Quercus wislizeni</i>	18	20	0	dead; untagged		

Quercus wislizeni (Interior Live Oak)

Quercus lobata (Valley Oak)