

April 12, 2017

Dave Morton
Massie & Company
1801 Tribute Road
Sacramento, CA 95815

RE: Arborist Survey for 3264 Taylor Road Project Site, Town of Loomis, Placer County, California

Dear Mr. Morton:

The purpose of this letter is to document the existing trees within the proposed project site, 3264 Taylor Road (project site), evaluate impacts within the canopy of protected trees, and provide recommendations for tree preservation and mitigation based on the engineering plan data provided by Morton & Pitalo, Inc. A separate arborist letter report is being prepared for the offsite sewer improvements corridor related to the project site.

The project site is located at 3264 Taylor Road in the Town of Loomis, California. The proposed project will include construction of a light commercial building, parking lot, and utility improvements.

The planned project area fronts on Taylor Road and is zoned General Commercial along with adjacent properties (Town of Loomis 2003). Single-family homes were observed on adjacent lots to the east and west, and industrial land use was observed on properties to the north. Less than a quarter mile away on the opposite side of the street is Del Oro High School.

REGULATORY THRESHOLD

The Town of Loomis (Town) regulates impacts to native oak trees under the *Loomis Municipal Code, Chapter 13.54 – Tree Conservation* (Tree Conservation Ordinance, revised 2014). This policy applies to tree management in both new development projects and established residential areas. According to the policy, a protected tree is defined as any interior live oak (*Quercus wislizeni*), valley oak (*Quercus lobata*), or oracle oak (*Quercus x morehus*), with a trunk that is a minimum of six inches in diameter at breast height (DBH [diameter of a tree trunk as measured at 54 inches above the ground at the base of a tree]), blue oaks (*Quercus douglasii*) with a four inch DBH or larger trunk, any native oak tree with multiple trunks that have an aggregate DBH of at least ten inches, or any Heritage Tree (any tree identified as “Heritage Tree” status by council resolution). Protected trees also include any trees preserved or replanted pursuant to *Section 13.54.090*, except for exempt trees and those classified as

invasive species by the California Invasive Pest Council (Cal-IPC), such as olive trees (*Olea europaea*), and non-native trees listed as not to be planted on Town-owned property in the Master Tree List.

The Tree Conservation Ordinance requires a Tree Permit for the removal of any protected tree or work within the critical root zone (CRZ), which is defined as the diameter of the longest limb plus one foot. Mitigation is required for removal of protected trees. Mitigation may include planting replacement trees of the same species either on the property or at a location within the Town of Loomis approved by the Town Manager or payment of in-lieu fees for each inch of trunk diameter removed. Mitigation is not required for removal of dead, dying, or hazardous trees or those requiring major corrective care.

METHODOLOGY

International Society of Arboriculture (ISA) Certified Arborist, Paul Weller (WE-7862A) conducted an arborist survey on October 21, 2016. All trees greater than four inches DBH, on or overhanging the project site, were surveyed. Trees accessible to the arborist and onsite were tagged with aluminum tree tags inscribed with a unique tree identification number. A tree identification number was established for each tree and matches the number of the tree tag. Trees on adjacent properties were assigned a tree identification number, but were not physically tagged.

Data recorded during the survey included the following: location, tree ID number, species, number of trunks, DBH of each trunk, canopy of dripline diameter, height, health, vigor, and structure rating, and remarks.

For trees on slopes, DBH was measured from the ground surface on the high side of the tree using a steel diameter tape.

Canopy dripline diameters were visually estimated. The measurement from the trunk to the end of the longest lateral limb was measured and doubled to determine the diameter of the canopy.

Tree height values were visually estimated.

Tree health, vigor, and structure were rated as Good, Fair, or Poor. **Table 1** provides a general definition of these ratings. Where conditions were between ratings of Good and Fair or Fair and Poor, intermediate ratings of Fair-Good and Fair-Poor were given. This five-point scale correlates to the tree condition ratings outlined in the Tree Conservation Ordinance.

Table 1 — Tree Rating Guidelines

Rating	Tree Health
Good	The tree exhibits characteristics of superior health for the species. The canopy of the tree is even, alive to the tips of branches, and foliage is distributed evenly across the extents of branches and canopy. The root crown, trunk, limbs, and branches are free of decay, defects, cracks, and not oozing sap. Bark is evenly and completely covering the trunk. Wounds have closed or are closing. Sprout growth, insects, and stress are not observed. Foliage or buds are of a density and hue exemplary of the species with no spotting, deformities, or nutrient deficiency observed in the foliage.
Fair	The tree exhibits characteristics of average health for the species. The canopy of the tree is even to uneven, alive to the tips of most branches, and foliage is distributed evenly to unevenly across the extents of branches and canopy. The root crown, trunk, limbs, and branches are nearly free of decay, defects, cracks, and not oozing sap. Bark is evenly and completely covering the trunk with very little (less than 10%) missing. Wounds are closing. Little sprout growth, insects, and stress observed. Foliage or buds are of a density and hue typical of the species with minor to no spotting, deformities, or nutrient deficiency observed. If disease or malady is observed it is more of a temporary nature or cosmetic condition and has not greatly contributed to a decline in the vigor or structure of the tree.
Poor	The tree exhibits characteristics of inferior health for the species. The canopy of the tree is uneven, with both dead and alive branch tips, and foliage is distributed unevenly or patchy. The trunk, limbs, and branches exhibit signs of decay, defects, cracks, and/or are oozing sap. Bark is unevenly and/or not completely covering the trunk. Wounds are not closing. Sprout growth, insects, fungus, and/or stress are observed. Foliage or buds are not dense or discolored, or may exhibit spotting, deformities, or nutrient deficiency. The tree exhibits a disease or malady that cannot be reversed or has led to deterioration of vigor or structure of the tree.
	Tree Vigor
Good	The tree exhibits characteristics of superior vigor for the species and age of the tree. Length of internodes and prior year's growth is above average for the species (excluding water sprouts or sprout growth). Growth is aggressive to steady. Wounds to trunk or limbs have closed or are quickly closing. Bud, leaf, or flower production is abundant and dense.
Fair	The tree exhibits characteristics of average vigor for the species and age of the tree. Length of internodes and prior year's growth is typical for the species (excluding water sprouts or sprout growth). Growth is steady and unremarkable. Wounds to trunk or limbs are closing or slowly closing. Bud, leaf, or flower production is typical for the species or otherwise unremarkable.
Poor	The tree exhibits characteristics of inferior vigor for the species and age of the tree. Length of internodes and prior year's growth is below average for the species (excluding water sprouts or sprout growth). Growth is slow to nonexistent. Wounds to trunk or limbs are not closing. Bud, leaf, or flower production is below average for the species.
	Tree Structure and Form
Good	The tree exhibits characteristics for low potential of structural failure and is a superior tree in terms of structure. The tree has space to achieve the ultimate form of the species. The tree has a central leader and has a form typical of the species. The trunk is free of defects or wounds, is growing vertically, and bark is not included. Limbs and branches are connected to the trunk at well-formed attachments and are not over-burdened. Branches and limbs are live, complete, intact, and do not exhibit signs of decay, cavities, or irregularities. The tree has no observed history of pruning to limbs or roots. The tree is located on stable ground and roots are not exposed above the ground surface. The tree canopy is complete and balanced.

Fair	The tree exhibits characteristics for moderate potential of structural failure and is an average tree in terms of structure. The tree has most of the space necessary to achieve the ultimate form of the species. The tree has a central leader or with selective pruning could achieve one and generally has the form typical of the species. The trunk could have minor defects, wounds present are small and closing, is growing vertically, and bark is not included on main stems. Limbs and branches are connected to the trunk at well-formed attachments and few to none may be mildly overburdened. Branches and limbs are live, complete, intact, and do not exhibit signs of decay, cavities, or irregularities. Only minor branches are broken and dieback present is minimal. Past areas of pruning to limbs or roots are healing and do not show decay. Active advancing decay is not observed. The tree is located on relatively stable ground without active erosion or sloughing. Few roots are exposed above the ground surface. The tree canopy is nearly complete and mostly balanced.
Poor	The tree exhibits characteristics for high potential of structural failure and is an inferior tree in terms of structure. The tree lacks space necessary to achieve ultimate form of the species. The tree lacks a central leader, is codominant, and/or lacks the form typical of the species. The trunk could have defects, wounds present are small to large and/or not closing, is arched or leaning, and bark is included on main stems. Limbs and branches are connected to the trunk at poorly-formed attachments, some are overburdened with the majority of the weight concentrated on the outer 1/3, and/or the tree is observed with multiple limb attachment. Branches and limbs are partly live, incomplete or broken, and exhibit signs of decay, cavities, or irregularities. Fungus or conks observed in major structural members. Dieback present is greater than 1/3 of tree volume. Historic pruning cuts are not healing and show signs of decay. Advancing decay and/or insect activity is observed. The tree is located on unstable ground or with active erosion or sloughing. Roots are exposed above the ground surface and/or are heaving adjacent infrastructure. The tree canopy is incomplete and unbalanced, and/or weight is unequally distributed.

SURVEY RESULTS

A total of 30 trees were surveyed on the project site, of these 22 are protected by the Town Tree Conservation Ordinance. The location of each tree is shown in **Figure 1**. Data particular to each tree is presented in **Attachment A**. Photographs of the protected trees are presented in **Attachment B**.

Tree Inventory

Trees native to Placer County, past agricultural trees, and invasive trees (as listed by California Invasive Plant Council [IPC]) or locally weedy trees are present in the survey area. Trees present and native to Placer County include: three blue oaks, nine valley oaks, and 15 interior live oaks. An old agricultural tree, an olive (*Olea europea*) was present which is also listed as invasive (California Invasive Plant Council 2006). Locally weedy trees present included a pecan (*Carya illinoensis*).

Tree Condition

Some trees surveyed were observed to suffer from drought stress, crowding, and past poor tree care (topping) practices. From December 2011 through March 2017 California experienced a prolonged period of drought (greater than five years) which could be contributing to stress on the trees. Some trees were observed growing under the canopy of adjacent trees and were not able to establish leaders or achieve a form indicative of the species. Several trees were observed to have been cut in the past three to seven years at locations along the trunk within

two to six feet of the ground (topping cuts). The remaining portions of the trunk have resprouted with many smaller branches emanating from the live wood. These new branches could be weakly attached and the large wounds created from the initial cuts have been unable to heal over and are a vector for decay and disease. Only one of these trees (#25) was topped above the 54-inch height threshold for DBH measurements, so this tree is the only topped tree included in the survey data.

One of the trees surveyed was dead, and was documented to record this status at the time of survey. Of all live trees (29), health was rated good for 14 percent, as Fair-Good and Fair for 62 percent, with the remaining (24%) rated as Fair-Poor and Poor. Vigor was rated as Good for 17 percent, Fair-Good and Fair for 55 percent, with the remaining (28%) rated as Fair-Poor and Poor. Structure of the trees surveyed was rated as 7 percent Good, 52 percent Fair-Good and Fair, and 41 percent as Fair-Poor and Poor.

With changes in the environment, proper care, and allocation of resources, trees with a Fair or Fair-Poor health or vigor rating could improve over time. Changes in the environment could be either naturally occurring or human influenced.

Trees with Fair-Poor or Poor structure rating typically decline over time. Measures to reduce risk should be explored for trees with these ratings. If the tree is growing in an area with targets where public safety is compromised, removal of the trees should be explored. Targets are people or areas with regular human use such as walkways, parking areas, roofs, and other active use areas that could be subject to damage by a falling tree or limb. Most of the arborist survey area contains targets.

Tree Impacts

The tree impact analysis assumes planned driveway and building pad areas will be used for construction staging, ingress, and egress so as to reduce the potential impacts from construction activities and equipment on soil structure, tree roots, branches, and trunks. This impact analysis assumes Best Management Practices (BMPs) will be in place prior to commencement of construction and throughout the active construction period.

Based on the draft Grading Plan dated March 2017 prepared by Morton & Pitalo, Inc., nine trees would be removed by project implementation and 20 others would be temporarily affected. Of the nine trees that would be removed, five are protected and would require mitigation under the Tree Conservation Ordinance. The total DBH of the five trees requiring mitigation is 85 inches. Of the 20 trees that would be temporarily affected, 17 are regulated.

MITIGATION RECOMMENDATIONS AND REQUIREMENTS

Recommendations to Reduce Impacts

Minor modifications to the grading plan or alternative approaches to infrastructure implementation could help preserve some trees, avoid impacts, and reduce mitigation requirements. A candidate for preservation includes tree #23. This tree is regulated. Shifting the rock-lined ditch and grading footprints around the canopy of this tree to reduce the disturbed

area within the canopy to less than 20 percent of the canopy area would avoid impacts on this tree.

The 20 trees planned for preservation may be impacted by development of the project within their critical root zone (CRZ). These trees may be affected by the planned project due to grading, trenching, compaction of the ground under their canopy, and pruning of their branches to allow construction equipment to access the site. Effects on these trees can be minimized by avoiding disturbance within the CRZ, including eliminating grading and installing utilities using boring or lateral drill techniques rather than traditional open trenches, and implementing other tree preservation recommendations provided in this report. If grading and other ground disturbance in the CRZ cannot be avoided, these trees may decline following construction of the project, depending on the loss of canopy or extent of the disturbance to their root system. Special attention should be paid to avoiding impacts to tree #24, which is a large oak on a neighboring property. A retaining wall and use of permeable paving should be used to ensure disturbance to the CRZ are limited to 20 percent of the canopy area or less.

Mitigation Requirements

Mitigation for impacts to protected oak trees is required in accordance with the *Loomis Municipal Code, Chapter 13.54.090*. Mitigation may take the form of on- or off-site planting or payment of in-lieu fees. Mitigation planting must be of the same species removed. The in-lieu fee and number of mitigation trees required depends on the size of the tree removed and the size of the tree being planted, as shown in Table 5-3 of the Tree Conservation Ordinance. Smaller trees (T4, T6, or T8 tree pots) may be used in place of #5/ 5-gallon plantings with the approval of the Town Manager, but no more than 50 percent of the planted trees may be less than #5/ 5-gallon size. A combination of planting and in-lieu fees may be used to fulfill the mitigation requirements. Mitigation trees must be monitored by an ISA-Certified Arborist for five years after planting. The permittee is responsible for replacing any mitigation trees that die within the initial five-year monitoring period.

Table 2 summarizes the potential tree impacts and mitigation options. If new grading plans are developed, a final evaluation of expected tree impacts should be completed.

Table 2 — Tree Impact and Mitigation Summary

Tree ID	Ordinance Protected?	Common Name	Cum. DBH (Inches)	Impact	Potential Mitigation Required		
					5 Gallon	15 Gallon	In-lieu Fee
1	Yes	valley oak	14	Removal	56	28	\$1,400
2	Yes	valley oak	21	Removal	84	42	\$2,100
3	Yes	valley oak	9	Removal	27	9	\$810
23	Yes	valley oak	17	Removal	68	34	\$1,700
25	Yes	interior live oak	24	Removal	96	48	\$2,160
Totals:					331	161	\$8,170

The exact amount of mitigation required will depend on the final design of the project. If the design can be changed so impacts to all protected trees are avoided or minimized, then no mitigation will be required. If the project is implemented as currently designed and the trees identified for removal are removed or significantly impacted (changes to more than 20% of the CRZ), then the total mitigation required will be planting of 331 5-gallon trees, planting of 161 15-gallon trees, or payment of lieu fees totaling \$8,170.

While some mitigation tree planting may be completed onsite, there is not sufficient space to accommodate all required mitigation trees. Therefore, it is anticipated that the majority of the required mitigation will be through payment of in-lieu fees.

If tree planting is chosen as the project mitigation strategy, a mitigation and monitoring plan should be prepared. The plan should include maintenance, watering, and monitoring schedules, success criteria, and reporting requirements. Typically, the trees will be regularly irrigated during the first two years until established and then weaned off irrigation over the course of the next two to three years. No permanent irrigation or landscaping should be placed within the dripline of any replacement tree or existing protected oak tree. Newly planted trees should be protected with browse protection cages and gopher cages and surrounded by a layer of bark mulch to reduce weed growth.

TREE PROTECTION RECOMMENDATIONS

In addition to the construction measures previously discussed, the following recommendations should be integrated into the project plans to minimize impacts to protected trees:

- Prior to any grading, movement of heavy equipment, or other construction activities, Tree Protection Fencing, shall be installed consisting of a minimum 4-foot tall high-visibility fence (orange plastic snow fence or similar), shall be placed around the perimeter of the tree protection zone (dripline radius +1 foot) for all trees to be preserved. The CRZ is the minimum distance for placing protective fencing, but tree protection fencing should be placed as far outside of the CRZ as possible. Fencing shall be removed following construction, but prior to installation of landscaping material;
- Whenever possible, fence multiple trees together in a single CRZ;
- Signs shall be posted on all sides of the fences surrounding each tree, stating that each tree is to be preserved;
- No parking, portable toilets, dumping or storage of any construction materials, including oil, gas, or other chemicals, or other infringement by workers or domesticated animals is allowed in the CRZ;
- Do not place or store any equipment or construction materials or allow flow of any oil, fuel, concrete mix or other deleterious substance into or over within the critical root zone (CRZ) of any protected tree;

- All trees located within 25 feet of structures shall be protected from stucco and/or paint during construction;
- Grading shall be designed to avoid ponding and ensure proper drainage within driplines of all trees;
- Minimize disturbance to the native ground surface (grass, leaf, litter, or mulch) under preserved trees to the greatest extent feasible. All brush, earth, and debris shall be removed in a manner that prevents injury to the tree;
- Avoid trenching, grading, paving, or otherwise damaging or disturbing any exposed roots within the critical root zone (CRZ) of a protected tree;
- If underground utilities and/or irrigation trenching encroach within the CRZ, they shall be bored or drilled under the root system of a protected tree. If this is impossible, trenching shall be completed by hand tools, air spades, or other acceptable measures under the supervision of an ISA-Certified Arborist. Boring machinery, boring pits, and spoils shall be set outside of the CRZ fencing;
- All work shall conform to the most current American National Standards Institute (ANSI) tree care standards;
- Do not severe major roots (1-inch or greater) unless permitted by an ISA-Certified Arborist. Cut all roots, regardless of size, cleanly at the edge of ground disturbance with pruning instruments and keep moist until covered with soil;
- Pruning of living limbs or roots shall be done under the supervision of an ISA-Certified Arborist. All pruning should be done by hand, air knife, or water jet, in accordance with ISA standards using tree maintenance best practices. Climbing spikes should not be used on living trees. Limbs should be removed with clean cuts just outside the crown collar;
- Native woody plant material (trees and shrubs to be removed) may be chipped or mulched on the Project Site and placed in a 4 to 6-inch deep layer around existing trees to remain. Do not place mulch in contact with the trunk of preserved trees;
- Any and all exposed roots shall be covered with protective material (e.g. damp burlap) during construction to prevent drying out;
- No supplementary irrigation shall occur within six feet of the dripline of any protected native oak;
- No signs, ropes, cables, or any other item shall be attached to a protected tree; and
- No burning or use of equipment with an open flame may occur near or within the protected perimeter. Appropriate fire prevention techniques shall be employed around all trees to be

preserved. This includes cutting tall grass, removing flammable debris within the TPZ, and prohibiting the use of tools that may cause sparks, such as metal blade trimmers or mowers.

Please do not hesitate to call me at (916) 435-1202 or e-mail me at pweller@foothill.com if you have any questions about this report.

Sincerely,



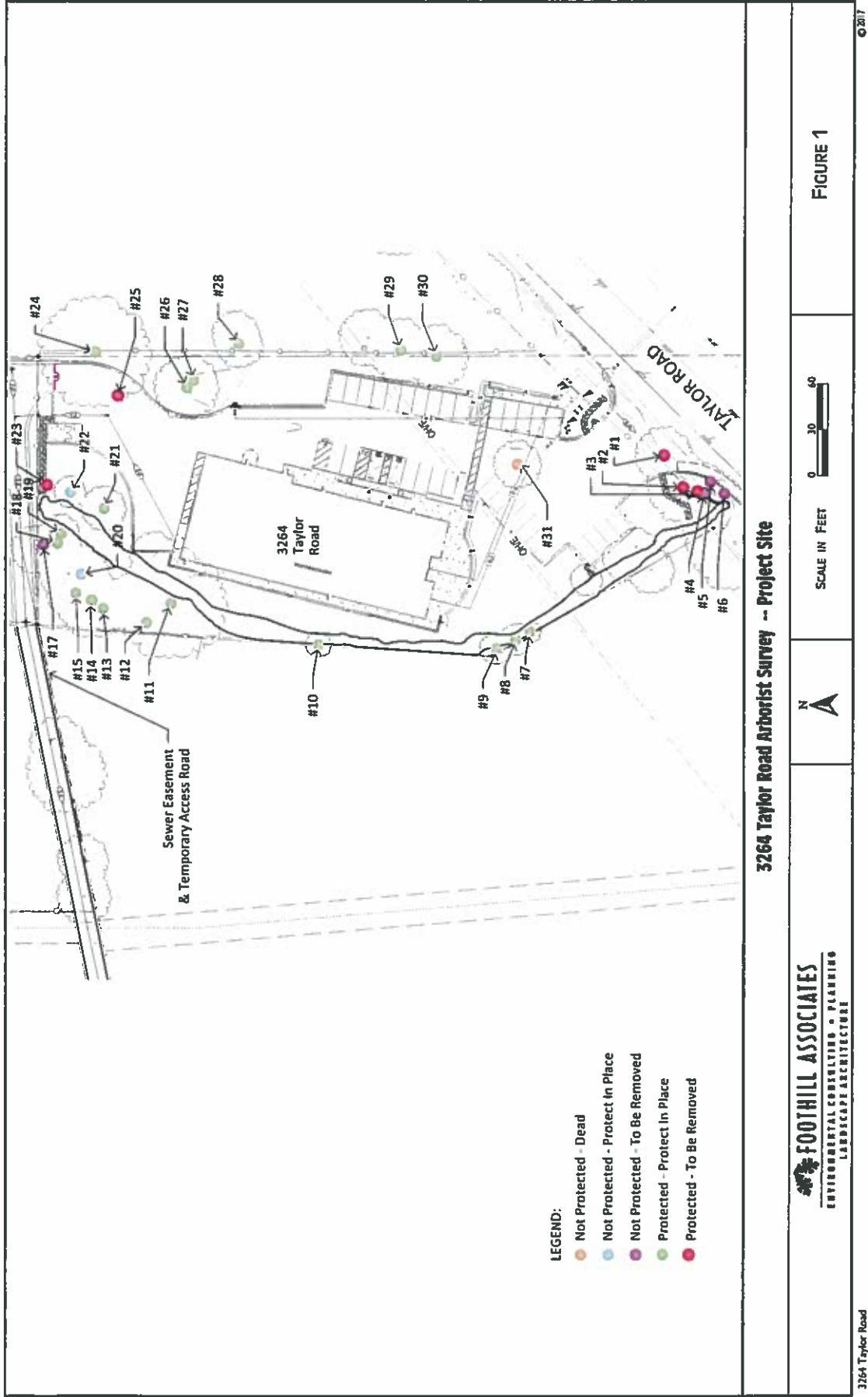
Paul Weller
ISA-Certified Arborist #WE-7862A

Enclosures (3)

REFERENCES

California Invasive Plant Council. 2006. *California Invasive Plant Inventory*. February. Available: <http://www.cal-ipc.org/ip/inventory/pdf/Inventory2006.pdf>. Accessed October 24, 2016.

Town of Loomis. 2003. *Zoning Map*. January. Available: http://loomis.ca.gov/wp-content/uploads/2015/10/Loomis-Zoning-Map_2003.pdf. Accessed October 24, 2016.



Attachment A

Tree Data

Tree ID	Ordinance Protected?	Scientific Name	Common Name	Cum. DBH	DBH1	DBH2	DBH3	DBH4	DBH5	DBH6	Drip DIA	Height	Health	Vigor	Structure	Comments	Impacts	Mitigation Required?
1	Yes	<i>Quercus lobata</i>	valley oak	14	14						30	34	Fair	Fair-Good	Fair-Poor	On bank slope of ditch, asymmetrical crown, codominant, leans towards road at 20°	Removal	Yes
2	Yes	<i>Quercus lobata</i>	valley oak	21	21						44	40	Fair	Fair-Poor	Fair	On steep bank, codominant, slight arch to east, sparse foliage	Removal	Yes
3	Yes	<i>Quercus lobata</i>	valley oak	9	9						40	18	Fair	Fair	Fair-Poor	Codominant, crowded, shaded, asymmetrical crown, bottom of ditch	Removal	Yes
4	No	<i>Quercus wislizeni</i>	interior live oak	5	5						28	12	Poor	Poor	Fair-Poor	Crowded, shaded, asymmetrical crown, sparse foliage, contorted trunk, bottom of ditch	Removal	No
5	No	<i>Quercus wislizeni</i>	interior live oak	5	5						34	20	Fair-Poor	Poor	Poor	Leans to west at 45°, crowded, shaded, asymmetrical crown, growing out of road bank	Removal	No
6	No	<i>Quercus wislizeni</i>	interior live oak	5	5						20	15	Poor	Poor	Fair-Poor	Arches towards road, crowded, shaded, asymmetrical crown, growing out of road bank	Removal	No
7	Yes	<i>Quercus lobata</i>	valley oak	6	6						14	14	Poor	Poor	Fair-Poor	Mostly defoliated, 2 feet from fence, appears nearly dead or drought stressed	Temporary	No
8	Yes	<i>Quercus lobata</i>	valley oak	26	10	9	7				18	26	Poor	Poor	Fair-Poor	Multiple limb attachment, mostly defoliated, 2 feet from fence, appears nearly dead or drought stressed, seams in trunks, included bark	Temporary	No
9	Yes	<i>Quercus lobata</i>	valley oak	19	11	8					24	30	Poor	Poor	Fair-Poor	Mostly defoliated, 2 feet from fence, appears nearly dead or drought stressed, codominant, included bark	Temporary	No
10	Yes	<i>Quercus wislizeni</i>	interior live oak	6	6						18	18	Fair	Fair-Good	Fair	Leaf spotting (herbicide or drought stress?), 1 foot from fence	Temporary	No
11	Yes	<i>Quercus wislizeni</i>	interior live oak	35	35						56	45	Fair-Good	Fair-Good	Fair	Trunk has slight bend that corrects, some historic pruning cuts, boulder	Temporary	No

[illegible]

27	Yes	<i>Quercus douglasii</i>	blue oak	15	15						26	44	Fair	Fair	Arched trunk, asymmetrical crown	Temporary	No
28	Yes	<i>Quercus wislizeni</i>	interior live oak	10	4	3	3				16	15	Fair-Good	Fair	Did not tag. 2 feet north of fence, on private property, half of canopy overhangs property	Temporary	No
29	Yes	<i>Quercus lobata</i>	valley oak	14	14						40	35	Fair-Good	Fair	Did not tag. 2 feet north of fence, on private property, half of canopy overhangs property	Temporary	No
30	No	<i>Olea europaea</i>	olive	22	8	6	5	3			28	18	Good	Fair-Good	Neighbor says this tree is on his property, 2 feet south of existing fence	Temporary	No
31	No	<i>Quercus wislizeni</i>	interior live oak	0	Dead								Dead	Dead	Dead, 21 inch DBH	None	No

Attachment B

Tree Resource Photos



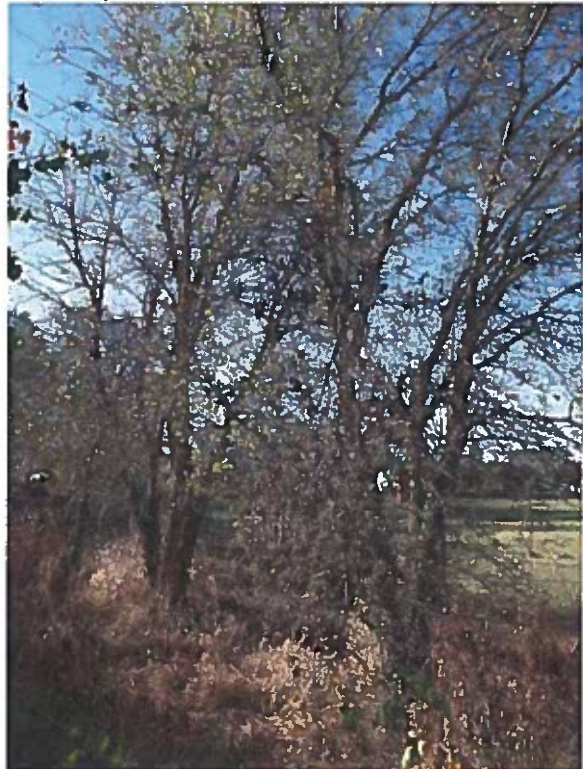
#1 (left) and #2 (right) valley oaks



#3 valley oak



#7 valley oak



#8 (left) and #9 (right) valley oaks



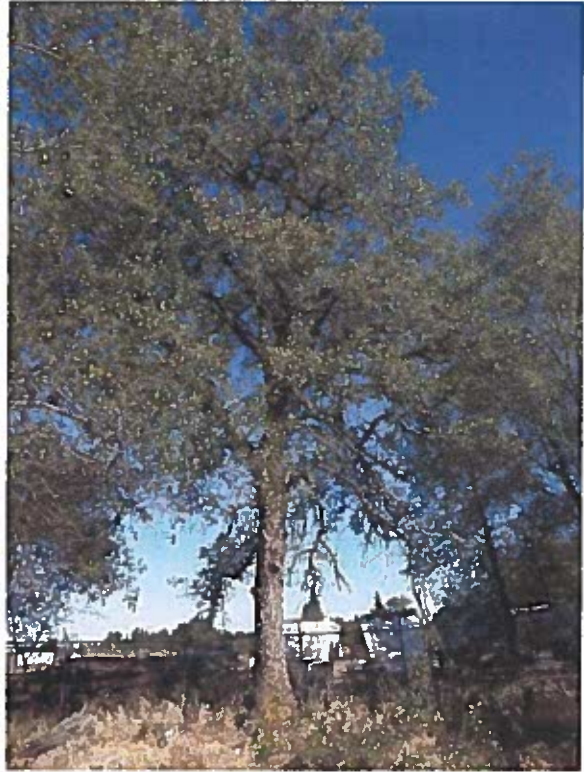
#10 interior live oak



#11 interior live oak



#12 interior live oak



#15 blue oak



#13 (foreground) and #14 (middleground) interior live oaks, #15 (right) blue oak



#18 (middle left) and #19 (middle right) interior live oaks



#21 valley oak



#23 valley oak



#24 interior live oak



#25 interior live oak



#27 (left) and #26 (right) blue oaks



#28 interior live oak



#29 valley oak



#30 olive