

**Assessment of Five (5) Regulated-Size Trees #51 Through #55
At and Adjacent to
16336 Shady View Lane
Los Gatos, California**

Prepared for:
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Field Visit:
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1/29/2019

Report by (CTA)
1/31/2019

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1.0 Summary

- a. Below is a matrix style overview of the tree situation at the site, summarizing tree disposition and the suggested maintenance and protection items that should be performed or installed to optimize survival of both on-site trees and neighbor-owned trees that the CTA expects to be retained during and after proposed construction.

Appraised values of the trees, which can be used as a tool for determining the proper security bond amount to have the applicant post with the Town as a hedge against site plan-related tree damages (if applicable), are noted in detail in the attached appraisal worksheet at the end of this report.

Note: Only trees on this property, and neighbor-owned trees within roughly 10 horizontal feet of the existing property line fences, are included in this initial tree study.

Note also that this initial study is based on a rough site plan sheet that does not include grading daylights, drainage pipe trenching routes, utility trenching routes, irrigation and landscape activity proposed, etc. Therefore, additional analysis of negative impacts to trees from proposed new work will likely need to be performed by WLCA and written up as part of a revision of this initial arborist report, prior to start of the proposed new site work.

Table 1.0(a) (REFER TO THE WLCATREE MAP MARKUP WHEN REVIEWING THIS MATRIX)

Tree Tag Number	Common Name	Special Protection as a Los Gatos "Large Protected Tree" (LPT)?	Conflicts with Current Proposed Plans & Suggested Plan Adjustments to Reduce Those Conflicts	Appraised Value Per Separate Worksheet by the CTA	Replacement Rate Per Canopy Lost	Replacement Size Tree
51	Italian cypress	No	(To be removed)	\$8,900.	2 (\$500.)	24" box
52	Italian cypress	No	(To be removed)	\$8,900.	2 (\$500.)	24" box
53	California valley oak	Yes	<p>a. Proposed joint trench will cut through root system within the Critical Root Zone (CRZ) area. Suggest relocate trench to at least 20 or 25 feet offset from trunk.</p> <p>b. Proposed storm drain trench and drain box will cut through south side of root system within the Critical Root Zone (CRZ) area. Suggest eliminate trenching in this area, and go with a shallow hand-graded earth swale to convey stormwater overland to a point near the street where a drain</p>	\$28,500.	6 (\$1,500.)	24" box

Tree Tag Number	Common Name	Special Protection as a Los Gatos "Large Protected Tree" (LPT)?	Conflicts with Current Proposed Plans & Suggested Plan Adjustments to Reduce Those Conflicts	Appraised Value Per Separate Worksheet by the CTA	Replacement Rate Per Canopy Lost	Replacement Size Tree
			<p>can be installed as necessary to comply with any public works stormwater requirements.</p> <p>c. Proposed storm drain trench west of trunk cuts through the Critical Root Zone (CRZ) area that is beneath the existing older driveway. Suggest relocate or eliminate this trench, since the storm drain box inlet will be eliminated from the area south of the trunk of oak #53 anyway.</p> <p>d. Proposed new driveway excavation if built as per normal construction standards will destroy the west side of the oak #53 root system within the Critical Root Zone (CRZ) area. Suggest eliminate subbase overexcavation and eliminate subbase recompaction through use of a Tensar TriAx triaxial geogrid underlayment pinned down over the older baserock or the older soil surface, which will allow the new driveway to be built up over the soil without any excavation below existing soil grade elevations whatsoever (see digital images of Walter Levison's Stanford University parking lot project from summer 2018 below in this report for a real-world example of this type of installation).</p> <p>e. Proposed new garage foundation work, if built using a standard slab on grade and a perimeter grade beam, which is typically cut down to 18 inches or more below soil surface grade, will destroy the oak #53 root system at roughly 10 to 12 feet south of trunk edge. The CTA suggests requiring a condition of project approval that states that the specification for the new garage perimeter grade beam be floated over existing soil surface elevations, with a maximum of 4 inches of total cut below grade for the bottom edge of the beam.</p>			

Tree Tag Number	Common Name	Special Protection as a Los Gatos "Large Protected Tree" (LPT)?	Conflicts with Current Proposed Plans & Suggested Plan Adjustments to Reduce Those Conflicts	Appraised Value Per Separate Worksheet by the CTA	Replacement Rate Per Canopy Lost	Replacement Size Tree
54	Coast redwood (Neighbor tree)	Yes	<p>This is by far the most valuable tree noted in this tree study, though it is located off-site on a neighbor property, with two mainstems located just east of the southeast corner of the 16336 Shady View Lane property (see the CTA's tree map attached to the end of this report).</p> <p>a. The swimming pool that is assumedly proposed as a separate "future" permit application, and an associated "pool house" which appears to be an accessory dwelling unit (ADU), are shown on the applicant's plans in the south portion of the site. Even if the pool is to be a separate future entitlement application, the excavation of this area of the site may cause severe damage to the root system of redwood #54, which is assumed to be growing laterally westward beneath the existing older southmost residence foundation footing at 16336 Shady View Lane proposed to be demolished. Many of these older foundations were built in a substandard manner, and allow for tree roots to grow beneath the footing.¹</p> <p>The CTA suggests that Staff require a condition of approval that the proposed pool be eliminated or relocated to an area outside of the Critical Root Zone (CRZ) which spans roughly 23 to 25 feet west radius from the trunks of redwood #55. If the pool is not eliminated from this area, the tree may decline or die as a result of root loss (assuming that the tree's root system consisting of very small, small, and larger diameter fibrous and woody roots does continue throughout the area underneath the existing southmost residence foundation</p>	\$62,600.	6 (\$1,500.)	24" box

¹ I am currently dealing with a very similar situation at a Walter Levison project in Berkeley, where very large diameter coast redwood roots are growing horizontally through the entire basement area of a 100 year old residence. The roots plunged underneath the perimeter beam footing, and then grew upward in the soil profile, continuing horizontal growth for roughly 30 or 40 feet of extension distance beyond the foundation footing, essentially coursing through the entire footprint of the residence. This is the 6th or 7th instance that I have documented this occurrence with older residence footings and coast redwood specimens during my 20 years as a professional consulting arborist in the Bay Area.

Tree Tag Number	Common Name	Special Protection as a Los Gatos "Large Protected Tree" (LPT)?	Conflicts with Current Proposed Plans & Suggested Plan Adjustments to Reduce Those Conflicts	Appraised Value Per Separate Worksheet by the CTA	Replacement Rate Per Canopy Lost	Replacement Size Tree
			<p>footprint at 16336 Shady View Lane). One option for the applicant would be to relocate the pool westward such that it would lay in a position outside of (i.e. west of) the CTA's indicated magenta highlighted Critical Root Zone (CRZ) area. This would bring the pool closer to the proposed residence footprint, abutted up to the southeast corner of the new residence. The associated "pool house" (second dwelling unit?) would then assumedly have to be reduced in square footage or pushed westward from its current proposed position to allow the pool footprint to itself be pushed westward to outside of the redwood tree CRZ.</p> <p>Note that the CTA has included a red dashed line on the tree map attached to this report, which indicates a "post-demolition fencing route" where chain link fencing will need to be installed immediately after demolition of the existing residence, in order to preserve and protect the root system of redwood #55 assumed to be present underneath the older foundation.</p>			
55	Purple smoke tree (Town right of way tree)	No	<p>No apparent conflicts. Protect with chain link fencing (RPZ) as shown on the CTA's tree map markup attached to this report, and periodically irrigate the tree with garden hose water 1x/week.</p> <p>Note that this tree was not shown on the applicant's plans. If the applicant wishes to propose removal of this Town-owned tree, then Staff will need to approve the removal, and mitigate accordingly per the boxes at the right in this column.</p>	\$3,680.	3 (\$750.)	24" box

2018-19 Town of Los Gatos In-lieu fee equivalent = \$250 per each required 24" box mitigation tree planting not installed on the site.

1.0(b) Bulleted summary of tree disposition and tree issues, based on the initial grading and drainage plan sheet C-2 dated 12/2/2018 by NNR Engineering of San Jose, California:

1. TREE IMPACTS AND SUGGESTED AMENDMENTS TO THE PROPOSED PLANS AS DESCRIBED ABOVE IN TABLE 1.0(A):

A. Oak #53:

- 1.1. Proposed joint trench within critical root zone (CRZ). Need to relocate to 20 or 25 feet offset from trunk.
- 1.2. Proposed storm drain and associated drain inlet/box south of trunk within critical root zone (CRZ). Need to relocate or eliminate, and use shallow hand graded swale to convey water toward street.
- 1.3. Proposed storm drain west of trunk within critical root zone (CRZ). It appears that this drain may also convey roof downspout drainage water, though this would have to be verified by the applicant. Need to relocate this entire trench to at least 20 or 25 feet offset radius from the trunk of oak #53.
- 1.4. Proposed new driveway is within the critical root zone (CRZ). Suggest use alternative methods and materials, such as installation of a Tensar TriAx triaxial geogrid pinned down over the soil surface or old baserock surface as an underlayment to allow the new baserock and new concrete to be placed over grade as a floating system, thereby avoiding excavation. Geogrids allow for elimination of any subbase excavation or subbase recompaction. They also allow for up to a 50% thinning of the new base section thickness per Tensar Corp's technical documents online.
- 1.5. Proposed new garage will be built slightly within the critical root zone, and will destroy half of the existing southward root system (Current existing residence is over 20 feet south of trunk. Proposed new garage will be 10 or 11 feet south of trunk). Suggest use an alternative specification for the garage foundation work, such as "slab floating over grade with maximum 4 inches of total cut below existing grade elevation, and total max. cut of 4 inches below existing grade elevation for any proposed perimeter grade beam (if a grade beam required)".
- 1.6. Proposed work may require pruning to achieve 14 feet of airspace clearance over the new driveway. If airspace clearance pruning is required, then retain an ISA Certified Arborist to perform removal of one (1) 7 inch diameter limb at the point of attachment on the main stem at 15 feet above grade, to remove the entire limb which currently extends westward over the driveway and hangs down to just a few feet above grade (see photos in below in this report).

B. Redwood #54:

- 1.1. Proposed demolition of the existing southmost residence may cause damage to existing fine fibrous roots and larger diameter woody roots extending westward from neighbor redwood #54 valued at over \$60,000, within the critical root zone (CRZ) of this tree. The CTA suggests that a chain link post-demolition fence be immediately erected around the zone shown in magenta highlight on the CTA's tree map attached to this report, in order to protect the roots assumed to be growing horizontally westward underneath the existing residence foundation in this area. It is also suggested that this area be maintained as a "heavy irrigation" zone with once-weekly water applied to the area by garden hose or other means to maintain soil moisture within the critical root zone.

- 1.2. Proposed swimming pool work, shown as a “future” entitlement application on the grading and drainage plan sheet, would require deep excavation through the critical root zone (CRZ). The CTA suggests that the proposed swimming pool be relocated to an area west of the CRZ as shown in magenta colored highlight on the tree map attached to this arborist report, or eliminated and disallowed for this site. This may require that the proposed “pool house” (is this an accessory dwelling unit (ADU)?) be redesigned such that it is placed further westward than currently proposed on the applicant’s plans, in order to allow for the relocation of the proposed new swimming pool west of the redwood #54 critical root zone.

C. Smoke tree #55:

This is a Town-owned street tree specimen of small stature, and can be retained as-is if chain link RPZ fencing is erected around the canopy dripline as shown on the CTA’s tree map attached to this arborist report, and once-weekly irrigation water applied to the root zone.

It is not known if the applicant had planned on retaining the tree or removing it, since it was omitted from the survey and not shown on any of the proposed plan sheets. For the purposes of this report, the CTA assumes the tree is to remain.

2. TREE REMOVALS :

Cypress trees #51 and #52, valued at a total of \$17,800, are proposed by the applicant to be removed.

Per Town policy, the required mitigation for these removals is per canopy replacement value which totals $4 \times \$250 = \$1,000$, which is only 5% of the actual value of the trees. Alternatively, staff could require installation of four (4) 24” box size trees of (species and locations to be determined) on the proposed construction site.

If **Town-owned smoke tree #55** is also to be removed, then this would require an additional mitigation payment of **\$750** ($3 \times \250) canopy replacement fee by the applicant. Staff should verify with the applicant whether they had planned to remove this tree from the landscape.

3. LANDSCAPE AND IRRIGATION

Landscape plans and irrigation plans were not available in the submittal set of plans for the author’s review. Therefore, irrigation pipe trenching and tree planting locations (if any) will need to be reviewed by Town planning Staff prior to final approval of the plans, to **ensure that PVC pipe trench alignments are kept to at least 20 or 25 radial distance offset from the trunks of oak #53 and redwood #54.**

4. APPRAISAL:

The total value of the three (3) trees #53, 54, and #55 being protected and retained at and adjacent to this site is **\$94,780** as determined by the CTA and shown in the above table. See the table above for the appraised dollar value of each individual tree specimen based on the new Guide for Plant Appraisal 10th edition (2018). Also note that per this new edition of the Guide, a newly revised overall condition rating table applies (the new table is included in this report below the tree data table).

5. SECURITY BONDING:

The new 2015 iteration of the Town tree ordinance section 29.10.1000 (c)3 includes wordage that requires that all trees being retained on a development site need to be appraised for dollar value at the applicant's expense prior to building or grading permits being issued by the Town. Part 'f' of this same tree ordinance section states that the Town may condition a security bond prior to issuance of a permit, in the sum of \$5,000 per each tree being preserved, or \$25,000, whichever is less. There are three (3) trees being preserved.

It would be reasonable, based on the actual appraised values of trees being retained at this site, for the Town to condition the project approval upon posting of a security bond in the amount of **\$15,000**, to ensure that the trees being retained and protected (oak #53, redwood #54, smoke tree #55) actually survive the construction process and maintain their pre-project condition ratings into the future. Note that the actual value of these three trees is \$94,780, and that a bond of \$15,000 would constitute only 16% of the appraised value of the trees: a very reasonable security bond amount.

2.0 Assignment & Background

Walter Levison, Consulting Arborist (the Los Gatos CTA) was directed to tag and assess all Protected-Size (4-inch diameter and greater) trees in relatively close proximity to the proposed site plan project.

The trees that were accessible were affixed with numeric tags at approximately eye level.

The CTA summarized the tree situation from a long-term site manager's perspective, both in table form and in written form above, in section 1 of the report. This may be most important section of the report, as it provides a quick but very detailed summary of existing tree conditions and suggested protection and maintenance items in both table form and written form for use by City Staff and the project development team.

Specific recommendations for tree maintenance and protection are outlined below in section 4.0, and are based directly on the suggested protection and maintenance items noted in section 1.

Digital images of the trees archived by WLCA are included below in this report for reference of existing pre-project conditions as report section 10. Images are in order of tree tag number.

The tree data table with detailed tree information makes up section 11.0 of this report. The CTA used a forester's D-tape to determine trunk diameter at 4.5 feet above grade, or at a narrow point below a mainstem fork if the fork occurs at 4.5 feet above grade. The D-tape converts actual trunk circumference into diameter in inches and tenths of inches. Tree heights were determined using a digital Nikon Forestry Pro 550 rangefinder and hypsometer. Tree canopy spreads were visually estimated or paced out by foot.

Tree tag numbers are noted on the CTA tree map markup attached to the end of this written report as section 12. The base sheet used for creation of this markup is the applicant's grading and drainage plan sheet C-2 dated 12/2/2018 by NNR Engineering of San Jose, California. The sheet includes black clouding for canopy driplines, red dashed lines indicating preferred chain link root protection zone fence routing, magenta highlighting indicating rough "critical root zone" areas which should be maintained as "no dig" zones where trenching and excavation should be eliminated, and various typed notes.

The appraisal worksheet, also attached to the end of this report, is referenced as report section 13, and is a special Town of Los Gatos requirement that determines the dollar value of each tree. The CTA used the new 2018 10th edition of *Guide for Plant Appraisal* to determine these values, based on the new “trunk formula technique” (TFT) that has been in use for less than one year.

3.0 Town of Los Gatos – What Trees are Protected?

Per the most recent (2015) iteration of the Town of Los Gatos tree ordinance (Town Code Chapter 29 – Zoning Regulations, Article 1), the following regulations apply to all trees within the Town’s jurisdiction (wordage adjusted):

1. All trees with at least a single mainstem measuring four (4) inches diameter or greater at 4.5 feet above grade are considered “**Protected Trees**” when removal relates to any development review.
2. 12 inch diameter (18 inch multistem total) trees on developed residential property not currently subject to development review.
3. 8 inch diameter (8 inch multistem total) blue oak (*Quercus douglasii*), black oak (*Quercus kellogii*), California buckeye (*Aesculus californica*), and Pacific madrone (*Arbutus menziesii*) on developed residential lots not currently subject to development review.
4. 8 inch diameter (8 inch multistem total) trees on developed residential property not currently subject to development review, on lots in the designated **Hillside Area** per the official Town map.
5. All trees with a single mainstem or sum of multiple mainstems totaling 48 inches diameter or greater at 4.5 feet above grade are considered “**Large Protected Trees**” (LPT).
6. All oak species (*Quercus spp.*), California buckeye (*Aesculus californica*), and Pacific madrone (*Arbutus menziesii*) with one or more mainstems totaling 24 inches diameter or more at 4.5 feet above grade are considered “**Large Protected Trees**” (LPT).
7. Section 29.10.0965. Prohibitions: A **permit** is required to prune, trim, cut off, or perform any work, on a single occasion or cumulatively, over a three-year period, affecting 25% or more of any **Protected Tree** (including below ground root system).
8. Section 29.10.0965. Prohibitions: A **permit** is required to prune, trim, or cut any branch or root greater than four (4) inches in diameter of a **Large Protected Tree**.
9. Section 29.10.0965. Prohibitions: A permit is required to conduct severe pruning on any protected tree. Severe pruning is defined in section 29.10.0955 as “topping or removal of foliage or significant scaffold limbs or large diameter branches so as to cause permanent damage and/or disfigurement of a tree, and/or which does not meet specific pruning goals and objectives as set forth in the current version of the International Society of Arboriculture Best Management Practices-Tree Pruning and ANSI A300-Part 1 Tree, Shrub, and Other Woody Plant Management-Standard Practices, (Pruning).”
10. Exceptions:

Severe Pruning Exception in Town Code section 29.10.1010(3) “.....except for pollarding of fruitless mulberry (*Morus alba*) or other species approved by the Town Arborist....”.

Protected Tree Exceptions:

- a. Edible fruit or nut bearing trees less than 18 inches diameter (multistem total or single stem)
- b. *Acacia melanoxylon* (blackwood acacia) less than 24 inches (multistem total or single stem)
- c. *Liriodendron tulipifera* (tulip tree) less than 24 inches (multistem total or single stem)
- d. *Ailanthus altissima* (tree of heaven) less than 24 inches (multistem total or single stem)
- e. *Eucalyptus globulus* (Tasmanian blue gum) less than 24 inches (multistem total or single stem)
- f. *Eucalyptus camaldulensis* (River red gum) less than 24 inches (multistem total or single stem)
- g. *Other eucalyptus species* (E. spp.) not noted above, less than 24 inches (multistem total or single stem)

(REMOVAL O.K. ONLY AT HILLSIDE AREA LOCATIONS PER OFFICIAL TOWN MAP):

www.losgatosca.gov/documentcenter/view/176

- h. All palm species (except *Phoenix canariensis*) less than 24 inches (multistem total or single stem)
- i. *Ligustrum lucidum* (glossy privet) less than 24 inches (multistem total or single stem)

Note that per the exception in part ‘a’ above, fruiting olive trees with stems totaling less than 18 inches are considered non-protected.

4.0 Recommendations

1. Project Team Pre-Project Adjustments, Clarifications, and Limits Requested (excerpted from this CTA Report Section 1.0(b):

D. Oak #53:

- 1.1. Proposed joint trench is within critical root zone (CRZ) of tree. Need to relocate to 20 or 25 feet offset from trunk edge.
- 1.2. Proposed storm drain and associated drain inlet/box south of trunk within critical root zone (CRZ). Need to relocate or eliminate this drain trench and inlet box, and instead use shallow hand-graded swale to convey water toward street. Build inlet box adjacent to street as necessary to comply with Town Public Works Dept stormwater conveyance requirements.
- 1.3. Proposed storm drain west of trunk within critical root zone (CRZ) of tree. Verify with applicant’s project team whether this drain pipe trench is meant to convey rooftop downspout water. Need to relocate this entire trench to at least 20 or 25 feet offset radius from the trunk of oak #53 by placing it on the opposite side of the proposed new residence.
- 1.4. Proposed new driveway is within the critical root zone (CRZ) of tree. Suggest use alternative methods and materials, such as installation of a Tensar TriAx triaxial geogrid pinned down over the soil surface or old baserock surface as an underlayment to allow the new baserock and new concrete to be placed over grade as a floating system, thereby avoiding excavation. The TriAx geogrid disperses load forces laterally, and thereby allows for elimination of any subbase excavation or subbase recompaction. It also allows for up to a 50% thinning of the new base section thickness per Tensar Corp’s technical documents online. See photos below showing Walter Levison’s Stanford University parking lot and sidewalk TriAx installation in 2018. **NOTE: PHASE DEMOLITION OF THE OLDER DRIVEWAY TO END OF PROJECT.**

This Page:

Tensor TriAx geogrid being pinned down to the soil surface at Stanford University in 2018 (Walter Levison projects).

Above and below images are a parking lot project where \$200,000 worth of large mature oak trees are being preserved throughout the lot by use of the geogrid, and by eliminating subbase work altogether. Also, the curb footing bases were raised up to the elevations of the geogrid so that no

unnecessary excavation would occur.

The photo at far right is a sidewalk project at Stanford where the walkway passes beneath the canopy dripline of a very large and valuable oak specimen that is a key historic element of the landscape.

Baserock is laid directly over the geogrid after it is pinned in place with steel pins (photo at right shows baserock piled over the geogrid).



- 1.5. Proposed new garage will be built slightly within the critical root zone. Suggest use an alternative specification for the garage foundation work, such as "slab floating over grade with maximum 4 inches of total cut below existing grade elevation, and total max. cut of 4 inches below existing grade elevation for any proposed perimeter grade beam.
- 1.6. If 14 feet of airspace clearance over the new driveway is required, then retain an ISA Certified Arborist to perform removal of one (1) 7 inch diameter limb at the point of attachment on the main stem at 15 feet above grade per all of the most current ANSI A300 tree pruning standards, to remove the entire limb which currently extends westward over the driveway and hangs down to just a few feet above grade (see photos in below in this report).

E. Redwood #54:

- 1.1. Proposed demolition of the existing southmost residence may cause damage to existing fine fibrous roots and larger diameter woody roots extending westward from neighbor redwood #54 valued at over \$60,000, within the critical root zone (CRZ) of this tree. The CTA suggests that a chain link post-demolition fence be immediately erected around the zone shown in magenta highlight on the CTA's tree map attached to this report, in order to protect the roots assumed to be growing horizontally westward underneath the existing residence foundation in this area. It is also suggested that this area be maintained as a "heavy irrigation" zone with once-weekly water applied to the area by garden hose or other means to maintain soil moisture within the critical root zone.
- 1.2. Proposed swimming pool work, shown as a "future" entitlement application on the grading and drainage plan sheet, would require deep excavation through the critical root zone (CRZ). The CTA suggests that the proposed swimming pool be relocated to an area west of the CRZ as shown in magenta colored highlight on the tree map attached to this arborist report, or eliminated and disallowed for this site. This may require that the proposed "pool house" (is this an ADU second dwelling unit (ADU)?) be redesigned such that it is placed further westward than currently proposed on the applicant's plans, in order to allow for the relocation of the proposed new swimming pool west of the redwood #54 critical root zone.

F. Smoke tree #55 (if retained):

Erect chain link RPZ fencing around the canopy dripline as shown on the CTA's tree map attached to this arborist report, and apply once-weekly irrigation water to the entire protected root zone area within the chain link fence perimeter.

2. Pruning:

All pruning work on trees at this project will need to be performed directly by or under full-time direct site supervision of an ISA Certified Arborist.

All pruning shall conform to the most current iteration (2017) of ANSI-A300 *tree, shrub, and other woody plant maintenance / pruning* and the Best Management Practices companion pamphlet to the ANSI-A300 pruning standards, published by International Society of Arboriculture.

3. New Irrigation Piping and Landscape Plantings:

For irrigation piping that needs to be placed within 25 linear feet of oak #53 or redwood #54, use a flexible UV-resistant pipe of commercial grade, such as the following very thick-walled flexible UV-resistant PVC piping, which can be placed directly over-grade, or shallow-buried at 0 to 2 inches maximum depth below surface soil grade. Images of these components are shown below on page 17 of this report. The construction of this brand of piping is far superior to anything else available on the market in the United States, as the thickness of the tubing wall is at least 3x to 4x thickness of standard flex irrigation tubing, and is therefore highly resistant to animal chewing and other “vandalism” type damages that occur with surface-installed tubing. Available for purchase only at Site One Landscape Supply in San Jose, CA within easy driving distance of Los Gatos.

Suggested Best Management Practice (BMP) Irrigation System Components:

- Salco brand flexible PVC. UV-resistant and algae-resistant. **Salco model #PVC-AR-050IPS.** “1/2 inch” diameter (see photo below for example of how the system is constructed).
- White PVC ½ diameter” tubing couplings.
- “1 gallon per minute” or “2 gallon per minute” very high-flow rate adjustable flood bubblers (e.g. TORO brand, etc.).

SiteOne Landscape Supply

Website

Directions

Save

4.6 ★★★★★ 21 Google reviews

Landscaping supply store

Address: 1145 N 13th St, San Jose, CA 95112

Hours: Open · Closes 4:30PM ▾

Phone: (408) 295-3376



2. Trunk Buffer Wrap Type III Protection:

Prior to project commencement, install a trunk buffer around the lowermost 6 to 8 feet of the mainstems of **valley oak #53 and smoke tree #55 being retained in close proximity to proposed new construction activity.**

Wrap approximately 10 to 15 wraps of orange plastic snow fencing around the trunk between grade and 6 to 8 feet above grade to create a padding at least 1 to 2 inches thickness around each tree trunk.

Stand 2x4 wood boards upright, side by side, around the entire circumference of the trunk. Affix using duct tape (do not use wires or ropes). See spec image at right showing the wooden boards correctly mounted against the plastic, such that the wood does not actually touch the trunk at all.

3. Chain Link Fencing Type I and/or Type II Root Protection Zone (RPZ):

Prior to commencing site demolition, erect chain link fencing panels set on moveable concrete block footings. Wire the fence panels to iron layout stakes pounded 24 inches into the ground at the ends of each fence panel to keep the fence route stabilized and in its correct position. Do not wire the fence panels to the trunks of the trees. These panels are available commonly for rent or purchase.

Alternative Fencing / Tube Posts and Rolled Chain Link:

Using a professional grade post bender, pound 7-foot long 2-inch diameter iron tube posts 24-inches into the ground, at 6 to 10-foot spacing maximum on-center, and hang steel chain link fencing material minimum 5-feet height on the tube posts. These materials are available for purchase at many retail and wholesale construction supply houses such as Home Depot, Lowe's, Grainger's, White Cap, Harbor Freight, etc.

Pre-construction fence routes:

Per the red dashed lines on the tree map mark-up attached to this WLCA arborist report.

- **Valley oak #53: Erect fencing as far as possible from trunk, assuming the existing older driveway is to remain under the end of project. If the older driveway is demolished in the beginning of the project, then fencing will need to be placed over the entire magenta highlighted area indicated on the CTA's tree map in order to preserve the root system within roughly 25 feet of trunk.**



- **Neighbor redwood #54: Erect fencing (immediately after demolition of the southmost older residence) around the entire magenta highlighted area indicated on the CTA's tree map attached to this report.**
- **Town-owned smoke tree #55: Erect fencing roughly 10 feet radius offset from trunk mass (i.e. 20 foot diameter fence perimeter).**

(Routes may be subject to change, depending on the finalized alignments of work items).

This fencing must be erected prior to any heavy machinery traffic or construction material arrival on site, except for redwood #54 fencing which is "post-demolition" phase.

The protective fencing must not be temporarily moved during construction. No materials, tools, excavated soil, liquids, substances, etc. are to be placed or dumped, even temporarily, inside the root protection zone or "RPZ".

No storage, staging, work, or other activities will be allowed inside the RPZ except with PA monitoring. Note however that some RPZ fencing areas may need to be removed or moved to allow for final hardscape and final landscape plant and irrigation system installation to occur.

4. Signage: The RPZ fencing shall have one sign affixed with UV-stabilized zip ties to the chain link at eye level for every 15 linear feet of fencing, minimum 8"X11" size each, plastic laminated, with wordage that includes the Town Code section that refers to tree fence protection requirements (wordage can be adjusted):

**TREE PROTECTION ZONE FENCE
ZONA DE PROTECCION PARA ARBOLES**

**-NO ENTRE SIN PERMISO-
-LLAME EL ARBOLISTA-**

**REMOVAL OF THIS FENCE IS
SUBJECT TO PENALTY ACCORDING TO
LOS GATOS TOWN CODE 29.10.1025**

PROJECT ARBORIST:

TELEFONO CELL:

EMAIL:

5. Water Spray:

Spray off foliage of all trees **within 20 feet of construction** activity using a very high power garden hose or a pressure washer system set on low pressure to wash both the upper and lower surfaces of foliage. This helps keep the gas portals (stomata) unclogged for better gas exchange which is crucial for normal tree function.

Spray should be applied approximately **once-monthly**, or when ambient airborne dust concentration is unusually high.

6. Tree Removal Permitting / Removal of Protected-Size Trees:

Removal of trees #51 and 52 is expected to occur as a result of proposed new project. The applicant shall pay a canopy replacement fee of **\$1,000**, or install four (4) 24" box size trees on site (locations and species to be determined).

If Town-owned smoke tree #55 is removed, then the applicant shall pay an additional **\$750** in canopy replacement fees, or site installation of an additional three (3) 24" box size trees (locations and species to be determined).

7. Temporary Irrigation During Construction:

Non-Oaks: Redwood #54 (Neighbor-owned tree)

Volume per week: +/-100 gallons

Application locations: Throughout the magenta highlighted area indicated on the CTA's tree map markup (i.e. the entire area inside the post-demolition chain link RPZ fence perimeter that will span roughly 25 feet offset radius from the trunk edge).

Native California Oaks / Valley Oak #53:

Volume per week: (To be determined).

Application locations: (To be determined).

Water application can be made using one or more of the following methods (see sample images):

- Soaker hoses.
- Emitter lines.
- Garden hoses.
- Fire truck hoses.



- Water trucks.
- Tow-behind spray tank apparatus.
- On-site water tank with gravity feed.
- Over-grade PVC piping with spray heads wired to rebar or other steel stakes.

5.0 Tree Protection and Maintenance Directions per Town Code

The following is excerpted directly from the 2015 iteration of the Town of Los Gatos tree ordinance sections which provide specific tree protection directions and limitations on root pruning and above-ground pruning:

Sec. 29.10.1000. New property development.

(a) A tree survey shall be conducted prior to submittal of any development application proposing the removal of or impact to one or more protected trees. The development application shall include a Tree Survey Plan and Tree Preservation Report based on this survey. The tree survey inventory numbers shall correspond to a numbered metal tag placed on each tree on site during the tree survey. The tree survey plan shall be prepared by a certified or consulting arborist, and shall include the following information:

- (1) Location of all existing trees on the property as described in section 29.10.0995;
- (2) Identify all trees that could potentially be affected by the project (directly or indirectly- immediately or in long term), such as upslope grading or compaction outside of the dripline;
- (3) Notation of all trees classified as protected trees;
- (4) In addition, for trees four (4) inches in diameter or larger, the plan shall specify the precise location of the trunk and crown spread, and the species, size (diameter, height, crown spread) and condition of the tree.

(b) The tree survey plan shall be reviewed by the Town's consulting arborist who shall, after making a field visit to the property, indicate in writing or as shown on approved plans, which trees are recommended for preservation (based on a retention rating of high/moderate/low) using, as a minimum, the Standards of Review set forth in section 29.10.0990. This plan shall be made part of the staff report to the Town reviewing body upon its consideration of the application for new property development;

(c) When development impacts are within the dripline of or will affect any protected tree, the applicant shall provide a tree preservation report prepared by a certified or consulting arborist. The report, based on the findings of the tree survey plan and other relevant information, shall be used to determine the health and structure of existing trees, the effects of the proposed development and vegetation removal upon the trees, recommendations for specific precautions necessary for their preservation during all phases of development (demolition, grading, during construction, landscaping); and shall also indicate which trees are proposed for removal. The tree preservation report shall stipulate a required tree protection zone (TPZ) for trees to be retained, including street trees, protected trees and trees whose canopies are hanging over the project site from adjacent properties. The TPZ shall be fenced as specified in section 29.10.1005:

- (1) The final approved tree preservation report shall be included in the building permit set of development plans and printed on a sheet titled: Tree Preservation Instructions (Sheet T-1). Sheet T-1 shall be referenced on all relevant sheets (civil, demolition, utility, landscape, irrigation) where tree impacts from improvements may be shown to occur;
- (2) The Town reviewing body through its site and design plan review shall endeavor to protect all trees recommended for preservation by the

Town's consulting arborist. The Town reviewing body may determine if any of the trees recommended for preservation should be removed, if based upon the evidence submitted the reviewing body determines that due to special site grading or other unusual characteristics associated with the property, the preservation of the tree(s) would significantly preclude feasible development of the property as described in section 29.10.0990;

(3) Approval of final site or landscape plans by the appropriate Town reviewing body shall comply with the following requirements and conditions of approval:

a. The applicant shall, within ninety (90) days of final approval or prior to issuance of a grading or building permit, whichever occurs first, secure an appraisal of the condition and value of all trees included in the tree report affected by the development that are required to remain within the development using the Tree Value Standard methodology as set forth in this Chapter. The appraisal of each tree shall recognize the location of the tree in the proposed development. The appraisal shall be performed in accordance with the current edition of the Guide for Plant Appraisal published by the Council of Tree and Landscape Appraisers (CTLA) and the Species and Group Classification Guide published by the Western Chapter of the International Society of Arboriculture. The appraisal shall be performed at the applicant's expense, and the appraisal shall be subject to the Director's approval.

b. The site or landscape plans shall indicate which trees are to be removed. However, the plans do not constitute approval to remove a tree until a separate permit is granted. The property owner or applicant shall obtain a protected tree removal permit, as outlined in section 29.10.0980, for each tree to be removed to satisfy the purpose of this division.

(d) Prior to acceptance of proposed development or subdivision improvements, the developer shall submit to the Director a final tree preservation report prepared by a certified or consulting arborist. This report shall consider all trees that were to remain within the development. The report shall note the trees' health in relation to the initially reported condition of the trees and shall note any changes in the trees' numbers or physical conditions. The applicant will then be responsible for the loss of any tree not previously approved for removal. For protected trees, which were removed, the developer shall pay a penalty in the amount of the appraised value of such tree in addition to replacement requirements contained in section 29.10.0985 of this Code. The applicant shall remain responsible for the health and survival of all trees within the development for a period of five (5) years following acceptance of the public improvements of the development or certificate of occupancy.

(e) Prior to issuance of any demolition, grading or building permit, the applicant or contractor shall submit to the Building Department a written statement and photographs verifying that the required tree protection fence is installed around street trees and protected trees in accordance with the tree preservation report.

(f) If required by the Director and conditioned as part of a discretionary approval, a security guarantee shall be provided to the Town. Prior to the issuance of any permit allowing construction to begin, the applicant shall post cash, bond or other security satisfactory to the Director, in the penal sum of five thousand dollars (\$5,000.00) for each tree required to be preserved, or twenty-five thousand dollars (\$25,000.00), whichever is less. The cash, bond or other security shall be retained for a period of one (1) year following acceptance of the public improvements for the development and shall be forfeited in an amount equal to five thousand dollars (\$5,000.00) per tree as a civil penalty in the event that a tree or trees required to be preserved are removed, destroyed or severely damaged.

(g) An applicant with a proposed development which requires underground utilities shall avoid the installation of said utilities within the dripline of existing trees whenever possible. In the event that this is unavoidable, all trenching shall be done using directional boring, air-spade excavation or by hand, taking extreme caution to avoid damage to the root structure. Work within the dripline of existing trees shall be supervised at all times by a certified or consulting arborist.

(h) It shall be a violation of this division for any property owner or agent of the owner to fail to comply with any development approval condition

concerning preservation, protection, and maintenance of any protected tree.

(Ord. No. 2114, §§ I, II, 8-4-03)

Sec. 29.10.1005. Protection of trees during construction.

(a) Protective tree fencing shall specify the following:

- (1) Size and materials. Six (6) foot high chain link fencing, mounted on two-inch diameter galvanized iron posts, shall be driven into the ground to a depth of at least two (2) feet at no more than 10-foot spacing. For paving area that will not be demolished and when stipulated in a tree preservation plan, posts may be supported by a concrete base.
- (2) Area type to be fenced. Type I: Enclosure with chain link fencing of either the entire dripline area or at the tree protection zone (TPZ), when specified by a certified or consulting arborist. Type II: Enclosure for street trees located in a planter strip: chain link fence around the entire planter strip to the outer branches. Type III: Protection for a tree located in a small planter cutout only (such as downtown): orange plastic fencing shall be wrapped around the trunk from the ground to the first branch with 2-inch wooden boards bound securely on the outside. Caution shall be used to avoid damaging any bark or branches.
- (3) Duration of Type I, II, III fencing. Fencing shall be erected before demolition, grading or construction permits are issued and remain in place until the work is completed. Contractor shall first obtain the approval of the project arborist on record prior to removing a tree protection fence.
- (4) Warning sign. Each tree fence shall have prominently displayed an 8.5 x 11-inch sign stating: "Warning—Tree Protection Zone-this fence shall not be removed and is subject to penalty according to Town Code 29.10.1025".

(b) All persons, shall comply with the following precautions:

- (1) Prior to the commencement of construction, install the fence at the dripline, or tree protection zone (TPZ) when specified in an approved arborist report, around any tree and/or vegetation to be retained which could be affected by the construction and prohibit any storage of construction materials or other materials, equipment cleaning, or parking of vehicles within the TPZ. The dripline shall not be altered in any way so as to increase the encroachment of the construction.
- (2) Prohibit all construction activities within the TPZ, including but not limited to: excavation, grading, drainage and leveling within the dripline of the tree unless approved by the Director.
- (3) Prohibit disposal or depositing of oil, gasoline, chemicals or other harmful materials within the dripline of or in drainage channels, swales or areas that may lead to the dripline of a protected tree.
- (4) Prohibit the attachment of wires, signs or ropes to any protected tree.
- (5) Design utility services and irrigation lines to be located outside of the dripline when feasible.
- (6) Retain the services of a certified or consulting arborist who shall serve as the project arborist for periodic monitoring of the project site and the health of those trees to be preserved. The project arborist shall be present whenever activities occur which may pose a potential threat to the health of the trees to be preserved and shall document all site visits.
- (7) The Director and project arborist shall be notified of any damage that occurs to a protected tree during construction so that proper treatment may

be administered.

(Ord. No. 2114, §§ I, II, 8-4-03)

Sec. 29.10.1010. Pruning and maintenance.

All pruning shall be in accordance with the current version of the International Society of Arboriculture Best Management Practices—Tree Pruning and ANSI A300-Part 1 Tree, Shrub and Other Woody Plant Management—Standard Practices, (Pruning) and any special conditions as determined by the Director. For developments, which require a tree preservation report, a certified or consulting arborist shall be in reasonable charge of all activities involving protected trees, including pruning, cabling and any other work if specified.

- (1) Any public utility installing or maintaining any overhead wires or underground pipes or conduits in the vicinity of a protected tree shall obtain permission from the Director before performing any work, including pruning, which may cause injury to a protected tree. (e.g. cable TV/fiber optic trenching, gas, water, sewer trench, etc.).
- (2) Pruning for clearance of utility lines and energized conductors shall be performed in compliance with the current version of the American National Standards Institute (ANSI) A300 (Part 1)- Pruning, Section 5.9 Utility Pruning. Using spikes or gaffs when pruning, except where no other alternative is available, is prohibited.
- (3) No person shall prune, trim, cut off, or perform any work, on a single occasion or cumulatively, over a three-year period, affecting twenty-five percent or more of the crown of any protected tree without first obtaining a permit pursuant to this division except for pollarding of fruitless mulberry trees (*Morus alba*) or other species approved by the Town Arborist. Applications for a pruning permit shall include photographs indicating where pruning is proposed.
- (4) No person shall remove any Heritage tree or large protected tree branch or root through pruning or other method greater than four (4) inches in diameter (12.5" in circumference) without first obtaining a permit pursuant to this division.

(Ord. No. 2114, §§ I, II, 8-4-03)

6.0 Tree Replacement Standards – Los Gatos Town Code

(Excerpted from Town Code 29.10.0985 and 29.10.0987)

- (1) Two (2) or more replacement trees, of a species and size designated by the Director, shall be planted on the subject private property. Table 3-1 The Tree Canopy—Replacement Standard shall be used as a basis for this requirement. The person requesting the permit shall pay the cost of purchasing and planting the replacement trees.
- (2) If a tree or trees cannot be reasonably planted on the subject property, an in-lieu payment in an amount set forth by the Town Council by resolution shall be paid to the Town Tree Replacement Fund to:
 - a. Add or replace trees on public property in the vicinity of the subject property; or
 - b. Add or replace trees or landscaping on other Town property; or
 - c. Support the Town's urban forestry management program. (Ord. No. 2114, §§ I, II, 8-4-03)

Table 3-1 - Tree Canopy - Replacement Standard

Canopy Size of Removed Tree ¹	(Staff is using 24" box size as the Replacement Standard for SFR Projects as of 2016) ^{2,4}	Single Family Residential Replacement ^{3,4}
10 feet or less	Two 24 inch box trees	Two 15 gallon trees
More than 10 feet to 25 feet	Three 24 inch box trees	Three 15 gallon trees
More than 25 feet to 40 feet	Four 24 inch box trees; or Two 36 inch box trees	Four 15 gallon trees
More than 40 feet to 55 feet	Six 24 inch box trees; or Three 36 inch box trees	Not Available
Greater than 55 feet	Ten 24 inch box trees; or Five 36 inch box trees	Not Available

Notes

¹To measure an asymmetrical canopy of a tree, the widest measurement shall be used to determine canopy size.

²Often, it is not possible to replace a single large, older tree with an equivalent tree(s). In this case, the tree may be replaced with a combination of both the Tree Canopy Replacement Standard and in-lieu payment in an amount set forth by Town Council resolution paid to the Town Tree Replacement Fund.

³Single Family Residential Replacement Option is available for developed single family residential lots under 10,000 square feet that are not subject to the Town's Hillside Development Standards and Guidelines. All 15-gallon trees must be planted on-site. Any in-lieu fees for single family residential shall be based on 24" box tree rates as adopted by Town Council.

⁴Replacement Trees shall be approved by the Town Arborist and shall be of a species suited to the available planting location, proximity to structures, overhead clearances, soil type, compatibility with surrounding canopy and other relevant factors. Replacement with native species shall be strongly encouraged. Replacement requirements in the Hillside shall comply with the Hillside Development Standards and Guidelines Appendix A and Section 29.10.0987 Special Provisions--Hillsides.

Sec. 29.10.0987. Special Provisions—Hillsides

The Town of Los Gatos recognizes its hillsides as an important natural resource and sensitive habitat which is also a key component of the Town's identity, character and charm. In order to maintain and encourage restoration of the hillside environment to its natural state, the Town has established the following special provisions for tree removal and replacement in the hillsides:

- (1) All protected trees located 30 or more feet from the primary residence that are removed shall be replaced with native trees listed in *Appendix A Recommended Native Trees for Hillside Areas of the Town of Los Gatos Hillside Development Standards and Guidelines* (HDS&G).
- (2) All protected trees located within 30 feet of the primary residence that are removed shall be replaced as follows:
 - (a) If the removed tree is a native tree listed in Appendix A of the HDS&G, it shall only be replaced with a native tree listed in Appendix A of the HDS&G.
 - (b) If the removed tree is not listed in Appendix A, it may be replaced with a tree listed in Appendix A, or replaced with another species of tree as approved by the Director.
 - (c) Replacement trees listed in Appendix A may be planted anywhere on the property.
 - (d) Replacement trees not listed in Appendix A may only be planted within 30 feet of the primary residence.
- (3) Replacement requirements shall comply with the requirements in Table 3-1 Tree Canopy Replacement Standard of this Code.
- (4) Property owners should be encouraged to retain dead or declining trees where they do not pose a safety or fire hazard, in order to foster wildlife habitat and the natural renewal of the hillside environment.

7.0 Author's Qualifications

- Continued education through The American Society of Consulting Arborists, The International Society of Arboriculture (Western Chapter), and various governmental and non-governmental entities.
- Contract Town Arborist, Town of Los Gatos, California
Community Development Department / Planning Division
2015-present
- Tree Risk Assessment Qualified (ISA TRAQ Course Graduate, Palo Alto, California)
- Millbrae Community Preservation Commission (Tree Board)
2001-2006
- ASCA Registered Consulting Arborist #401
- ASCA Arboriculture Consulting Academy graduate, class of 2000

- Associate Consulting Arborist
Barrie D. Coate and Associates
4/99-8/99
- Contract City Arborist, City of Belmont, California
Planning and Community Development Department
5/99-present
- ISA Certified Arborist #WE-3172A
- Peace Corps Soil and Water Conservation Extension Agent
Chiangmai Province, Thailand 1991-1993
- B.A. Environmental Studies/Soil and Water Resources
UC Santa Cruz, Santa Cruz, California 1990

UCSC Chancellor's Award, 1990

(My full curriculum vitae is available upon request)

8.0 Assumptions and Limiting Conditions

Any legal description provided to the consultant/appraiser is assumed to be correct. Any titles and ownership to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised and evaluated as through free and clean, under responsible ownership and competent management.

It is assumed that any property is not in violation of any applicable codes, ordinance, statutes, or other government regulations.

Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant/appraiser can neither guarantee nor be responsible for the accuracy of information provided by others.

The consultant/appraiser shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

Unless required by law otherwise, the possession of this report or a copy thereof does not imply right of publication or use for any other purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of the consultant/appraiser.

Unless required by law otherwise, neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales, or other media, without the prior expressed conclusions, identity of the consultant/appraiser, or any reference to any professional society or institute or to any initiated designation conferred upon the consultant/appraiser as stated in his qualifications.

This report and any values expressed herein represent the opinion of the consultant/appraiser, and the consultant's/appraiser's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

Sketches, drawings, and photographs in this report, being intended for visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys unless expressed otherwise. The reproduction of any information generated by engineers, architects, or other consultants on any sketches, drawings, or photographs is for the express purpose of

coordination and ease of reference only. Inclusion of said information on any drawings or other documents does not constitute a representation by Walter Levison to the sufficiency or accuracy of said information.

Unless expressed otherwise:

- a. information contained in this report covers only those items that were examined and reflects the conditions of those items at the time of inspection; and
- b. the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.

Loss or alteration of any part of this report invalidates the entire report.

Arborist Disclosure Statement:

Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed.

Treatment, pruning, and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate the trees.

9.0 Certification

I hereby certify that all the statements of fact in this report are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.



Signature of Consultant



Walter Levison

10.0 Digital Images

WLCA archived images of the survey trees on 1/29/2019

Tag #	Image	Tag #	Image
R to L 51, 52		R to L 51, 52	

53



The limb extending left at 15 feet elevation may need to be removed to clear construction. It is placed directly over the existing and proposed driveway footprint, and extends generally westward, hanging down to just a few feet above grade once it reaches the grass area in this image.

53



53



This older driveway area is the oak #53 “Critical Root Zone” (west side of root zone) which will be required to be preserved and protected during construction.

There are two separate proposed storm drain pipes that will have to be realigned to outside this area (preferably to 25 feet offset of the trunk), and one proposed new joint trench that will also need to be realigned to 25 feet or so from trunk.

To preserve the root zone under this older driveway, an underlayment of Tensar TriAx triaxial geogrid will need to be pinned down over the old baserock or old soil as a lateral load dispersal membrane, prior to building up baserock and pavers, etc. over the rock. This will allow us to avoid any subbase overexcavation or subbase recompaction that would otherwise be required and which normally destroy trees’ root systems in the process. See digital images of TriAx installations at Stanford for a Walter Levison project, above in this report.

54



The critical root zone (CRZ) of this very large neighbor owned redwood, valued at over \$60,000, extends at least 20 feet westward beyond the property boundary fence, and into the proposed “future pool” area shown on the applicant’s plans.

54



The tree extends 120 feet vertical, with 50 feet or more of canopy spread. The proposed pool area will need to be redesigned in order to avoid destroying the tree's western root system, assuming that the roots extend under the existing residence to be demolished on 16336 Shady View (which is very likely).

55



11.0 Tree Data Table

NOTE 1: Fruit and nut trees measuring less than 18” diameter (total of all mainstems), including fruiting olive trees, both on the site and on adjacent neighbor properties, are excluded from the CTA’s tree studies as “exemption trees” per the Town tree ordinance.

NOTE 2: Tree preservation suitability ratings (TPS) are determined independently from and irrespective of current proposed site construction work.

Tree Tag Number	Genus & Species (PROTECTED STATUS NOTED WHERE APPLICABLE)	Common Name	Trunk1 Diameter	Trunk2 Diameter	Trunk3 Diameter	Sum of All Trunk Diameters	Height & Canopy Spread (Ft.)	Health & Structural Rating (100% Each)	Overall Condition Rating (0 to 100%)	(R)emove Tree	(S)ave Tree	(D)isposition Unclear	Tree Preservation Suitability Ratings (TPS)	Lopsided Canopy (note direction)	Trunk Lean (note direction)	Girdling Roots	Root Flares Buried in Fill Soil	Pests and Disease Presence, and Other Notes	MAINTENANCE AND PROTECTION CODES
51	<i>Cupressus sempervirens</i>	Italian cypress	Est. 18	--	--	Est. 18	50/8	75/70	74% Good	X			Mod to Good					Good live crown ratio. No insect or pest issues noted. Trunk diameter measured near grade.	(To be removed)
52	<i>Cupressus sempervirens</i>	Italian cypress	Est. 18	--	--	Est. 18	50/8	75/70	74% Good	X			Mod to Good					Good live crown ratio. No insect or pest issues noted. Trunk diameter measured near grade.	(To be removed)

Tree Tag Number	Genus & Species (PROTECTED STATUS NOTED WHERE APPLICABLE)	Common Name	Trunk1 Diameter	Trunk2 Diameter	Trunk3 Diameter	Sum of All Trunk Diameters	Height & Canopy Spread (Ft.)	Health & Structural Rating (100% Each)	Overall Condition Rating (0 to 100%)	(R)remove Tree	(S)ave Tree	(D)isposition Unclear	Tree Preservation Suitability Ratings (TPS)	Lopsided Canopy (note direction)	Trunk Lean (note direction)	Girdling Roots	Root Flares Buried in Fill Soil	Pests and Disease Presence, and Other Notes	MAINTENANCE AND PROTECTION CODES
53	<i>Quercus lobata</i> Protected as "Large Protected Tree"	California valley oak	26.4	--	--	26.4	55/55	87/68	74% Good		X		Good to Very Good	West (due to pruning on east side by neighbor)				<p>Root system extends 50 feet radius westward through the proposed work area. We may need to remove one (1) 7" diameter limb at 15 feet elevation on west side above drive.</p> <p>Suggest move two (2) storm drain trenches and one (1) joint-trench (JT) out to at least 20 or 25 feet from trunk to avoid root loss.</p> <p>Suggest use TriAx geogrid to avoid subbase excavation that would otherwise result in root loss.</p>	<p>TB, RPZ, GEOGRID, RELOCATE THREE CURRENTLY PROPOSED TRENCHES TO 20-25 FEET RADIUS OFFSET, AND REMOVE ONE (1) 7" DIAMETER LIMB AS NEEDED ON WEST SIDE.</p> <p>Use Tensar TriAx triaxial geogrid to build the new drive without any subbase "over - excavation" or recompaction. Refer to photos in report showing this grid placement at Stanford parking lots (Walter Levison projects).</p>

Tree Tag Number	Genus & Species (PROTECTED STATUS NOTED WHERE APPLICABLE)	Common Name	Trunk1 Diameter	Trunk2 Diameter	Trunk3 Diameter	Sum of All Trunk Diameters	Height & Canopy Spread (Ft.)	Health & Structural Rating (100% Each)	Overall Condition Rating (0 to 100%)	(R)remove Tree	(S)ave Tree	(D)isposition Unclear	Tree Preservation Suitability Ratings (TPS)	Lopsided Canopy (note direction)	Trunk Lean (note direction)	Girdling Roots	Root Flares Buried in Fill Soil	Pests and Disease Presence, and Other Notes	MAINTENANCE AND PROTECTION CODES
54	<i>Sequoia sempervirens</i> Protected as "Large Protected Tree"	Coast redwood (NEIGHBOR TREE)	Est. 45	Est. 45		Est. 90 total	120/50	85/70	73% Good		X		Good to Very Good	West	Two main-stems fork at low elevation and are now angled off from vertical			Trunk diameters estimated. Lower trunk situation is not visible due to property line fence. Critical Root Zone (CRZ) is calculated as roughly 23 to 25 feet west of trunk. Assume roots are growing laterally under the existing residence on 16336 Shady View. The CTA suggests fencing off the entire area under the west canopy once the existing residence is demolished there.	Immediately after demolition of the residence under the west side of canopy, fence off the entire area under canopy using RPZ chain link, and irrigate 1x/week heavily with a garden hose 100 to 200 gallons min. per week, in the assumption that there is a viable root system of lateral woody roots extended through that area. Do not build proposed pool within 25 feet west of tree trunk.

Tree Tag Number	Genus & Species (PROTECTED STATUS NOTED WHERE APPLICABLE)	Common Name	Trunk1 Diameter	Trunk2 Diameter	Trunk3 Diameter	Sum of All Trunk Diameters	Height & Canopy Spread (Ft.)	Health & Structural Rating (100% Each)	Overall Condition Rating (0 to 100%)	(R)remove Tree	(S)ave Tree	(D)isposition Unclear	Tree Preservation Suitability Ratings (TPS)	Lopsided Canopy (note direction)	Trunk Lean (note direction)	Girdling Roots	Root Flares Buried in Fill Soil	Pests and Disease Presence, and Other Notes	MAINTENANCE AND PROTECTION CODES
55	<i>Cotinus coggygria</i> Public right of way "street tree" status	Purple smoke tree	5	5	4	27 (seven stems)	12/15	80/45	56% Fair		X		Poor to Mod					Tree has a relatively short life expectancy. Tree is easily preserved through use of periodic irrigation by hand (hose), and installation of a root protection zone fence around canopy prior to demolition start.	RPZ, W

Overall Tree Condition Ratings As Used In The Tree Data Table / New 2018 Breakdown of Numeric Ranges²:

- 00 - 05% = Dead
- 06 - 20% = Very Poor
- 21 - 40% = Poor
- 41 - 60% = Fair
- 61 - 80% = Good
- 81 - 100% = Exceptional

² Based on the new 2018 *Guide for Plant Appraisal, 10th Edition*.

Tree Preservation Suitability (TPS) Ratings Based Solely on Each Tree's Merits: (Not Associated With Proposed Site Plan Construction-Related Work)

TPS Rating	Definition
VG Very Good	Exceptional current season's live twig density and twig extension ("TDE"). Tree provides multiple benefits to the property and users of site (e.g. shade, wildlife, patriarch tree, key landscape element or specimen in front yard, etc.). Trees with a minimum overall condition rating of 85% out of 100% points possible as determined by the City Arborist. Tree structure vertically-oriented with little or no lopsidedness or other architectural defects. Species with long life expectancy, and/or good resistance to most pests and diseases. Tree in a position that is correct for its sun/shade/drainage needs. Tree not damaged by incorrect pruning. Redesign of applicant's proposed site work is warranted at any cost to preserve the root system and the above-ground portion of the tree.
G Good	Good TDE, with a 70% or better overall condition rating as determined by the City Arborist. Tree may be lopsided or leaning, but provides good benefit(s) to the property and users of the property (e.g. shade, wildlife, sight-line screening, etc.). Species with long life expectancy and/or good resistance to most pests and diseases. Tree located in a position that is correct in terms of its sun/shade/drainage needs. Tree may or may not have been correctly pruned in the past. Applicant's project team should seriously consider site plan redesign to work around the tree's root system and above-ground canopy.
M Moderate	Moderate TDE. Tree may be significantly damaged by past pruning. Tree may exhibit pest and disease issues that are not curable through current known treatments. Tree may exhibit non-correctable structural issues. Species may be relatively short-lived or have a limited remaining useful life expectancy. Placement of tree may be incorrect in terms of high voltage power line conflicts, slow drainage, sun/shade requirements, etc. Consider allowing the applicant to remove the tree to achieve proposed site work goals.
P Poor	Tree has potentially serious structural and/or health issues that are not correctable through current known treatments (e.g. a very large diameter girdling root, a serious bark inclusion at a large diameter mainstem fork that is prone to catastrophic splitout, etc.). Tree may be growing vertically up into high voltage electric wires. Tree may be a species that is undesirable in terms of its low relative wood strength, short lifespan (e.g. a colonizing species such as white alder), etc. Tree may be at the end of its expected lifespan, and is in a spiral of decline. Tree root system may be in conflict with existing buildings, infrastructure, etc. Staff is encouraged to allow applicant to remove tree to achieve site plan work goals (though the tree may still be useful as a property boundary wildlife tree for raptors, songbirds, raccoons, foxes, etc.).
VP Very Poor	Roughly 0% to 20% overall condition rating. Tree in active declining stage with no possibility of recovery in terms of health (vigor) or structure. Tree may have a visible high risk of tree part failure and impact with life and/or property. Tree has little remaining useful lifespan. Removal of tree is encouraged as needed to achieve site plan work goals. Tree may still have some use as a sight-line screen and/or wildlife element if retained near the property boundary or far from residential structures and roadways.

Tree Maintenance and Protection Acronyms & Standards:

RPZ: Root protection zone fence, chain link, with 2" diameter iron posts driven 24" into the ground, 6 to 8 feet on center max. spacing. Alternative material: chain link fence panels set over concrete block-type footings, with the fence panels wired to steel pins pounded 24 inches into the ground at both ends of each panel.

RB: Root buffer consisting of wood chip mulch laid over existing soil as a 12 inch thick layer, overlain with 1 inch or greater plywood strapped together with metal plates. This root buffer or soil buffer should be placed over the entire width of the construction corridor between tree trunks and construction.

RP: Root pruning. Prune woody roots measuring greater than or equal to 1 inch diameter by carefully back-digging into the soil around each root using small hand tools until an area is reached where the root is undamaged. Cleanly cut through the root at right angle to the root growth direction, using professional grade pruning equipment and/or a Sawzall with wood pruning blade. Backfill around the cut root immediately (same day), and thoroughly irrigate the area to saturate the uppermost 24 inches of the soil profile.

BDRP: Back-dig root pruning: Hand-dig around the broken root, digging horizontally into the open soil root zone until a clean, unbroken, unshattered section of the root is visible. Proceed as per 'root pruning'.

RCX: Root crown excavation. Retain an experienced ISA-Certified arborist to perform careful hand-digging using small trowels or other dull digging tools to uncover currently-buried buttress root flares. Digging shall occur between trunk edge and at least two (2) feet horizontal from trunk edge. The final soil elevation will be at a level such that the tree's buttress roots visibly flare out from the vertical trunk.

TB: Trunk buffer consists of 20-40 wraps of orange plastic snow fencing to create a 2 inch thick buffer over the lowest 8 feet of tree trunk (usually takes at least an entire roll of orange fencing per each tree). Lay 2X4 wood boards vertically, side by side, around the entire circumference of the trunk. Secure buffer using duct tape (not wires).

F: Fertilization with slow-release Greenbelt 22-14-14 tree formula, as a soil injection application using a fertilizer injection gun. This brand and formulation is commonly used by reputable tree care companies in the Bay Area. Apply at label rate and injection hole spacing.

M: 4-inch thick layer of chipper truck type natural wood chips (example source: Lyngso Garden Supply, self pick-up). Do not use bark chips or shredded redwood bark.

W: Irrigate using various methods to be determined through discussion with General Contractor. Irrigation frequency and duration to be determined through discussion and/or per directions in this report. Native oak species typically require 1x/month irrigation, while other tree species tend to prefer 2x/month or 4x/month moderate to heavy irrigation during construction.

P: Pruning per specifications noted elsewhere. All pruning must be performed only under direct site supervision of an ISA Certified Arborist, or performed directly by an ISA Certified Arborist, and shall conform to all current ANSI A300 standards.

MON: A Project Arborist must be present to monitor specific work as noted for each tree.

12.0 Attached: Tree Location & Protection Fence Map Mark-up

WLCA added the following color-coded items to this sheet for reference purposes:

- a. Black clouding outlines are shown around tree specimens to show approximate true-scale canopy dripline dimensions.
- b. Magenta highlighted zones indicate the CTA's suggested areas to preserve and protect as "Critical Root Zones" (CRZ). The actual CRZ of oak #53 is roughly 13 feet radius from trunk. However, given that the tree is a *Quercus lobata* specimen (a species that is extremely sensitive³ to construction damages such as root loss and grade changes), the CTA roughly doubled the CRZ distance to 25 feet radius offset from trunk to account for this sensitivity.
- c. Red dashed lines indicate optimal routing for chain link root protection zone (RPZ) fencing.

The fencing around oak #53 is not shown as bounding the existing magenta root protection zone, since it is assumed that the driveway will be allowed to remain as-is during construction to act as a type of ground protection and root zone "buffer". If the drive is to be demolished in the first phase (demolition phase), then fencing will need to be placed around the entire magenta colored area indicated on the CTA's tree map to avoid damage to the root system in that area.

The fencing around redwood #54's root zone is "post-demolition" fencing that will be erected immediately after the existing older residence is removed from the magenta colored area indicated on the CTA's map markup. The purpose of this particular fence is to protect and preserve lateral fine roots and larger woody roots that are assumed to be growing laterally westward under the existing residence to be demolished in the area west of the tree, which is the area considered to be the tree's "Critical Root Zone" (CRZ) that must remain as a no-dig, no-impact zone.

13.0 Attached: Tree Appraisal (Valuation) Worksheet Using the New 2018 *Guide for Plant Appraisal*

An appraisal worksheet (Excel format) is attached to the end of this report, and includes fully transparent calculations based on the new 10th edition of the *Guide for Plant Appraisal*. The specific protocol used for this valuation is the "Trunk Formula Technique" (TFT), which is basically an entirely new system of tree valuation with calculations and multiplication factors that were not previously used in past iterations of the Guide.

³ Matheny and Clark. 1998. *Trees and Development*. Page 176.

This statement is also based on the CTA's 20 years of professional experience with valley oak specimens on construction sites throughout the Bay Area.

SHANNON ROAD
(50' WIDE)

Yellow =
trunk wraps

Red dashing =
Chain link root
protection zone
fencing
(RPZ)

Smoke tree #55
(Location Approx.)

Magenta highlight = Town Arborist's suggested Critical Root Zone (i.e. "no dig zone") where roots need to be preserved and protected under the existing older concrete driveway to be demolished.

SHADY VIEW LANE
(60' WIDE)

Magenta area west of redwood #54
Critical Root Zone that should be
maintained as a "no-dig" zone (i.e. no pool excavation)

Actual approx. canopy driplines
noted in black clouding

California valley oak #53 valued at
\$28,500.

Assume the oak root system in this red highlighted
area is semi-intact but "compromised"

Relocate proposed joint trench and two separate storm drain
trenches to outside of this Root Protection Zone Fence (RPZ) and
outside of the root zone area that exists under the old concrete
driveway highlighted in magenta.

Double-stem
neighbor-owned
coast redwood #54
valued at \$62,600.

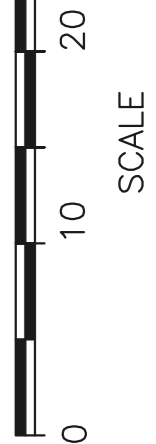
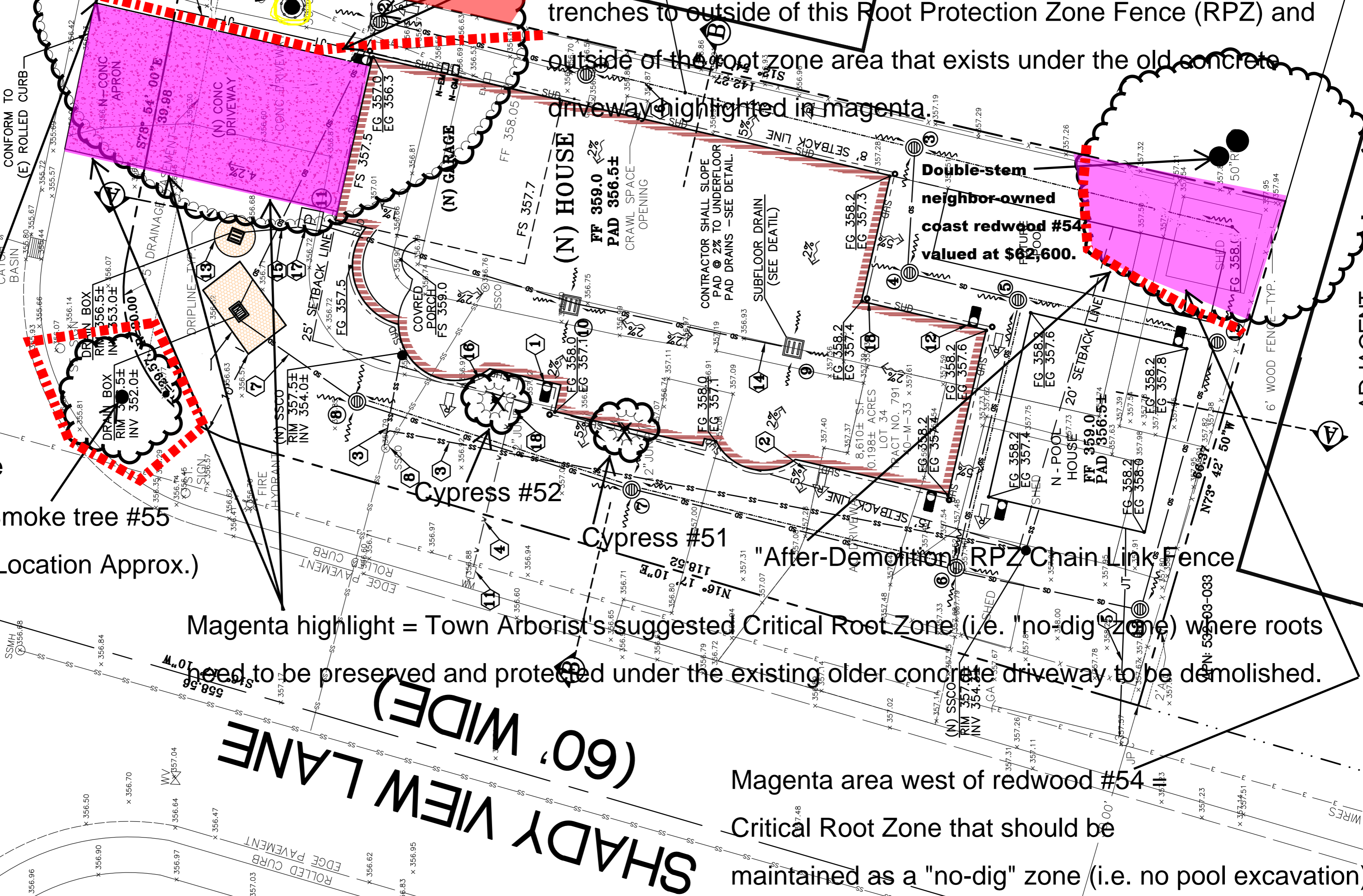
Cypress #51

Cypress #52

"After-Demolition" RPZ Chain Link Fence

ADJACENT
HOUSE
LOCATION

GRASSY SWALE NOTE:
MAINTAIN MIN. 3' FROM
BUILDING FACES TO
CENTERLINE OF SWALE





Valuation Appraisal Worksheet Based on *Guide for Plant Appraisal, 10th Edition (2018)*
"Functional Replacement Method / Trunk Formula Technique"

1/31/2019

16336 Shady View Lane, Los Gatos, California

Tree Tag #	Name (Initials)	WCISA Species Group Classification Booklet Page	Health (Weighted 0.15)	Structure (Weighted 0.70)	Form (Weighted 0.15)	Overall Condition Rating (OCR) "Weighted Method"	Diameter Inches at 4.5 ft. Above Grade	Depreciation Factors		WCISA Species Group Number	Trunk Square Inches for Replacement-Size Specimen of This Species	Average SF Bay Area Cost of 24 Inch Box Tree (2019)	Line 9	Line 10	Line 11	Rounded-off Appraised Values	
								Functional Limitations	External Limitations				(UTC) Unit Tree Cost per Sq Inch (M Divided by L)	Trunk Area (TA) ((dia. x dia.) x 0.785)	Basic Functional Replacement Cost (BFRC) = (OxN)		Depreciated Functional Replacement Cost (DFRC) = PxGxixJ
51	Cs	12	0.75	0.7	0.9	74%	18	80%	90%	3	3.8	\$250.00	\$65.79	254.34	\$ 16,732.89	\$ 8,885	\$8,900
52	Cs	12	0.75	0.7	0.9	74%	18	80%	90%	3	3.8	\$250.00	\$65.79	254.34	\$ 16,732.89	\$ 8,885	\$8,900
53	QI	31	0.87	0.68	0.9	74%	26.4	70%	90%	2	2.24	\$250.00	\$111.61	547.11	\$ 61,061.79	\$ 28,525	\$28,500
54	Ss	34	0.85	0.7	0.78	73%	Multistem (estimated 45" and 45") Neighbor Tree	75%	80%	4	4.75	\$250.00	\$52.63	2700.00	\$ 142,105.26	\$ 62,626	\$62,600
55	Cc	11	0.8	0.45	0.8	56%	Multistem 5/5/4/4/3/3/3"	60%	90%	2	2.24	\$250.00	\$111.61	110.00	\$ 12,276.79	\$ 3,679	\$3,680



Walter Levison
CONSULTING ARBORIST

Valuation Appraisal Worksheet Based on *Guide for Plant Appraisal, 10th Edition (2018)*
"Functional Replacement Method / Trunk Formula Technique"

1/31/2019

16336 Shady View Lane, Los Gatos, California

Tree Tag #	Name (Initials)	WCISA Species Group Classification Booklet Page	Health (Weighted 0.15)	Structure (Weighted 0.70)	Form (Weighted 0.15)	Overall Condition Rating (OCR) "Weighted Method"	Diameter Inches at 4.5 ft. Above Grade	Depreciation Factors		WCISA Species Group Number	Trunk Square Inches for Replacement-Size Specimen of This Species	Average SF Bay Area Cost of 24 Inch Box Tree (2019)	Line 9 (UTC) Unit Tree Cost per Sq Inch (M Divided by L)	Trunk Area (TA) ((dia. x dia.) x 0.785)	Line 10 Basic Functional Replacement Cost (BFRC) = (OxN)	Line 11 Depreciated Functional Replacement Cost (DFRC) = PxGxIxJ	Rounded-off Appraised Values
Notes: (NEWLY REVISED) Overall condition rating range per the new 10th edition of <i>Guide for Plant Appraisal (2018)</i> : Excellent: 81-100% Good: 61-80% Fair: 41-60% Poor: 21-40% Very Poor: 6-20% Dead: 0-5%																	
															Total Appraised Value of All Study Trees	\$112,580	

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