

**Assessment of Eight (8) Protected-Size Trees  
At and Adjacent to  
15602 Benedict Lane  
Los Gatos, California**

Prepared for:  
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Field Visit:  
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2/1/2022

Report by CTA  
2/7/2022

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## 1.0 Summary

- a. Below is a matrix style overview of protected-size trees (non-exempt species, 4-inches diameter at 4.5 feet above grade). In the table, the CTA (Contract Town Arborist) has outlined expected impacts to each tree, along with suggestions for adjustments to the plan set (if applicable) that will optimize tree survival over the long term.

Mitigation replacement rate and size is noted for each tree in the case that removal or damage to trees occurs.

Note: Only trees within relatively close proximity of proposed work are included in this tree study (e.g. tree trunks located between approximately zero and 30 linear feet of current proposed new grading, utility trenching, excavation, haul routes, landscaping, etc. as shown on proposed plans, and trees with canopy driplines that encroach over the subject property lot line.

Adjacent to this site (15602 Benedict Lane), there are various “exempt” trees such as privet specimens along the south boundary area, on neighbor property, near to survey trees #34 and #35, that were appropriately excluded from this CTA tree study. Similarly, there are a large number of fern pine (*Podocarpus gracilior*) specimens located along the west edge of the neighbor property, with canopies that slightly encroach into the 15602 Benedict site project area, which were also excluded from the study, given that they were small diameter trees in the +/- 3” to 4” diameter trunk class (not verified, not accessible), growing east of the property line wooden fence, assumedly with irrigation, arranged in a dense hedge formation on private property in an area that is not accessible for close inspection.

### New Staff Protocols 2021 Onward / High Risk Trees & Extreme Risk Trees & Dead Trees

Per my communications with Town Planning Division Staff in 2021, all trees with a TRAQ risk rating of “high” or “extreme”, and all trees in “dead” (i.e. 0 to 5% overall condition ratings) are allowed to be removed as no-fee removals, without any canopy replacement fees or plantings required, when a site is undergoing entitlement review. The reference for this no-fee/no-replacement removal standard is tree ordinance section 29.10.0985.

Table 1.0(a) (REFER TO THE CTA’S TREE MAP MARKUP WHEN REVIEWING THIS MATRIX)

**Note that this property at 15602 Benedict Lane is slightly under 10,000 square feet, and has the option to mitigate per the “single family residence option” by using smaller mitigation tree plantings of 15 gallon size, rather than the standard 24” box size.**

Line Number	Tree Tag Number	Common Name	Large Protected Tree (LPT)?	Appraised Value	Site plan changes or restrictions required to reduce impacts to “less than significant”	Replacement Rate Per Canopy Lost	Replacement Size Tree
1	31	Coast live oak	No	\$1,490.	No changes necessary if fencing is erected along edge of proposed new driveway footprint.	3	15 gallon or 24” box
2	32	Coast live oak	No	\$520.	No changes necessary if fencing is erected along edge of proposed new driveway footprint.	3	15 gallon or 24” box

Line Number	Tree Tag Number	Common Name	Large Protected Tree (LPT)?	Appraised Value	Site plan changes or restrictions required to reduce impacts to "less than significant"	Replacement Rate Per Canopy Lost	Replacement Size Tree
3	33	Deodar cedar	No	\$32,200.	No changes necessary if fencing is erected along edge of proposed new driveway footprint.	6	24" box
4	34	Coast live oak	No	\$40.	This is actually a "tall stump" due to severe topping pruning that was performed to essentially remove the entire tree down to a stump of 9 feet elevation, which then grew slightly to a height of 14 feet.  No changes necessary to plans, if fencing erected along edge of proposed new driveway footprint.	2	15 gallon or 24" box
5	35	Coast live oak	No	\$3,630.	No changes necessary to plans, if fencing erected along edge of proposed new driveway footprint. The proposed new driveway will encroach to just outside of the tree's "critical root zone" calculated at 6 x trunk diameter as a horizontal offset radius where no activity should theoretically occur, to maintain tree stability.	3	15 gallon or 24" box

Line Number	Tree Tag Number	Common Name	Large Protected Tree (LPT)?	Appraised Value	Site plan changes or restrictions required to reduce impacts to "less than significant"	Replacement Rate Per Canopy Lost	Replacement Size Tree
6	36	Coast live oak	No	\$5,100.	<p>Critical root zone is 6 x diameter, which is 6 x 17" = 8.5 feet as an absolute no activity zone for stability preservation for the tree. Health preservation requires usually 1.5 x the CRZ distance (approximately). This means that the proposed residence footprint at 6 feet from trunk edge is well inside the CRZ distance, violating the minimum recommended offset distance for construction. Also note that because the exterior work requires a construction buffer area of at least 4 or 5 horizontal feet around the edge of the proposed new residence, the actual distance of fencing from trunk edge is going to be ~2 feet offset from trunk edge, which will further negatively impact the tree's root system unless a soil protection buffer of geotextile and wood chips is piled up over the ground to further protect against foot traffic related soil compaction and/or machinery related soil compaction of the tree root zone.</p> <p><b>The CTA suggests pushing the residence to at least a total of 14 feet north offset from trunk edge so that fencing can be erected at 9 feet north of tree.</b></p>	4	15 gallon or 24" box
7	37	Pyracantha (shrub)	No	\$330.	<p>(Tree to be removed due to direct conflict with proposed residence footprint).</p> <p>Note that the applicant does <u>not</u> show replacement plantings in their submittal set of plans.</p> <p>It will be up to Staff whether the site project will be required to mitigate using on-site plantings (three trees), or will be allowed to pay in-lieu fees to some extent.</p>	3	15 gallon or 24" box

Line Number	Tree Tag Number	Common Name	Large Protected Tree (LPT)?	Appraised Value	Site plan changes or restrictions required to reduce impacts to "less than significant"	Replacement Rate Per Canopy Lost	Replacement Size Tree
8	38	Coast live oak	Yes	\$17,300.	<p>ROOF: Per the applicant's plans, the south (rear) elevation of the sloping roof will peak at 15'8", and slope down northward to 10'-0". Given that roofers will need at least 5 feet of additional head clearance to install the roof, this therefore effectively requires a "working height" of ~15 feet at the north end, and 21 feet elevation at the southwest portion of the tree #38 canopy.</p> <p>The CTA shot elevations of the tree #38 canopy using a hypsometer and found its elevations to be roughly between 12 feet and 17 feet in height above grade, with presence of a 6 inch diameter limb that extends westward over the proposed roof footprint.</p> <p><b>The entire 6 inch diameter limb extending westward over the proposed roof will need to be removed at its attachment point at 7 feet above grade on the tree #38 mainstem, to clear the roof and roofer activity. This is acceptable, and is not expected to have a significant negative effect on the tree's long term health or structure.</b></p> <p>CRITICAL ROOT ZONE VS. RESIDENCE FOUNDATION WORK:</p> <p>The critical root zone of tree #38 is 6 x 30" = 15 feet. The distance from trunk edge to new foundation of residence is roughly 12 feet, which means the encroachment will be 3 feet into the CRZ no-dig area. This is still OK, given that the tree's north, south, and east root zone quadrants will essentially remain as open soil intact. However, it will mean that <b>the applicant will be required to install a SOIL PROTECTION BUFFER between the RPZ chain link fencing and the new residence foundation, to prevent unnecessary soil compaction.</b> See the CTA's tree map for this graphic.</p>	10	24" box

**2017 Town of Los Gatos In-lieu fee equivalent = \$250 per each required 24" box mitigation tree planting not installed on the site.**

**(This project is on a lot that is slightly less than 10,000 square feet, and is allowed to use 15 gallon size trees for on-site replacement plantings. However, the value of each of those (smaller) mitigation plantings in terms of dollar value equivalency, is still \$250 per tree).**

## **1.0 (b) Summary of tree disposition and tree issues, based on the set of (revised) plans submitted to planning division in 2021:**

### **1. TREE IMPACTS / "MODERATE TO SEVERE" EXPECTED:**

**Trees #36 and #38** may experience moderate to severe negative impacts from proposed work, if the site plan is built out as currently shown on the applicant's plan set submitted to planning division.

To mitigate or offset some of the root loss associated with the current plan, the CTA suggests (assuming that both trees #36 and #38 are to be preserved):

- Pushing the proposed new residence to 14 feet north of the trunk edge of tree #36, such that fencing can be erected at 9 feet north of trunk edge.
- Installing a soil protection buffer between the tree #38 protection fence and the proposed new residence foundation edge, per the **green** highlighted strip shown on the CTA's tree map markup below at the end of this report.

Also note that this tree will require some pruning to clear the roof and roofer activity. **The limb required to be removed is a 6 inch diameter limb extending westward over the proposed roof footprint. The impact of this removal will be minor to moderate only. All pruning work will have to conform to the most current ANSI-A300 pruning standards, and either be performed by, or supervised directly (full-time supervision) by an ISA Certified Arborist.**

### **2. TREE IMPACTS / "MINOR" EXPECTED:**

**Trees #31, 32, 33, 34, and #38** are expected to remain with little or no negative impact from proposed new site plan construction work, if fencing is erected along the south edge of the proposed driveway footprint as indicated on the CTA's tree map markup as a heavy red dashed line.

### 3. TREE REMOVALS vs. REQUIRED MITIGATION / APPLICANT:

Value: The applicant is proposing to remove tree #37 (actually a shrub). The value of this tree in terms of Los Gatos canopy replacement requirement per planning division is installation of three (3) 15 gallon or 24" box size plantings on site with heavy irrigation, which is equivalent to  $\$250 \times 3 = \$750$ , per the standard \$250 valuation of a single tree planting installed at site.

Location: Given that the applicant does not have a landscape plan or an irrigation plan, it is assumed that they have not yet determined a location for this tree installation of three (3) 15 gallon or 24" box size trees.

Combo Mitigation: Planning Staff can either require the applicant to install three trees on site, or have the applicant pay a combination of in-lieu fees plus install on-site mitigation tree plantings.

Mitigation Planting Species: Typical trees used for mitigation plantings include such pest and disease resistant trees as 'Columbia' plane tree, 'Roberts' sycamore, coast live oak, Chinese pistache, Swan Hill fruitless olive, wilson's fruitless upright olive, silver linden (*Tilia tomentosa*), blue Atlas cedar, and deodar cedar.

### 4. 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. In the case of this site, with six trees being retained (\$30,000), the minimum \$25,000 bond amount would kick in as the bond amount.

## 2.0 Assignment & Background

Walter Levison, Contract Town Arborist (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 were tagged with numeric tags "31" through "38", affixed to the mainstem of each tree at roughly eye-level. These tag numbers are noted on the CTA's tree map markup attached to the end of this written report.

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 1.0.

Specific recommendations for tree maintenance and protection are outlined below in section 4.0.

Digital images of the trees archived by the CTA are included below in this report for reference of existing pre-project conditions.



The tree data table with detailed tree information based on the CTA's field assessment on 2/1/2022 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 measured using a digital Nikon forestry pro 550 hypsometer. Tree canopy spread was visually estimated.

The attached tree map mark-up prepared by the CTA was created using the applicant's site plan sheet A-00.01 dated September, 2021, marked up with various highlight coloration<sup>1</sup> as discussed in section 12.0.

The CTA reviewed the applicant's revised set of plan sheets from September, 2021.

### 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**.

<sup>1</sup> Adobe Pro was used to mark up the tree map. In order to "lock" the mark-ups, the CTA printed a PDF of the marked-up PDF sheet, which resulted on some loss of color intensity.

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](http://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 Arborist ("PA"):

#### Initial Signoff

It is suggested that a third party ASCA registered consulting arborist or ISA Certified Arborist with good experience with tree protection during construction be retained by the applicant, to provide pre-project verification that tree protection and maintenance measures outlined in this section of the arborist report are adhered to. Periodic (e.g. monthly) inspections and summary reporting, if required as a project condition of approval, are suggested in order to verify contractor compliance with tree protection throughout the site plan project. This person will be referred to as the project arborist ("PA"). The PA should monitor soil moisture within the root protection zones of trees being retained, using a Lincoln soil moisture probe/meter or equivalent. If required, inspection reports shall be sent to Ms. Jocelyn Shoopman, Associate Planner, at [rshoopman@losgatosca.gov](mailto:rshoopman@losgatosca.gov).

Sample wordage for a condition of approval regarding monitoring of tree protection and tree condition:

"The required protective fencing shall remain in place until final landscaping and inspection of the project. Project arborist approval must be obtained and documented in a monthly site activity report sent to the Town. A mandatory Monthly Tree Activity Report shall be sent at least once monthly to the Town planner associated with this project ([rshoopman@losgatosca.gov](mailto:rshoopman@losgatosca.gov)) beginning with the initial tree protection verification approval letter".

The PA is suggested to work with the project team to directly monitor a portion of the following items such as:

- a. Foundation work directly north of oak #36.
- b. Foundation work directly west of oak #38.

### 2. Project Team Pre-Project Clarifications or Changes Requested:

#### i. Residence Foundation / South Side of Residence:

The current proposed applicant plan shows the new residence foundation at 6 feet north of trunk edge of tree #36: a distance that is inside the critical root zone (CRZ) of the tree, calculated at 8.5 feet radius offset.

The CTA suggests that Staff consider requiring the applicant to push the new residence foundation to 14 feet north of trunk edge of oak #36, (if this tree is to be retained), in order that TPZ chain link fencing can be erected at 9 feet north of trunk edge, thereby bringing the fenced off root zone area to just north of the calculated critical root zone offset distance from trunk edge. This will also allow for creation of a 5-foot wide construction corridor between the TPZ fence and the new foundation where construction personnel can walk and perform work without being blocked or hindered by the fencing.

ii. Removal Mitigation Fees vs. On-Site Plantings:

Locations: Verify with the applicant the location(s) of the required on-site mitigation trees.

Species: Typical trees used for mitigation plantings include such pest and disease resistant trees as 'Columbia' plane tree, 'Roberts' sycamore, coast live oak, Chinese pistache, Swan Hill fruitless olive, wilson's fruitless upright olive, silver linden (*Tilia tomentosa*), blue Atlas cedar, and deodar cedar.

Irrigation: Verify irrigation type (should be high flow, with two (2) ½" diameter flood bubblers each emitting a minimum of 1.0 gallon per minute.

Removal fee for tree #37 is \$750, or installation of three (3) 15 gallon or 24" box size trees on site, or a combination of plantings and fees to be determined by Town Planning Staff.

3. Security Bond:

It is suggested that Town Staff condition this project on receiving security bond monetary funds from the applicant in the amount of **\$25,000**, as a hedge against potential decline or death of one or more of the survey trees to remaining on-site or off-site in close proximity to the proposed site plan project. Staff may choose to reduce this fee to a lesser amount. See table 1.0(a) for individual tree appraised values.

4. Trunk Buffer Wrap Type III Protection:

Prior to demolition commencement, install a trunk buffer around the lowermost 8 to 10 feet of the mainstems of **trees #31, 32, 34, 35, 36, 38**.

Wrap approximately 10 to 15 wraps of orange plastic snow fencing around the trunk between grade and 8 feet above grade to create a padding at least 1 to 2 inches thickness. Each tree will require at least one (1) entire roll of orange plastic snow fencing wrap.

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.

5. 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.



**Pre-construction fence: Per the red dashed lines on the tree map mark-up in the CTA's arborist report (routes may be subject to change, depending on the finalized alignments of work items).**

**Protection shall be at the farthest possible offset distances from trees #31, 32, 33, 34, 35, 36, 38.**

This fencing must be erected prior to any heavy machinery traffic or construction material arrival on site.

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 landscape plant and irrigation system installation to occur.**

6. 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:**

**NOTE: THE CTA IS NOT THE "PROJECT ARBORIST". The project arborist is a private arborist contracted by the applicant or applicant's team of professionals who then monitors the project and reports to Town of Los Gatos planning division on a monthly basis with tree condition and tree protection inspection reports.**

7. 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.

8. TREE MAINTENANCE / REQUIRED:

8.1. Retain an ISA certified arborist to perform or directly supervise pruning per the following specifications and per all of the most current ANSI A300 pruning standards:

8.1.1 TREE #31 PRUNING:

Raise the canopy of oak #31 to 14 feet to provide minimum vehicle airspace clearance.

8.1.2 TREE #32 PRUNING:

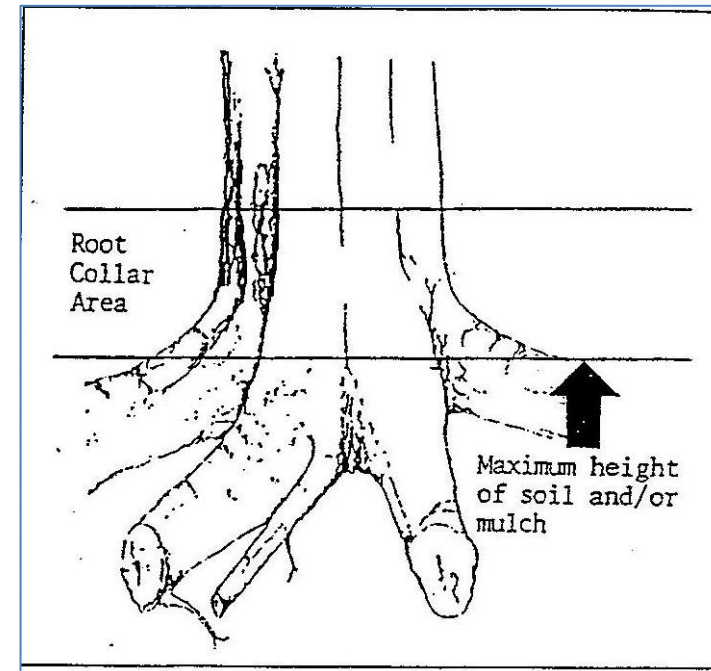
Raise the canopy of oak #32 to 14 feet to provide minimum vehicle airspace clearance.

8.1.3 TREE #36 PRUNING:

Remove branches and limbs to 2 inches diameter each on the north side of the oak #36 canopy, in order to clear vertical airspace to the proposed 15'8" finish roof elevation (this recommendation may not be needed, if the residence is pushed to 14 feet north of the trunk edge per the CTA's suggestion).

8.1.4 TREE #36 ROOT CROWN EXCAVATION:

Remove irrigation equipment, remove ivy, and remove soil, between zero (0) and 20 feet from the trunk edge of oak #36. See diagram at right for reference of correct hand-tool root crown excavation (RCX) finish height of soil in relation to buttress roots/root crown.



8.1.5 TREE #38 PRUNING: Remove one (1) 6 inch diameter limb that extends westward into the proposed finish roof area. Remove the limb at its attachment point on the main trunk at approximately 7 feet elevation above grade.

8.1.5 TREE #38 SOIL PROTECTION BUFFER:

Install a soil protection buffer between the oak #38 TPZ chain link fence and the new proposed residence foundation (i.e. between 7 feet and 12 feet west of the trunk edge of oak #38). See reference images below and right, showing various soil protection buffers on the CTA's past projects.

The minimum protection required is a layer of 6" to 12" thickness of coarse tree chipper truck type wood chips, laid down over a geotextile that is pinned down on bare soil (see image above right).

The standard heavy duty soil protection buffer is a layer of 12" thickness of wood chips, overlaid with full sheets of heavy duty exterior grade plywood strapped together using steel screw plates (see image at right).

Either the minimum spec or the standard heavy duty spec type of buffer is acceptable for this project.



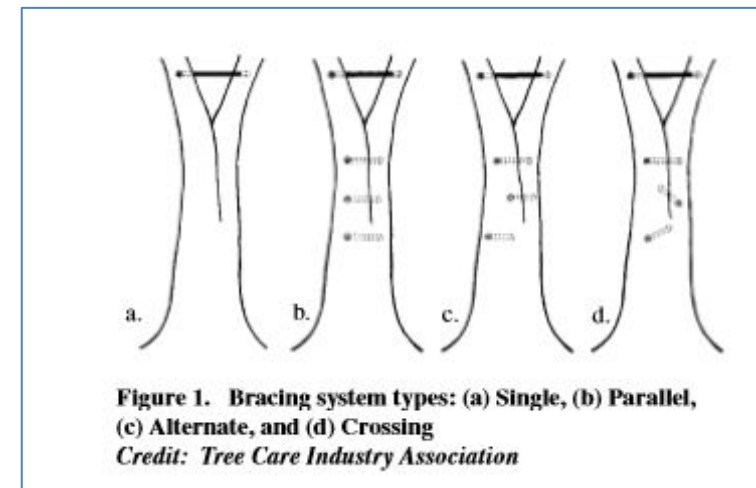
9. Maintenance of Trees / Optional:

The CTA suggests that the applicant consider optional installation of arborist cable systems and/or arborist through-bolt threaded brace rods in oak #38, as additional support systems for the tree's structure, given that there are multiple bark inclusion type forks at 5 to 8 feet elevation that reduce the tree's structure stability.

These types of support systems need to be installed by a qualified tree care company using the ANSI A300 standards for cable diameters, brace rod diameters, etc., to ensure the systems perform as they are supposed to.

Note that tree support systems such as cables, brace rods, and support posts are often false security, and may only work to slow down a failure of a tree limb or section of the tree. They cannot be considered full proof in terms of reducing risk of tree part failure and impact with persons or property. They should be considered risk reduction measures that have an unknown actual mitigation effect.

Right: sample of brace rod installation locations in a tree with a bark inclusion type narrow angle fork.



#### 10. Temporary Irrigation During Construction:

If and when directed to do so by the project arborist (PA), provide native coast live oak trees being retained on site with temporary periodic heavy irrigation during the construction period.

**Note that coast live oaks are dry summer regime adapted trees, and should only be irrigated on a construction site at the rate of 1x/month, at a distance as far as possible offset from the trunk (e.g. 20 feet from trunk).**

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 (see image at right).
- On-site water tank with gravity feed.
- Over-grade PVC piping with spray heads wired to rebar or other steel stakes (see image at right).



#### 11. New Plantings / Tree Installation Specs:

Ideally, **two (2) high flow type adjustable bubblers each emitting 1.0 to 2 gallons per minute (2GPM), depending on percolation rate of planting pit**, are set directly over the rootball of each single tree planting, and each tree is installed with two (2) wooden planting stakes (not the shipping stake), with a set of figure-8 Cinch Ties™. The diagram below illustrates correct form for a 24" box size tree planting pit and berm construction, per arboriculture Best Management Practices. The CTA marked up the original open-source diagram from Urban Tree Foundation (2014) to add the correct location for the ½" diameter flood bubblers and flex tubes set directly over the rootball.

Make sure to completely remove the shipping stake that is initially tied tightly against the trunk of each tree by the grower/nursery. This stake is only for transport, and cannot be left tied against the trunk. It must be completely removed from the trunk area in order to avoid causing damage to the tree trunk as it grows in girth.

The tree stakes are cut to just above the elevation of the Cinch-Ties to avoid abrasion between the stakes and the limbs and trunk during wind movement.

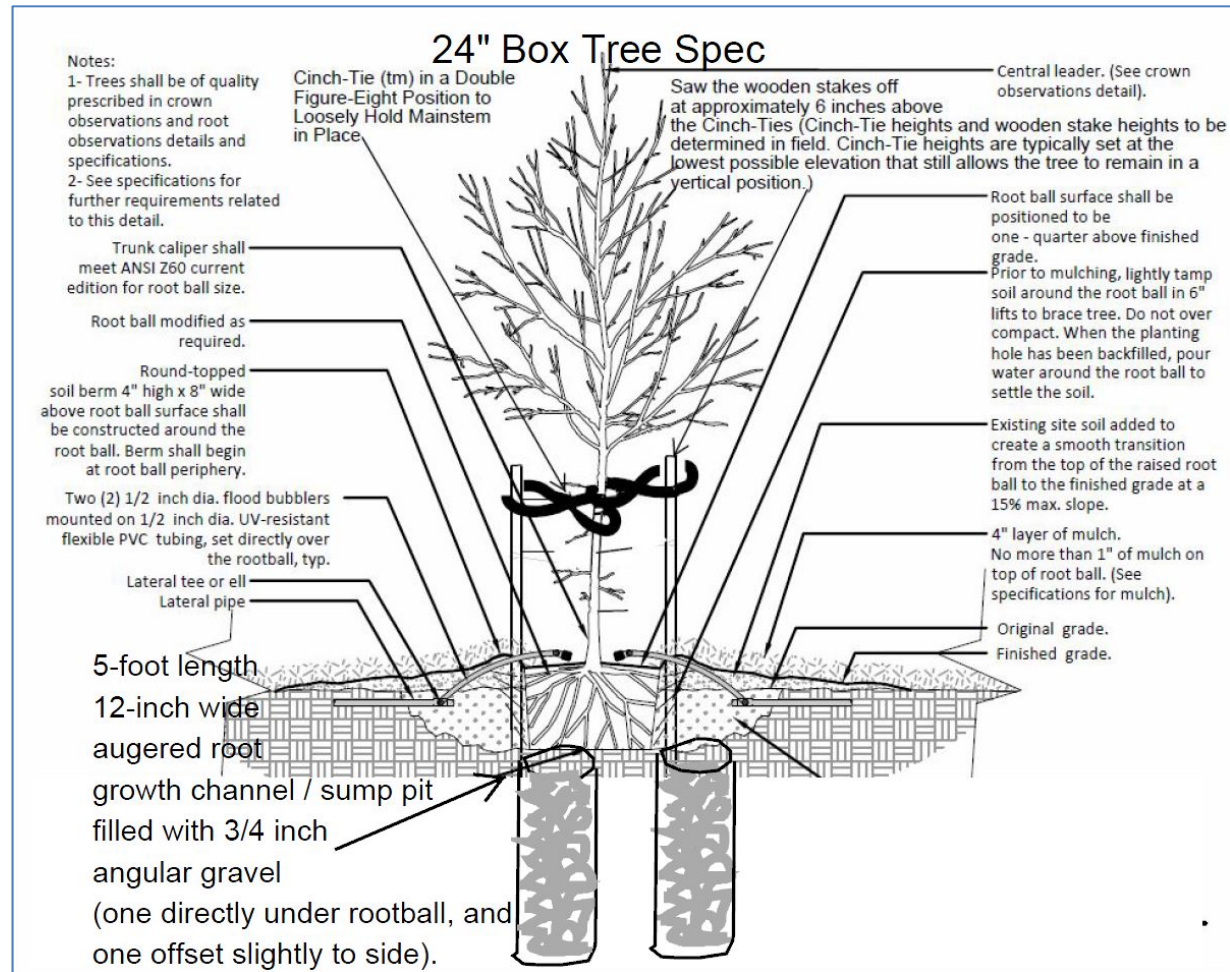
A watering berm consisting of site soil is formed around the edge of the rootball to force irrigation water to pool up directly over the rootball. The berm should be approximately 4 to 6 inches in height, and 8 to 12 inches in width, set directly over the rootball edge (see spec diagram below).



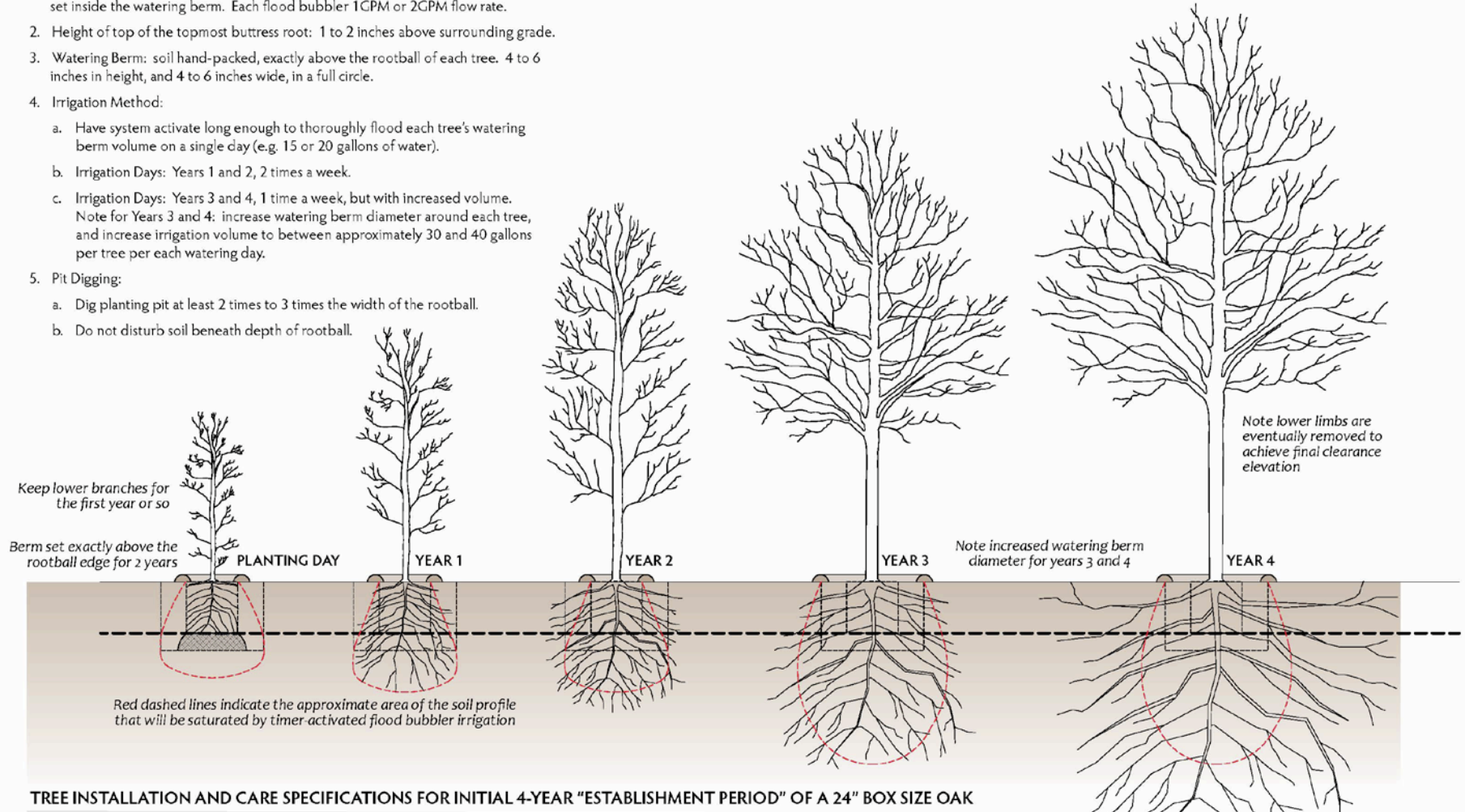
The spec image at right shows the rootball being set at 25% above surrounding finish grade elevation of the soil. This is for “poorly drained” soil situations where flooding of the planting pit may occur. Given that a large percentage of the south bay and peninsula planting sites contain clay based construction pad type soil that is very slow draining, this “poorly drained soil” specification should actually be considered the norm for most planting sites encountered in the Bay Area. At a very minimum, the rootball should be two to three inches raised above surrounding grade to encourage proper drainage away from the top of ball.

Also note that the spec image below shows the correct “shallow bowl” type of planting pit dig, where the pit is at least 3X to 4X the width of the tree rootball, (and only approximately 3/4X) the rootball depth, which means that the bottom of the rootball will be sitting securely on solid, non-decompacted parent soil, without threat of being destabilized or sinking down into a previously-dug pit depth deeper than the rootball depth. The purpose of this type of “shallow bowl” pit dig is to stabilize the rootball and prevent it from sinking, while also encouraging fast growth of lateral woody roots radiating outward from the rootball into the surrounding soil outside of the pit.

A second image is provided by the CTA, which is a planting and irrigation spec developed for the author’s private practice, indicating correct irrigation of a 24” box size tree over time in terms of volume, frequency, berm location, etc. for optimal growth development of the tree. This is the newest iteration of the planting specification, which now shows a recommended subdrain/root channel which is augered into the ground using a 12 inch diameter auger bore, for a distance of 5 feet depth below the bottom elevation of the planting pit:



1. Irrigation Feed: 1/2" diameter flex tubing with two flood bubblers per each tree, set inside the watering berm. Each flood bubbler 1CPM or 2GPM flow rate.
2. Height of top of the topmost buttress root: 1 to 2 inches above surrounding grade.
3. Watering Berm: soil hand-packed, exactly above the rootball of each tree. 4 to 6 inches in height, and 4 to 6 inches wide, in a full circle.
4. Irrigation Method:
  - a. Have system activate long enough to thoroughly flood each tree's watering berm volume on a single day (e.g. 15 or 20 gallons of water).
  - b. Irrigation Days: Years 1 and 2, 2 times a week.
  - c. Irrigation Days: Years 3 and 4, 1 time a week, but with increased volume. Note for Years 3 and 4: increase watering berm diameter around each tree, and increase irrigation volume to between approximately 30 and 40 gallons per tree per each watering day.
5. Pit Digging:
  - a. Dig planting pit at least 2 times to 3 times the width of the rootball.
  - b. Do not disturb soil beneath depth of rootball.



**TREE INSTALLATION AND CARE SPECIFICATIONS FOR INITIAL 4-YEAR "ESTABLISHMENT PERIOD" OF A 24" BOX SIZE OAK**

(c) Copyright 2020 Walter Levison, Dave Muffly, & Roma Design Group San Francisco

**RIGHT:** Proper installation of a new 24" box size tree with two (2) high flow type 1.0 GPM to 2.0 GPM (gallon-per-minute) flood bubblers seen inside a steeply-sloped watering berm built using site soil. The berm is built up directly over the rootball edge, which forces irrigation water directly downward into the rootball via gravity.

12. Temporary Irrigation During Construction (If Any):

To be determined by the project arborist (PA), which is not the CTA.

## 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 <sup>1</sup>	(Staff is using 24" box size as the Replacement Standard for SFR Projects as of 2016) <sup>2,4</sup>	Single Family Residential Replacement <sup>3,4</sup>
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

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

<sup>2</sup>Often, 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.

<sup>3</sup>Single 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.

<sup>4</sup>Replacement 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 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  
5/1999-5/2020 (21 years)
- ISA Certified Arborist #WC-3172
- 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. Arborist 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

### DIGITAL BADGES:

ISA CERTIFIED ARBORIST CREDENTIAL:

[https://certificates.isa-arbor.com/f1918723-df46-48cc-ace2-c12625530fec?record\\_view=true](https://certificates.isa-arbor.com/f1918723-df46-48cc-ace2-c12625530fec?record_view=true)



ISA TREE RISK ASSESSMENT QUALIFIED (TRAQ):



[https://certificates.isa-arbor.com/d180515f-ab75-440b-9c66-106005e3cf10?record\\_view=true#gs.hpb30w](https://certificates.isa-arbor.com/d180515f-ab75-440b-9c66-106005e3cf10?record_view=true#gs.hpb30w)



## 10.0 Digital Images



WLCA archived new digital images of the trees on 2/1/2022:

Tree Tag	Image	Tree Tag	Image
31		32	


Tree Tag	Image	Tree Tag	Image
33		34	

Tree Tag	Image	Tree Tag	Image
35		36	 <p data-bbox="1199 906 2055 966">Flux at the base of this oak (#36) appears to be caused by chronic moist or wet conditions at the base.</p> <p data-bbox="1199 997 2055 1089">Removal of irrigation, ivy, and soil to expose the root flare may allow the tree to normalize and reduce or stop flux exudation. See recommendations for details.</p>

Tree Tag	Image	Tree Tag	Image
37		38	 <p data-bbox="1213 1304 2045 1451">           Note the very tight fork conditions where mainstems are squeezed together in an unusual formation. The only viable maintenance solution for this situation is to install through-bolt type threaded brace rods per ANSI A300 specs, to attempt to mitigate risk to some degree. Arborist cable installations may or may not also be warranted.         </p>

Tree Tag	Image	Tree Tag	Image
38	 <p data-bbox="235 902 1045 935">Tree 38 has been overpruned, but is still a viable and important tree.</p>	38	



Tree Tag	Image	Tree Tag	Image
38	 <p>Looking northwestward at the open soil root zone between tree 38 trunk at right edge of image, and the existing residence footprint at the left edge of image.</p> <p>The proposed new residence will encroach to roughly 12 feet from the trunk edge. This means that if the current plan is built as proposed, the chain link TPZ/RPZ fencing would be erected at 7 feet out from the trunk of the tree, in order to leave a 5 foot wide construction corridor between fence and residence foundation edge.</p> <p>Soil protection buffer installation will be required, in order to avoid soil compaction from foot traffic and/or machinery use in the construction corridor. The buffer consists typically of a layer of wood chips 6" to 12" thickness, lain over a geotextile pinned down over the bare soil. This type of buffer helps mitigate soil compaction and root zone damage to woody and absorbing roots that extend out a great distance from the tree trunk, typically as far as 2x to 5x the canopy dripline radius.</p>	---	-----

## 11.0 Tree Data Table

**NOTE 1:** Fruit and nut trees measuring less than 18” diameter (total of all mainstems) both on the site and on adjacent neighbor properties were excluded from this study 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	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)lave 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	SUGGESTED ROOT PROTECTION FENCE RADIUS (Ft.)	MAINTENANCE AND PROTECTION CODES
31	<i>Quercus agrifolia</i> NEIGHBOR TREE	Coast live oak	13.2	--	--	13.2	25/18	50/40	45% Fair		X		Mod	West	West			Tree was hack pruned below PG&E high voltage wires. Needs to be pruned to raise canopy to 14 foot min. for vehicle clearance.	Fence off at the edge of the proposed driveway footprint.	TB, TPZ, prune to clear 14 feet of vertical airspace.
32	<i>Quercus agrifolia</i> NEIGHBOR TREE	Coast live oak	7.4	--	--	7.4	22/18	60/50	53% Fair		X		Mod	North	North			Harp form (bow form) canopy leans over driveway. Requires clearance pruning.	Fence off at the edge of the proposed driveway footprint.	TB, TPZ, prune to clear 14 feet of vertical airspace.
33	<i>Cedrus deodara</i> NEIGHBOR TREE	Deodar cedar	34.9	--	--	34.9	60/50	80/65	72% Good		X		Good					Has been pruned to clear the PG&E high voltage wires. Located in irrigated turf = good. Fence off at edge of driveway.	Fence off at the edge of the proposed driveway footprint.	-----
34	<i>Quercus agrifolia</i>	Coast live oak	6.7	--	--	6.7	14/7	10/10	10% Very Poor		X		Poor		North			Tree was topped at 9 feet, and grew again to 14 feet. Tree is basically a tall cut stump.	Fence off at the edge of the proposed driveway footprint.	TB, TPZ
35	<i>Quercus agrifolia</i>	Coast live oak	12.5	---	---	12.5	40/20	70/70	70% Good		X		Good	North	North			Extends far over driveway, but at a high elevation with no conflicts expected. Will need to protect root system with chain link fencing.	Fence off at the edge of the proposed driveway footprint.	TB, TPZ

Tree Tag Number	Genus & Species	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)lave 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	SUGGESTED ROOT PROTECTION FENCE RADIUS (Ft.)	MAINTENANCE AND PROTECTION CODES
36	<i>Quercus agrifolia</i>	Coast live oak	17.2	--	--	17.2	40/35	60/60	60% Fair		X		Poor if current site plan built. Moderate if site plan adjusted to push residence to 14 feet from trunk edge.	East	East			Black flux exudations from lower trunk bark indicate likely Phytophthora infection from wet or moist conditions caused by ivy, irrigation, and soil mound presence over root crown. Needs root crown excavation (RCX).  Note proposed south roof is 15'8", and canopy hangs to 12' at low point where conflicts. Need to prune to raise canopy elevation to 16 feet by cutting 1" and 2" dia branches.	Suggest push proposed residence to 14 feet from trunk edge, and fence off the tree at 9 feet from trunk edge.	TB, TPZ.  Remove ivy, remove irrigation within 20 feet of tree, and hand-dig out the soil around base of trunk to expose the natural flaring buttress roots ("root crown excavation" or "RCX").  Remove 1" and 2" diameter branches from north side of the canopy to clear airspace to 16 feet elevation above grade for new south roof finish elev.
37	<i>Pyracantha sp.</i> (shrub)	Pyracantha species	7.3	--	--	7.3	15/16	40/30	32% Poor	X			n/a					This is actually a shrub, but is still regulated by Town of Los Gatos.	To be removed.	Mitigate at 3:1 (install three (3) 15 gallon or 24" box size tree plantings on site per Town canopy replacement requirement.

Tree Tag Number	Genus & Species	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)lave 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	SUGGESTED ROOT PROTECTION FENCE RADIUS (Ft.)	MAINTENANCE AND PROTECTION CODES
38	<i>Quercus agrifolia</i> <b>LARGE PROTECTED TREE "LPT"</b>	Coast live oak	30.0	--	--	<b>30.0</b>	45/60	80/50	58%		X		Mod, if site plan built as proposed.					<p>Bark inclusion type forks noted at 5 feet to 8 feet elevation, which will require installation of arborist cabling and/or through-bolt brace rods per ANSI A300 standards to reduce risk of splitout, though in reality, the risk rating may not be able to be reduced to "low" even with installation of these items.</p> <p>Proposed new residence is within critical root zone of tree at 12 feet offset from trunk, but is OK if use a soil protection buffer between residence and TPZ fence line.</p> <p>Canopy extends over roof by 15 horizontal feet, at an elevation of 12 and 17 feet elevation, so need to remove one (1) 6" diameter limb at the attachment point where it extends westward from trunk at 7 feet elevation on trunk, to clear the new roof which will be 15'8" at high point.</p>	<p>Fence off at 7 feet west of trunk edge, and then install soil protection buffer between 7 feet and 12 feet west of trunk edge, as indicated on the CTA tree map in <b>green highlight</b>.</p>	<p>TB, TPZ, and install RB (root buffer/soil buffer) between 7 feet and 12 feet west of trunk edge.</p>

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## **Overall Tree Condition Ratings / Breakdown of Numeric Ranges (New, Per *Guide for Plant Appraisal, 10<sup>th</sup> Edition*):**

**00 - 05% = Dead**

**06 - 20% = Very Poor**

**21 - 40% = Poor**

**41 - 60% = Fair**

**61 - 80% = Good**

**81 - 100% = Exceptional**

## Tree Conservation Suitability (TCS) Ratings<sup>2</sup>

A tree's suitability for conservation is determined based on its health, structure, age, species and disturbance tolerances, proximity to proposed cutting and filling, proximity to proposed construction or demolition, and potential longevity, using a scale of good, fair, or poor (Fite, K, and Smiley, E. T., 2016). The following list defines the rating scale. Note that if proposed site work can be offset to farther linear distances from a tree's trunk edge, a tree's TCS rating may be elevated by one rating tier, given that there would be a corresponding reduction in expected future root zone impacts.

TPS Ratings	Range of values	
<b>Good</b>	<b>80-100</b>	Trees with good health, good structural stability and good expected longevity after construction.
<b>Moderate</b>	<b>60-79</b>	Trees with fair health and/or structural defects that may be mitigated through treatment. These trees require more intense management and monitoring, before, during, and after construction, and may have shorter life expectancy after development.
<b>Poor</b>	<b>&lt;59</b>	Trees are expected to decline during or after construction regardless of management. The species or individual may possess characteristics that are incompatible or undesirable in landscape settings or unsuited for the intended use of the site.

### TCS Ratings Worksheet Factors (Total Possible: 100 Points)

<b>Health (1-15)</b>
<b>Root Cut/Fill Distance from Trunk (1-15)</b>
<b>Structure Defects (1-15)</b>
<b>Construction Tolerance of the tree species (1-15)</b>
<b>Age relative to typical species lifespan (1-10)</b>
<b>Location of construction activity (1-10)</b>
<b>Soil quality/characteristics (1-10)</b>
<b>Species desirability (1-10)</b>

<sup>2</sup> Derived from Fite and Smiley, 2016. *Best Management Practices: Managing Trees During Construction, 2<sup>nd</sup> Edition*. International Society of Arboriculture.

## Tree Maintenance and Protection Codes Used in Data Table:

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 lain 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.

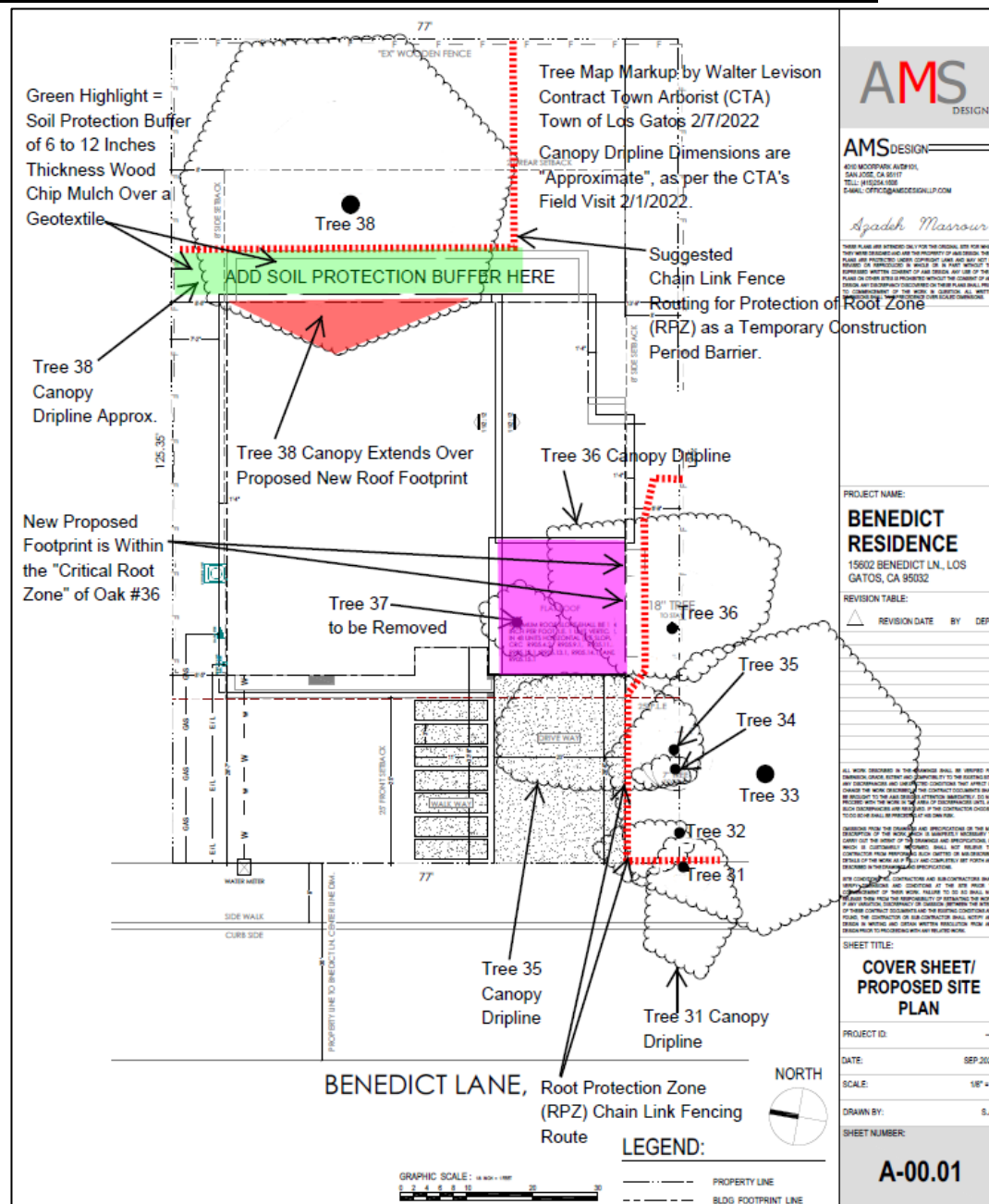
## 12.0 Tree Location & Protection Fence Map Mark-up

The CTA marked up the applicant's sheet A-00.01 "Proposed Site Plan" by AMS Design, dated September, 2021.

The markups added to the applicant's document include:

- Numeric tree tag numbers in large font size.
- Approximate canopy driplines shown in true scale, in relation to proposed new work.
- Purple highlight = proposed new residence massing inside the tree #36 critical root zone. Possible decline/death of tree if built out at this location.
- Green highlight = Author's suggested area to install a 6" to 12" thick soil protection buffer between the protective fence around tree #38, and the foundation edge of the proposed new residence, to prevent unnecessary soil compaction in the area of the tree #38 root zone where horizontally woody roots extend to great distance away from the trunk.
- Red highlight = Canopy dripline of tree #38 encroachment over the proposed new finish roof footprint.
- Red dashed heavy lines = the CTA's suggested root protection zone (RPZ) chain link fence routing for protection of horizontally-extended woody roots. The routing indicated is non-optimal, and would normally be routed at 15 to 25 feet radius offset from the trunk edge of each tree being retained to optimize tree survival and tree stability. Some redesign is recommended if trees #36 and #38 are to be retained in their current condition ratings.

## 13.0 Attached: CTA Tree Appraisal Worksheet per 10<sup>th</sup> Edition Guide for Plant Appraisal







Valuation Appraisal Worksheet Based on *Guide for Plant Appraisal, 10th Edition* , 2nd Printing (2019)

"Functional Replacement Method / Trunk Formula Technique"

15602 Benedict Lane, Los Gatos, California 2/7/2022

Tree Tag #	Name (Initials)	WCISA Speces 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	Trunk Area (TA) ((dia. x dia.) x 0.785)	Line 10	Line 11	Rounded-off Appraised Values
								Functional Limitations	External Limitations				(UTC) Unit Tree Cost per Sq Inch (M Divided by L)		Basic Functional Replacement Cost (BFRC) = (OxN)	Depreciated Functional Replacement Cost (DFRC) = PxGxIxJ	
31	Qa	30	0.5	0.4	0.7	46%	13.2	40%	90%	3	3.8	\$250.00	\$65.79	136.78	\$ 8,999	\$ 1,490	<b>\$1,490</b>
32	Qa	30	0.6	0.5	0.5	52%	7.4	40%	90%	3	3.8	\$250.00	\$65.79	42.99	\$ 2,828	\$ 524	<b>\$520</b>
33	Cd	8	0.8	0.65	0.9	71%	34.9	80%	90%	3	3.8	\$250.00	\$65.79	956.14	\$ 62,904	\$ 32,156	<b>\$32,200</b>
34	Qa	30	0.1	0.1	0.1	10%	6.7	20%	90%	3	3.8	\$250.00	\$65.79	35.24	\$ 2,318	\$ 42	<b>\$40</b>
35	Qa	30	0.7	0.7	0.8	72%	12.5	70%	90%	3	3.8	\$250.00	\$65.79	122.66	\$ 8,069	\$ 3,635	<b>\$3,630</b>
36	Qa	30	0.6	0.6	0.7	62%	17.2	60%	90%	3	3.8	\$250.00	\$65.79	232.23	\$ 15,279	\$ 5,074	<b>\$5,100</b>



Valuation Appraisal Worksheet Based on *Guide for Plant Appraisal, 10th Edition*, 2nd Printing (2019)  
 "Functional Replacement Method / Trunk Formula Technique"  
 15602 Benedict Lane, Los Gatos, California 2/7/2022

Tree Tag #	Name (Initials)	WCISA Speces 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	
								(UTC) Unit Tree Cost per Sq Inch (M Divided by L)	Basic Functional Replacement Cost (BFRC) = (OxN)				Depreciated Functional Replacement Cost (DFRC) = PxGxIxJ				
37		(This is not a "tree" listed in the western chapter ISA database of tree species. It is considered a "shrub").	0.4	0.3	0.4	33%	7.3	40%	90%	3	3.8	\$250.00	\$65.79	41.83	\$ 2,752	\$ 327	\$330
38	Qa	30	0.8	0.5	0.8	59%	30	70%	90%	3	3.8	\$250.00	\$65.79	706.50	\$ 46,480	\$ 17,277	\$17,300



Valuation Appraisal Worksheet Based on *Guide for Plant Appraisal, 10th Edition*, 2nd Printing (2019)  
 "Functional Replacement Method / Trunk Formula Technique"  
 15602 Benedict Lane, Los Gatos, California 2/7/2022

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
<p>Notes:</p> <p>1. OVERALL CONDITION RATING RANGE per the new 10th edition, 2nd Printing, of <i>Guide for Plant Appraisal</i> (2019):  <b>Excellent: 81-100%</b>  <b>Good: 61-80%</b>  <b>Fair: 41-60%</b>  <b>Poor: 21-40%</b>  <b>Very Poor: 6-20%</b>  <b>Dead: 0-5%</b></p> <p>2. MULTI STEM TREES: For trees with multiple mainstems, the total of all mainstem cross sectional areas was used as the "trunk area" calculation. For trees with mainstems larger than 30 inches diameter each, an "adjusted trunk area" or "ATA" value is used, from a table of values in the older 9th edition of the <i>Guide for Plant Appraisal</i>. The ATA value is smaller than the actual trunk diameter, and brings the tree's appraised dollar value down to a more "reasonable" level.</p> <p>3. NEIGHBOR TREES: For neighbor-owned trees that were not accessible by the CTA, the trunk diameter was estimated from a distance to the best of the CTA's ability.</p> <p>4. CONDITION RATINGS / APPRAISAL TABLE VS. DATA TABLE: Because of the new appraisal methods outlined in the 2019 edition of the <i>Guide for Plant Appraisal</i>, 10th edition 2nd printing, the condition ratings calculated in the "Overall Condition Rating / Weighted Method" column, and the data noted in the health and structure columns of this spreadsheet (with calculations embedded), may in some cases be slightly different from data in the CTA's arborist report tree data table. The CTA attempted to keep overall condition rating values as consistent as possible between the two data tables (i.e. the appraisal data table and the tree data table in the arborist report).</p>															<p><b>Total Appraised Value of the Study Trees Proposed to be Retained and Protected</b></p>		<p><b>\$60,610</b></p>

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