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Assessment of Twenty-Four (24) Protected-Size Trees at and adjacent to 16010 Winterbrook Los Gatos, California

Prepared for:
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110 E. Main Street
Los Gatos, CA 95030

Field Visit:
Walter Levison, Contract Town Arborist (CTA)
7/7/2020

Report by CTA
7/20/2020
Revised 8/12/2021

EXHIBIT 7

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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.

The CTA calculated the appraised value of each tree, 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). Appraised values can also be used to determine damage fees if trees are determined during or after construction to have been damaged such that mitigation is required.

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 onto the subject property.

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

Line Number	Tree Tag Number / Common Name	Expected Tree Disposition	Large Protected Tree (LPT)? Tree Conservation Suitability Rating (TCS)?	Appraised Value	Suggested Changes to Applicant's Proposed Plans to Boost Tree Conservation Suitability Rating (TCS) to "Moderate" or "Good"	Replacement Rate Per Canopy Lost	Replacement Size Tree
1	31 Valley oak	Retain with impacts.	Poor (due to proposed construction)	$4,170.	Modify proposed gate, proposed walkway, and proposed edging/paver restraint to allow for better root zone preservation.	($250 per each 24" Box) X 3 = $750.	15-gallon or 24" Box
2	32 Coast live oak	Retain	Poor (due to proposed retaining wall)	$6,900.	Modify proposed retaining wall alignment to increase area of root preservation, and/or use a "discontinuous wall footing" type that will allow for an over-grade trenchless type footing, with vertical piers spaced as far as possible on-center.	$ 250 X 4 = $1,000.	15-gallon or 24" Box

Line Number	Tree Tag Number / Common Name	Expected Tree Disposition	Large Protected Tree (LPT)? Tree Conservation Suitability Rating (TCS)?	Appraised Value	Suggested Changes to Applicant's Proposed Plans to Boost Tree Conservation Suitability Rating (TCS) to "Moderate" or "Good"	Replacement Rate Per Canopy Lost	Replacement Size Tree
3	33 Valley oak	Remove	Poor (due to proposed road renovation with new edge restraints and base excavation prep).	$1,130.	(To be removed).	$250 X 3 = $750.	15-gallon or 24" Box
4	34 Coast live oak	Retain	Poor (due to proposed retaining wall construction)	$2,630.	Push proposed retaining wall alignment to at least 10 feet offset from trunk edge.	$250 X 3 = $750.	15-gallon or 24" Box
5	35 Coast live oak	Retain	Poor to Mod (due to pruning required to clear the driveway airspace)	$3,180.	Retain a tree care company to provide ANSI A300-compliant pruning services to clear the proposed fire truck turnaround airspace and driveway airspace (14 feet above grade).	$250 X 3 = $750.	15-gallon or 24" Box
6	36 Coast redwood	Retain	Good	$17,900.	Tree is offset adequately to allow for good root zone preservation, as long as a robust chain link fence root protection zone (RPZ) is established along the west side of the proposed new retaining wall, with silt fence attached to prevent "slumping" of soil downhill into the RPZ.	$250 X 4 = $1,000.	15-gallon or 24" Box
7	37 Catalina Island cherry	Retain	Poor to Mod	$1,870.	Push proposed new retaining wall and fire truck turnaround footprint a few feet farther north than currently proposed, in order to increase the linear offset radius between wall edge and trunk edge.	$250 X 3 = $750.	15-gallon or 24" Box

Line Number	Tree Tag Number / Common Name	Expected Tree Disposition	Large Protected Tree (LPT)? Tree Conservation Suitability Rating (TCS)?	Appraised Value	Suggested Changes to Applicant's Proposed Plans to Boost Tree Conservation Suitability Rating (TCS) to "Moderate" or "Good"	Replacement Rate Per Canopy Lost	Replacement Size Tree
8	38 Coast live oak	Retain	Mod	$600.	(No changes to plans required. Fence off per CTA's tree protection map markup).	$250 X 3 = $750.	15-gallon or 24" Box
9	39 English walnut	Retain	Poor to Mod	$4,540.	(No changes to plans required. Fence off per CTA's tree protection map markup).	$250 X 6 = $1,500.	15-gallon or 24" Box
10	40 European olive	Removal per plan	----------	$6,800.	----------	$250 X 3 = $750.	15-gallon or 24" Box
11	41 Valley oak	Retain with impacts	Poor	$1,530.	Adjust proposed storm drain (SD) pipe trench route to at least 10 feet offset from trunk edge, or use trenchless technology such as directional bore to install. Otherwise, the tree will be considered a "removal", and fee payment will apply per amount at right.	$250 X 3 = $750.	15-gallon or 24" Box
12	42 Strawberry tree	Removal per plan.	----------	$2,110.	----------	$250 X 3 = $750.	15-gallon or 24" Box
13	43 European olive	Removal per plan.	----------	$5,700.	----------	$250 X 4 = $1,000.	15-gallon or 24" Box

Line Number	Tree Tag Number / Common Name	Expected Tree Disposition	Large Protected Tree (LPT)? Tree Conservation Suitability Rating (TCS)?	Appraised Value	Suggested Changes to Applicant's Proposed Plans to Boost Tree Conservation Suitability Rating (TCS) to "Moderate" or "Good"	Replacement Rate Per Canopy Lost	Replacement Size Tree
14	44 Coast live oak **NEIGHBOR TREE**	Retain	LPT Mod to Good	$12,000.	Use "discontinuous footing" for the new retaining wall build, in order to reduce root loss during installation of the wall. Fence off the root zone using chain link material, as far west as possible from the property line, in order to maximize root preservation, prior to start of the site construction project.	$250 X 4 = $1,000.	15-gallon or 24" Box
15	45 Shamel ash	Removal per plan.	Mod	$10,600.	----------	$250 X 10 = $2,500.	15-gallon or 24" Box
16	46 Valley oak	Removal per plan.	Poor	$910.	----------	$250 X 3 = $750.	15-gallon or 24" Box
17	47 Coast live oak	Removal per plan.	Poor	$870.	Push proposed pool surround (pavers) to farther north than currently shown (this will be a separate future entitlement application).	$250 X 3 = $750.	15-gallon or 24" Box
18	48 California pepper tree (non-native)	(The CTA suggests removal for safety purposes. Town may waive fee)	Poor	$460.	(To be retained by applicant, even though tree is currently in very poor overall condition rating).	$250 X 3 = ($750.) (Possible fee waive. Tree should be removed for safety purposes).	15-gallon or 24" Box

Line Number	Tree Tag Number / Common Name	Expected Tree Disposition	Large Protected Tree (LPT)? Tree Conservation Suitability Rating (TCS)?	Appraised Value	Suggested Changes to Applicant's Proposed Plans to Boost Tree Conservation Suitability Rating (TCS) to "Moderate" or "Good"	Replacement Rate Per Canopy Lost	Replacement Size Tree
19	49 The Patriarch Oak (Valley oak)	Retain, with impacts.	LPT Mod	$38,600.	Erect chain link tree protection fencing at approximately 25 feet offset from trunk edge. Applicant's most current grading and drainage plan dated 4/16/2021 shows retaining wall pulled out to approx. 16 feet from trunk edge, and turf/irrigation pulled out to approximately 25 feet from trunk edge, which roughly complies with the CTA's requests to improve the offset distances of proposed work in terms of distance from trunk edge. However, the landscape plan sheet dated 6/22/2021 shows the retaining wall pulled out to 25 feet from trunk edge of oak #49. It is not clear as to which of the above two plan sheets shows the correct proposed retaining wall location. Staff will need to verify this with the applicant's project team, as the discrepancy of 9 feet difference is significant.	$250 X 10 = $2,500.	15-gallon or 24" Box
20	50 Valley oak	Removal	TCS rating of Poor (due to conflict with proposed turf lawn area)	$3,240.	(To be removed).	$250 X 3 = $750.	15-gallon or 24" Box

Line Number	Tree Tag Number / Common Name	Expected Tree Disposition	Large Protected Tree (LPT)? Tree Conservation Suitability Rating (TCS)?	Appraised Value	Suggested Changes to Applicant's Proposed Plans to Boost Tree Conservation Suitability Rating (TCS) to "Moderate" or "Good"	Replacement Rate Per Canopy Lost	Replacement Size Tree
21	51 Valley oak	Retain	Poor to Mod	$2,260.	(No changes to plans required. Fence off per CTA's tree protection map markup).	$250 X 3 = $750.	15-gallon or 24" Box
22	52 Valley oak	Retain	Poor to Mod	$3,810.	(No changes to plans required. Fence off per CTA's tree protection map markup).	$250 X 3 = $750.	15-gallon or 24" Box
23	53 Coast live oak	Retain	Poor to Mod	$1,970.	(No changes to plans required. Fence off per CTA's tree protection map markup).	$250 X 3 = $750.	15-gallon or 24" Box
24	57 Coast live oak	Retain, with possible severe impacts.	Poor to Mod. Possible severe impact from proposed storm drain pipe and drywell work.	$660.	Suggest relocate proposed sanitary sewer pipe trench edge such that it is at least 6 lateral feet offset from the trunk edge, or use directional bore trenchless technology to avoid trenching altogether. If neither of the above two options can be feasibly performed, then the tree will be considered a "removal", and payment of the fee at right will apply.	$250 X 2 = $500.	15-gallon or 24" Box

2020-21 Town of Los Gatos In-lieu fee equivalent = $250 per each required 24" box mitigation tree planting not installed on the site.

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 area, including off-site trees on neighboring properties which were expected to be negatively impacted by the applicant's planned work.

The CTA assessed the entire set of revised November, 2020 plans. Tree data were collected and assembled by the CTA in section 11.0 of this report. Tree tags were affixed by the CTA to the mainstems of the on-site trees. These tags were racetrack shaped aluminum tags numbering in the range of "31" through "59" (twenty-four total trees assessed, with some tagging gaps due to trees removed in 2021 that were then removed from this 8/12/2021 version of the arborist report).

The CTA's recommendations in section 4.0 of this report are based on published information in various standard arboriculture texts, such as the series of *Best Management Practices* (BMP) companion publication (booklets) published by International Society of Arboriculture that are periodically updated over time. The series of BMP booklets accompany the ANSI-A300 USA standards for tree care used by U.S.-based tree care companies.

Additional supporting information includes digital images archived by the CTA as section 10.0, a tree map markup JPEG embedded as section 12.0, and an appraisal data worksheet attached as section 13.0.

The CTA utilized a forester's D-tape to determine tree mainstem (trunk) diameters at 4.5 feet above grade. The D-tape is a circumferential tape that converts actual trunk circumference to an averaged diameter in inches and tenths of inches. Tree heights were determined using a digital Nikon Forestry Pro 550 hypsometer. Tree canopy spread diameters were estimated visually or paced off. The tree canopy driplines shown as black clouding on the tree map markup are approximate only.

NEW INFORMATION FOR THE 8/12/2021 REPORT REVISION:

The CTA reviewed a new **4/16/2021** version of the grading and drainage plan sheet 4 of 6, in order to assess impacts to trees from proposed new sewer pipe trenching and storm drain pipe trenching near trees #41, 53, and #57. There were a few issues noted with this grading and drainage plan iteration:

- SCALE BAR: The scale bar on this updated 4/16/2021 version of the grading and drainage plan sheet is correct, and scales the same as the linear footage indications on the sheet.

- OAK GROVE: Five (5) oak trees #54, 55, 56, 58, and #59 were recently removed by the applicant, and have now been removed from this consulting town arborist (CTA) report at the request of Town Planning Staff.

- STORM DRAIN: The proposed storm drain routing as shown on the 4/16/2021 version of the grading and drainage plan is still considered unacceptable in terms of lateral offset distance between the trunk edges of tree #41. It is suggested that the applicant's project team consider relocating the storm drain to 10 feet offset from trunk edge, or use of horizontal directional bore "trenchless" technology to install the storm drain in order to avoid severe damage to this tree's root system. Otherwise, the tree will be considered a removal in terms of new construction-related impacts, and canopy replacement in-lieu fee payment will apply per Town Code.

- SANITARY SEWER: The proposed sewer pipe trench route as currently shown on the 4/16/2021 version of the grading and drainage plan will cause severe root loss to oaks #41 and #57. It is suggested that the project applicant push the pipe trench to at least 10 feet offset from trunk edge of oak #41, and 6 feet offset from trunk edge of oak #57, or use trenchless directional bore technology to avoid trenching altogether. Otherwise, these two native oak trees will be considered a removal in terms of new construction-related impacts, and canopy replacement in-lieu fee payment will apply per Town Code.

- OAK #49 VS. RETAINING WALL / SHOWN DIFFERENTLY ON TWO PLAN SHEETS: The applicant's landscape plan sheet revision date 6/22/2021 shows the proposed new retaining wall at 25 feet from trunk edge of oak #49, in compliance with the CTA's request that the wall be pulled out to 25 feet, along with proposed turf, proposed irrigation, and proposed landscape plant installations. However, the proposed grading plan dated 4/16/2021 still shows the proposed new retaining wall at roughly 16 feet from trunk edge: a discrepancy of 9 linear feet.

  Staff will need to verify with the applicant's team to determine which of these two plan sheets shows the correct retaining wall build location.

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), including fruiting olive trees.
    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.

At 16010 Winterbrook, olive trees #40 and #43 are considered protected-size trees per the Town tree ordinance, due to their multiple mainstem totals of greater than 18 inches each.

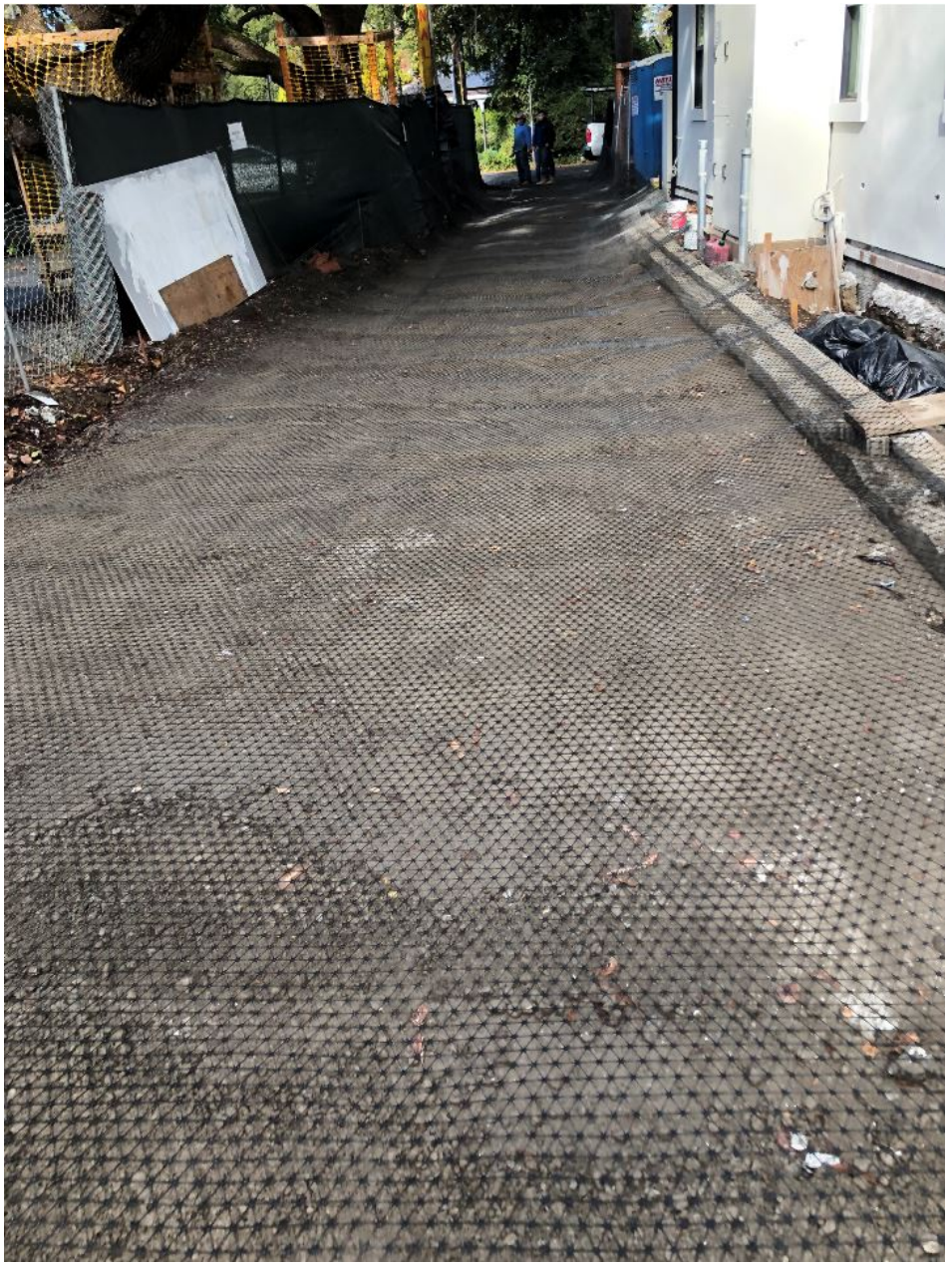
4.0 Recommendations

1. Project Arborist ("PA"):

   Initial Signoff

   It is recommended 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 Mr. Ryan Safty, Associate Planner (rsafty@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 (rsafty@losgatosca.gov) beginning with the initial tree protection verification approval letter".



2. Project Team Pre-Project Adjustments, Clarifications, and Limits Suggested or Required:

2a. AUTO GATE & BYPASS WALKWAY:

It is suggested that the applicant team revisit the proposed auto gate and bypass walkway section of the site, to determine if **oak #31** can actually be retained with these items to be renovated/built in very close proximity to the trunk edge.

2b. DRIVEWAY BASE SECTION, EDGE RESTRAINTS:

Limit driveway base rock base section excavation cuts to less than 6 inches of cut below existing soil surface grade elevations to avoid severe damage to roots extending from **oaks #31, 32, 41.**

Eliminate any "over-excavation" or "recompaction" proposed for subbase prep, within 20 feet of these trees.

Geogrid materials may or may not be required to be laid over soil surface grade in order to achieve these restricted base prep depths. See photo above right, showing a recent 2020 geogrid install on a project overseen by the CTA, using a high performance triaxial geogrid. Baserock was laid directly over the grid and tamped down to 90% Proctor, after this photo was taken.

Use of a triaxial geogrid over the existing soil surface means that zero scarification and zero recompaction needs to be performed, which avoids damage to or loss of the root systems of nearby trees being retained.

Paver restraints (aka "edge restraints") within 20 feet of the above-noted oaks will also need to be set such that their bases are less than or equal to 6 inches below surface grade elevations. This can be accomplished through use of steel edging pinned in place using long steel pins.

2c. GOOD NEIGHBOR RETAINING WALL:

Retaining walls within 20 feet of the above noted oaks, as well as **neighbor oak #44,** will need to be designed with "discontinuous footings" that float over existing grade, with floating beams that span between small-diameter structural piers set vertically into the ground as far apart as possible in terms of spacing on-center. Piers can be standard concrete, or can be helical anchors, or steel I-beams, or a combination thereof. Canopy overhangs in the area of oaks #31, 32, and #34 may preclude use of larger pier drilling equipment due to airspace requirements, and may require use of a 2-person breakdown-type drill rig which requires only 12 feet of vertical clearance (see photo at right of a two person breakdown drill rig being used on a sensitive heritage tree retaining wall construction project overseen by the CTA in 2020). This is a subject for further discussion.[1]

[1] The CTA noted that, upon review, the current proposed retaining wall "bottom of wall" elevations noted as "BW" on the grading and drainage plan sheet dated November 2020 are roughly "at or above existing soil surface grade" elevations. However, this does not necessarily mean that the wall foundation footings are proposed to terminate at

2d. FIRE TRUCK TURNAROUND RETAINING WALL:

If possible, use a discontinuous footing for the section of fire truck turnaround retaining wall that is within 20 linear feet of **tree #37.**

2e. PATRIARCH TREE #49 VS. PROPOSED LANDSCAPE ELEMENTS:

This 33.2 inch diameter valley oak (*Quercus lobata*) specimen is the most valuable and important tree on the site. The CTA valuated the tree at $38,600, using the new 2019 10th edition of *Guide for Plant Appraisal.*

The structural minimum root zone (Critical Root Zone) is 6 X diameter as an offset for all construction, and is calculated as 6 X (33.2") as a radial offset from trunk edge. This works out to 16.6 feet offset from trunk as a minimum distance for "structural stability". However, the CRZ distance does not guarantee survival of a tree.

A more reasonable offset is (10 X diameter) as a radial offset distance to maintain construction activity, for valley oak specimens which are a species that is highly sensitive to construction work (e.g. cuts, fills, summer irrigation, etc.). 10 X 33.2" works out to a construction offset of 27.6 feet offset from trunk edge, which the CTA rounded down to 25 feet as a suggested minimum offset from trunk edge. This is considered the distance inside which no activity should occur (i.e. a "no dig zone"), as Best Management Practice for tree preservation of a valley oak specimen of this size and value.

The applicant's most current iteration of the grading and drainage plan sheet dated **4/16/2021** shows turf lawn pulled out to 25 feet, and the proposed retaining wall work pulled out to roughly 16 feet from trunk edge. The landscape plan sheet shows the retaining wall pulled out to 25 feet from trunk edge, which means that there is a discrepancy between the landscape plan sheet L1 dated **6/22/2021** and the grading and drainage plan sheet 4 of 6.

The CTA recommends that Town Staff verify with the applicant's project team whether the wall will be built at 25 feet from trunk edge of oak #49 as shown on the landscape plan sheet, or at 16 feet from trunk edge as shown on the grading plan sheet.

TREE #49 SAFETY ISSUES

The presence of a possible bark inclusion "discontinuity" zone at the fork (roughly 12 feet to 15 feet elevation) is cause for concern. The fork may be a point of elevated risk of splitout, which would cause the tree to fail and endanger a "target zone" at least 50 feet in radius in all directions around the tree. Therefore, the proposed swimming pool (future permit application) and other higher use-type elements such as chairs, lounges, benches, etc. should be situated at least 50 feet or greater offset radius from the trunk edge, for safety purposes.[2]

bottom of wall elevations. In the CTA's professional experience, retaining wall footings are typically set far deeper than surface elevation. The best tree root-friendly wall footing alternative is to specify that the walls are engineered to float as spanning over-grade beams, connected by vertical piers of depth to be determined.

[2] Formal tree risk assessment per TRAQ protocols, and discussion of risk mitigation options, is outside the scope of this contract town arborist report preparation assignment, and the subject would therefore need to be revisited by the project arborist working for the owner of this property. The above information is provided as a courtesy to the applicant's project team for planning purposes only.

2f. SANITARY SEWER (SS) PIPE & STORM DRAIN (SD) PIPE ADJUSTMENTS:

Per the CTA's review of the most recent 4/16/2021 version of the grading and drainage plan sheet 4 of 6, the following plan adjustments are suggested:

- Relocate the proposed storm drain pipe trench to at least 10 feet offset from trunk edge of oak #41, or use trenchless directional bore technology to avoid trenching altogether.

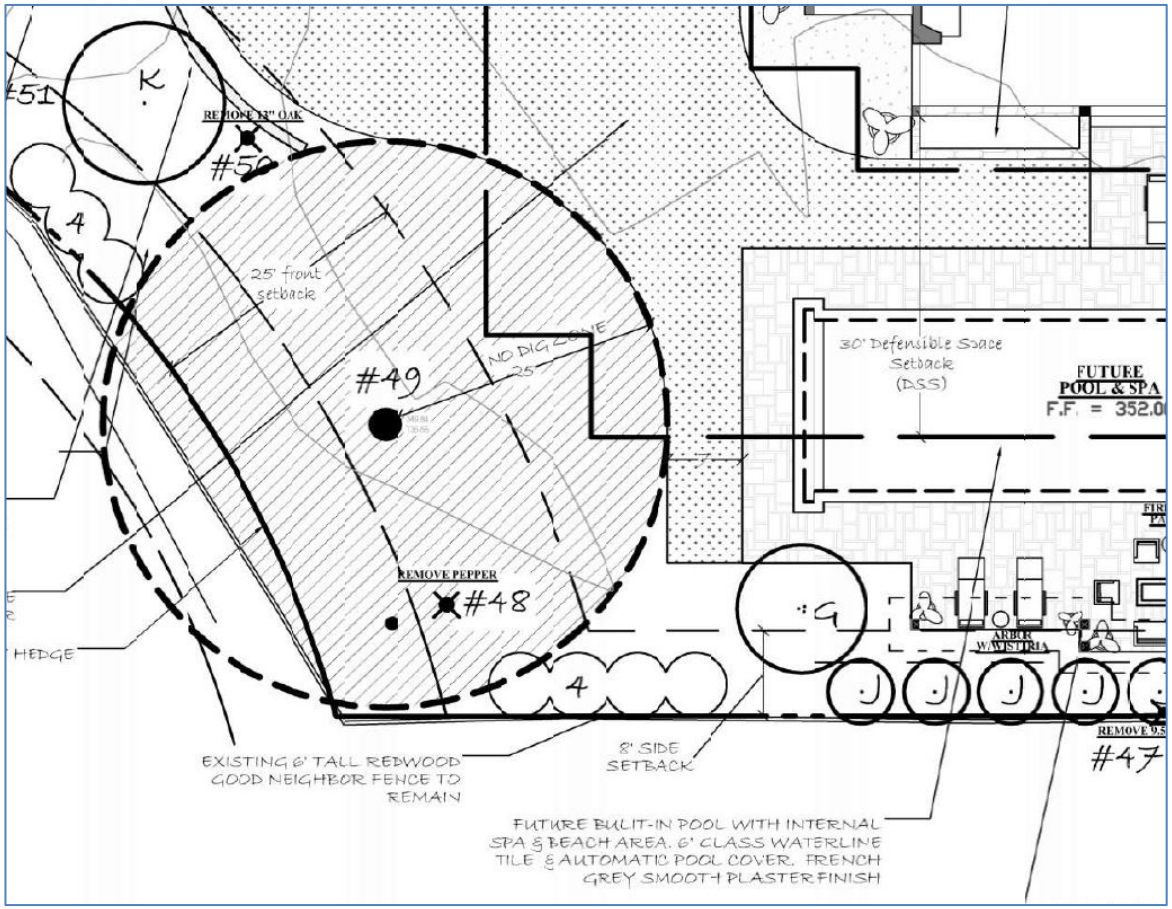
- Relocate the proposed sanitary sewer pipe trench to at least 10 feet from trunk edge of oak #41, and 6 feet from trunk edge of oak #57, or use trenchless directional bore technology to avoid trenching altogether.

2g. LANDSCAPE PLAN vs. OAK #49:

The most current iteration of the landscape plan sheet dated **6/22/2021** shows proposed plantings, proposed turf, and the proposed retaining wall at roughly 24-25 feet offset from trunk edge (see snippet from landscape plan sheet L1 dated 6/22/2021 at right, with dashed circle drawn at 25 feet radius from trunk edge). This appears to satisfy the CTA's request that all proposed new work and new plantings/irrigation be pulled out to 25 feet from trunk edge.

Note however that the most current grading plan sheet 4 of 6 dated 4/16/2021 still shows the wall location at 16 feet from trunk edge of oak #49, which appears to be an error or oversight.

Staff will need to verify with the applicant as to which of the two plan sheets shows the correct proposed retaining wall location in relation to oak #49.



3. New Irrigation Piping:

4a. Review:

Provide an irrigation plan sheet to Town Staff for review. all new irrigation hard PVC pipe trenching shall be offset at least 15 to 20 feet from the trunk edge of any tree being retained both on and off site.

For areas within 15 or 20 feet of a tree being retained, use only over-grade “trenchless” systems such as flexible ½” diameter tubing that is UV-resistant and rated for installations on-grade, in order to avoid trenching which would otherwise destroy root systems of trees being retained. See sample of commercial grade UV-resistant flexible PVC piping at right which is being used extensively on one of the CTA’s 2020 tree management projects. The thickness of this commercial grade tubing is such that it resists vandalism and rodent chewing damage far better than standard residential “brown line” flexible tubing. Also, the fact that this is flexible PVC tubing means that it can be quickly solvent-welded to any standard schedule 40 parts, such as threaded connectors, joints, etc.

4. Trunk Buffer Wrap Type III Protection:

Prior to demolition commencement, install trunk buffers around all trees being retained on-site:

Wrap **one (1) entire roll of orange plastic snow fencing around the trunk of each single on-site tree**, between grade and 6 to 8 feet above grade to create a padding of 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 orange plastic wraps. Affix using duct tape (do not use wires or ropes). See spec image above right showing the wooden boards correctly mounted against one entire roll of orange snow fencing, such that the wood does not actually touch the trunk at all.

Trees to be wrapped at this site: #31, 32, 34, 35, 37, 53, 57.

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

Prior to demolition commencement, erect chain link fencing panels set on moveable concrete block footings (see sample image below right). 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 bounder, 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.

For the sections of fence that run along the south end of the site near to trees #31, 32, 34, 35, 36, 37, use silt fencing with the bottom edge tucked down into the soil, or engineer's filter fabric zip tied to the fencing, as an additional barrier specifically designed to stop movement of slumping soil and wastes from dropping downhill into the root protection zones of these trees.

See image at right, where the applicant actually buttressed the base of silt fencing using a straw wattle that was pinned down into the ground using wooden dowels. Use of straw wattles in addition to the silt fence is the best method found to date, as it ensures that the base of silt fence is always tight on grade, to prevent migration of any phytotoxic materials, garbage, waste, soil, etc. into the trees' root protection zones downhill from the chain link alignment.

Pre-demolition fence routes:

See the CTA's red-dashed lines indicating chain link fence routing, on the attached tree map markup, which are shown on an older version of the grading and drainage plan sheet.

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.

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 or printed with waterproof ink on waterproof paper, 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: Walter Levison, Contract Town Arborist is an independent consultant retained under contract with Town of Los Gatos Planning Division Staff, and is not the "PROJECT ARBORIST".

7. Tree Removal Permitting / Removal of Protected-Size Trees / Mitigation:

   Eight (8) trees are proposed by the applicant to be removed: **#33, 40, 42, 43, 45, 46, 47, and #50.**

   The applicant's September 30, 2020 landscape plan sheet L1 reviewed for this revised report iteration 1/28/2021 shows a total of 36 new plantings of 15-gallon and 24" box size landscape trees of various species, plus a number of smaller shrublike trees and citrus trees. This installation of 36 tree specimens on site exceeds the Town of Los Gatos mitigation requirement in terms of Table 3-1 Tree Canopy Replacement Standards which require that for the above eight removals, a replacement consisting of at least thirty-two (32) trees, minimum 15-gallon size, be installed. Therefore, the applicant is not required to pay any mitigation in-lieu fees for this project.

8. New Plantings / Tree Installation Specs:

Ideally, **two (2) high flow type adjustable bubblers each emitting 1/2 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.

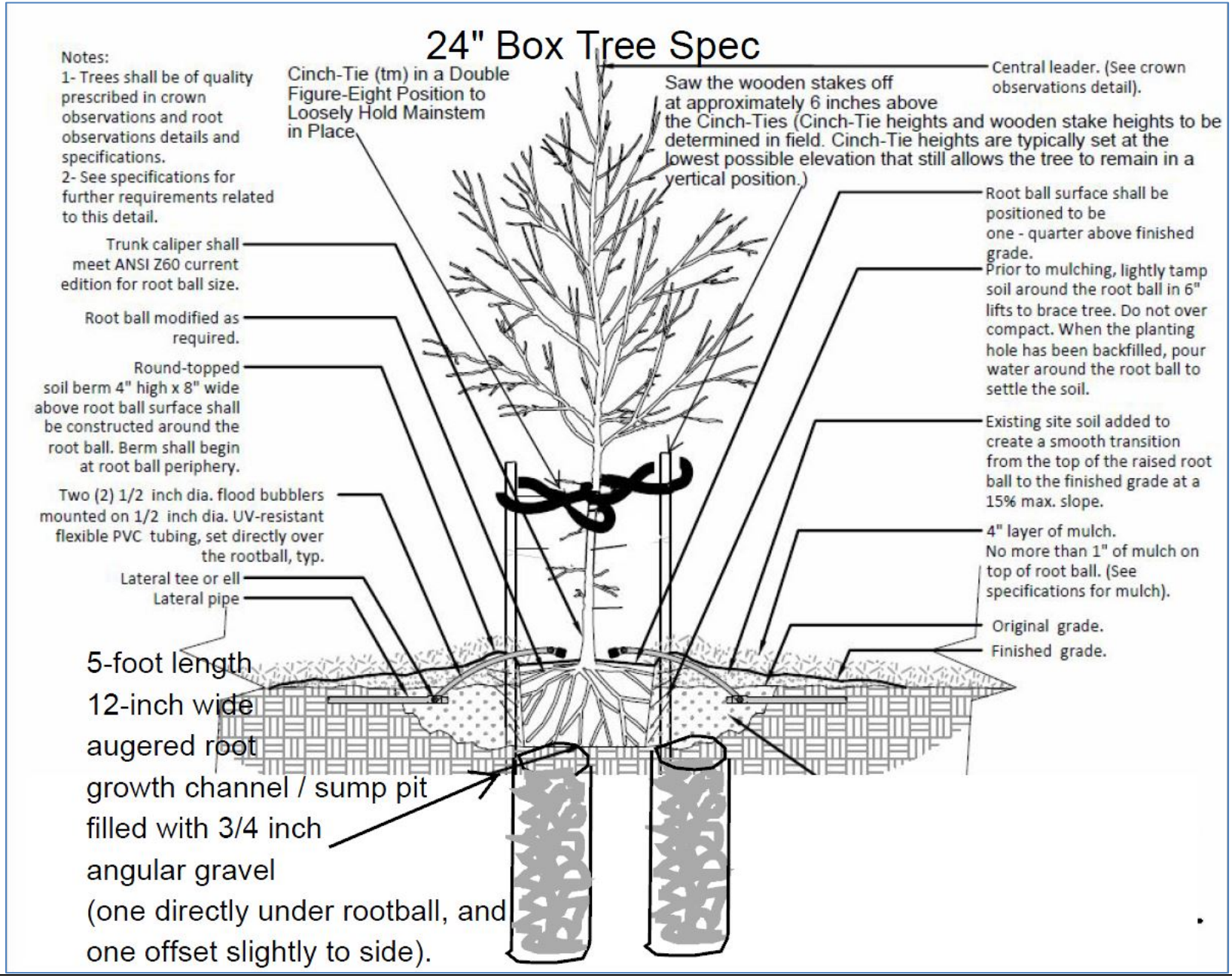
The tree stakes are cut to just above the elevation of the Cinch-Ties to avoid abrasion between the stakes and the limbs and trunk during wind movement.

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).

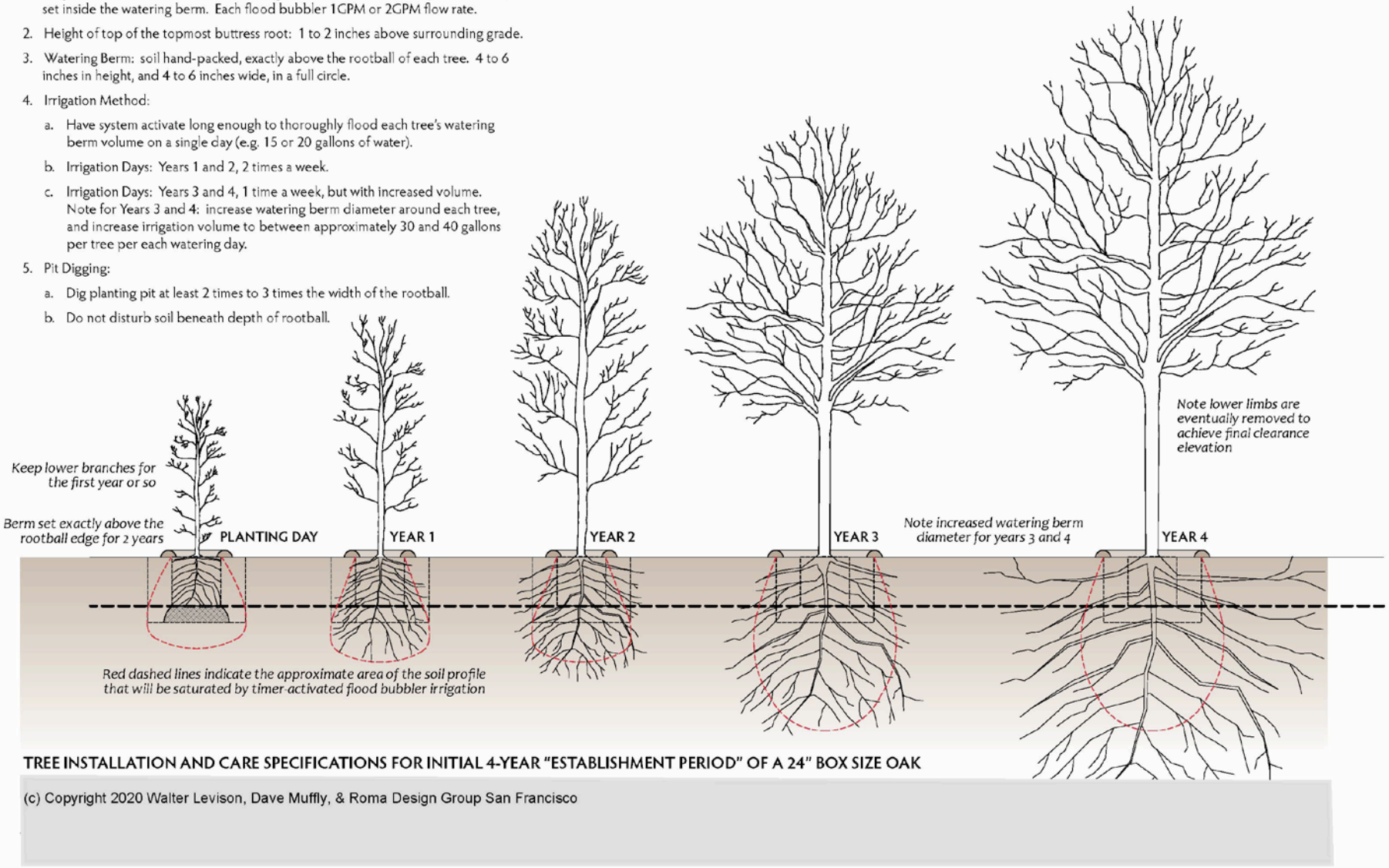
The spec image below shows the rootball being set at 25% above surrounding finish grade elevation of the soil. This is for "poorly drained" soil situations where flooding of the planting pit may occur. Given that a large percentage of the south bay and peninsula planting sites contain clay based construction 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 1GPM 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

RIGHT: Proper installation of a new 24" box size tree with two (2) high flow type ½ 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.

9. 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 [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	Not Available
Greater than 55 feet	Ten 24 inch box trees; or Five 36 inch box trees	Not Available

Notes

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

[2] 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.

[3] 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.

[4] 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 Hillsides 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
  5/99-5/20 (21 years)

- 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.

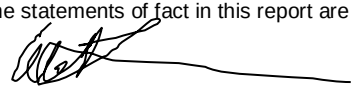
Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Tree are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborist cannot guarantee that a tree will be healthy or safe under 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/d180515f-ab75-440b-9c66-106005e3cf10?record_view=true#gs.hpaw8u

ISA TREE RISK ASSESSMENT QUALIFIED (TRAQ):
https://certificates.isa-arbor.com/d180515f-ab75-440b-9c66-106005e3cf10?record_view=true#gs.hpb30w

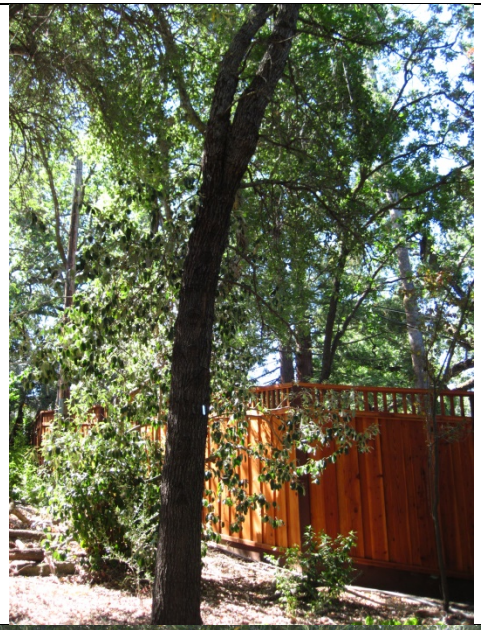
10.0 Digital Images

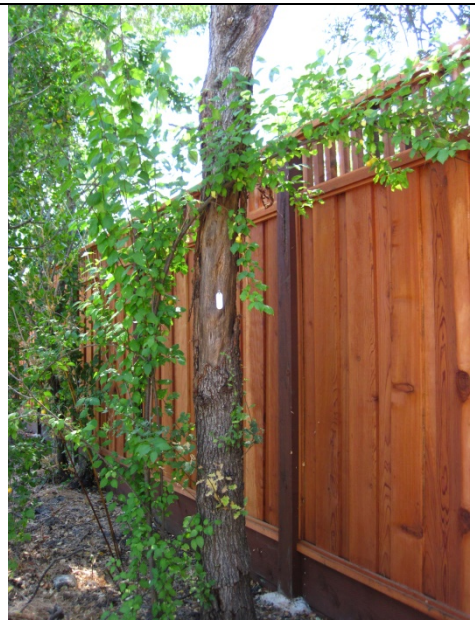
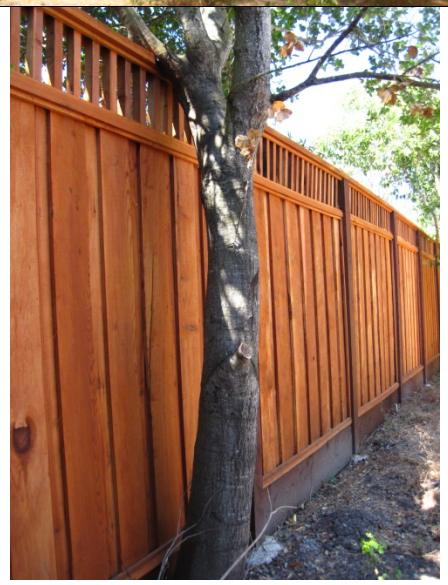
Below: Digital Images by the CTA archived 7/7/2020

Tag #	Image	Tag #	Image
31		32	

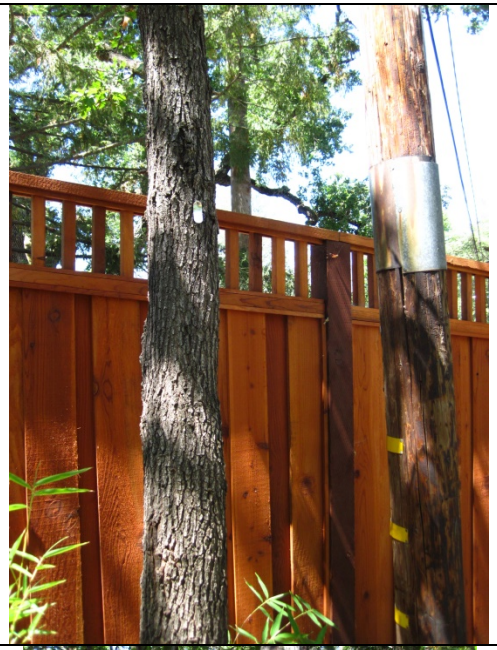
33			34	
35			36	

37		38	
39		40	

41		42	
43		44	

45		46	
47		48	

49		49	
49		50	

51		52	
53		----	(Intentionally blank)

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 conservation suitability ratings (CSR) are now based on the 2016 version of *Best Management Practices: Managing Trees During Construction, 2nd Edition,* published by the International Society of Arboriculture. These ratings are linked to tree health, desirability, distance between tree trunk edges and construction impacts such as root cuts and graded fill soil as shown on the applicant's current-proposed set of plan sheets, species' tolerance to construction impacts, etc. See the worksheet at the end of this data table for the full breakdown of TCS rating determinations and definitions. Adjustments to the applicant's proposed plans which would boost the TCS ratings up to 'Moderate' or 'Good' are noted in the CTA's Table 1.0(a) Summary above in this report.

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)emove Tree	(S)ave Tree	Tree Conservation Suitability Ratings (TCS)	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
31	*Quercus lobata*	Valley oak	10.6	--	--	10.6	45/22	75/65	68% Good		X	Poor	SW				Tree lopsided over driveway (13 feet above grade, horiz. limbs).	See tree map markup	TPZ fencing and TB trunk wrap.
32	*Quercus agrifolia*	Coast live oak	18.3	--	--	18.3	40/40	85/55	67% Good		X	Poor or Mod	West				Bark inclusion fork at 7 feet above grade, with flux noted.	See tree map markup	TPZ fencing and TB trunk wrap.
33	*Quercus lobata*	Valley oak	6.0	--	--	6.0	35/15	80/65	70% Good	X		Poor	East	East			------	------	-----

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)emove Tree	(S)ave Tree	Tree Conservation Suitability Ratings (TCS)	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
34	*Quercus agrifolia*	Coast live oak	10.8	--	--	10.8	40/20	70/70	70% Good		X	Poor or Mod	East				Note canopy hangs down to 7 feet elevation at centerline of existing drive. Will require severe clearance pruning.	See tree map markup	TPZ fencing and TB trunk wrap.
35	*Quercus agrifolia*	Coast live oak	13.0	--	--	13.0	28/40	75/60	65% Good		X	Mod	South east	South			Canopy hangs over existing drive, at 6 to 8 feet above grade. Will require severe clearance pruning.	See tree map markup	TPZ fencing and TB trunk wrap.
36	*Sequoia sempervirens*	Coast redwood	30.5	--	--	30.5	90/30	70/70	70% Good		X	Good					Use silt fence-reinforced RPZ chain link to avoid slumping of soil into the root protection zone.	See tree map markup	TPZ fencing.
37	*Prunus lyonii*	Catalina Island cherry	7.1	--	--	7.1	28/18	80/65	73% Good		X	Mod	West	West			---	See tree map markup	TPZ fencing and TB trunk wrap.

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)emove Tree	(S)ave Tree	Tree Conservation Suitability Ratings (TCS)	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
38	*Quercus agrifolia*	Coast live oak	5.7	--	--	5.7	25/15	65/55	58% Fair		X	Mod					Upper canopy sunburned, probably due to recent pruning of nearby tree #59, which suddenly increased exposure to sun.	See tree map markup	TPZ fencing.
39	*Juglans*	Regia	20.3	--	--	20.3	45/45	45/35	39% Poor		X	Poor	North				Tree was recently pruned, which appears to have increased tree #38 sunlight exposure.	See tree map markup	TPZ fencing.
40	*Olea europaea*	European olive	12	9	7	35 (four stems)	45/45	45/35	39% Poor	X		Poor	South				To be removed due to conflict with proposed site 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)emove Tree	(S)ave Tree	Tree Conservation Suitability Ratings (TCS)	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
41	*Quercus lobata*	Valley oak	11.0	--	--	11.0	35/20	80/45	65% Good		X	Poor	South	South			Bark inclusion fork noted at 14 feet above grade.	See tree map markup	TPZ fencing and TB trunk wrap. Relocate proposed storm drain pipe trench and proposed sewer pipe trench to at least 10 feet offset from trunk edge, or use directional bore technology to install them in a trenchless manner.
42	*Arbutus unedo*	Strawberry tree	5.9	5.3	--	11.2	15/12	75/60	65% Good	X		Poor					Bark inclusion noted at 1 foot above grade.	--------	--------
43	*Olea europaea*	European olive	10.2	9.0	8.0	27.2	25/28	80/60	67% Good	X		Poor					-------	--------	--------

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)emove Tree	(S)ave Tree	Tree Conservation Suitability Ratings (TCS)	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
44	*Quercus agrifolia* *NEIGHBOR TREE* *LARGE PROTECTED TREE >24" DBH*	Coast live oak	Est. 25	--	--	Est. 25	35/40	85/65	75% Good		X	Mod	North east				Tree has been pruned back to clear the subject property, resulting in a lopsided canopy, even though root system likely extends southward.	See CTA's tree map markup.	Use floating type retaining wall footing, such as an over-grade beam spanning between vertical piers, to avoid root loss to this tree.
45	*Fraxinus udhei*	Shamel ash	33.2	--	--	33.2	60/60	40/30	34% Poor	X		Poor					Live twig and foliar density is in decline due to years of California drought, combined with lack of heavy irrigation.	-----	-------
46	*Quercus lobata*	Valley oak	8.1	--	--	8.1	25/20	45/30	37% Poor	X		Poor	South east			X	Buried root crown is causing bark sluffing along the trunk. This tree may be removed due to proposed future pool permit.	-----	-------

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)emove Tree	(S)ave Tree	Tree Conservation Suitability Ratings (TCS)	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
47	*Quercus agrifolia*	Coast live oak	9.5	--	--	9.5	25/20	40/40	40% Poor	X		Poor	South east				Root crown and stems recently damaged during new fence install.	-----	-------
48	*Schinus molle*	California pepper (non-native)	9	6	--	15	16/20	10/10	10% Very Poor		X	Poor	South				Mainstems and root crown exhibit severe fungal decay. The CTA would allow removal for no-fee.	See tree map markup	TPZ fencing.

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)emove Tree	(S)ave Tree	Tree Conservation Suitability Ratings (TCS)	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
49	*Quercus lobata* ***LARGE PROTECTED TREE >24" DBH***	Valley oak	33.2	--	--	33.2	50/65	65/55	60% Fair		X	Good					For optimal root protection, keep all proposed new site work at least 30 feet offset from trunk, and set up TPZ fencing at 25 feet offset radius. Note dumbo ear formation at 12 to 15 feet above grade, indicating likely bark inclusion type fork with tissue disattach-ment. May require through bolt brace system to support this fork.	50 feet offset for pool basin footprint and other "higher human traffic" type areas. 30 feet offset radius for new work. 25 feet offset radius for chain link RPZ fencing.	Redesign proposed work to offset at least 50 feet from trunk for safety purposes. RPZ fence at 25 feet offset. Through-bolt brace (optional)
50	*Quercus lobata*	Valley oak	6.7	6.6	--	13.3	30/16	60/56	58% Fair	X		Poor					Tree will be removed due to conflict with proposed turf lawn area.	-------	-------

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)emove Tree	(S)ave Tree	Tree Conservation Suitability Ratings (TCS)	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
51	*Quercus lobata*	Valley oak	9.2	--	--	9.2	30/20	60/55	57% Fair		X	Mod					Severe root damage noted, due to both a historical concrete planter, and recent wooden fence header board installation work.	12 feet offset radius	TPZ fencing.
52	*Quercus lobata*	Coast live oak	11.3	--	--	11.3	30/20	75/60	64% Good		X	Mod					(Same damage as noted above for tree #51).	12 feet offset radius	TPZ fencing.
53	*Quercus agrifolia*	Coast live oak	10.0	--	--	10.0	30/18	80/65	72% Good		X	Mod to Good	West	West				15 feet offset radius	TPZ fencing.
57	*Quercus agrifolia*	Coast live oak	5.6	--	--	5.6	25/10	60/60	60% Fair		X	TBD	West	West			(Same as oak #54 above)	5 to 15 feet offset.	TPZ fencing, and relocate the proposed sewer pipe alignment to at least 10 feet offset from trunk edge, or use directional bore trenchless technology.

Overall Tree Condition Ratings / Breakdown of Numeric Ranges (New, Per *Guide for Plant Appraisal, 10th 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[3]

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	
Good	**80-100**	Trees with good health, good structural stability and good expected longevity after construction.
Moderate	**60-79**	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.
Poor	**<59**	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)

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

[3] Derived from Fite and Smiley, 2016. *Best Management Practices: Managing Trees During Construction, 2nd 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.

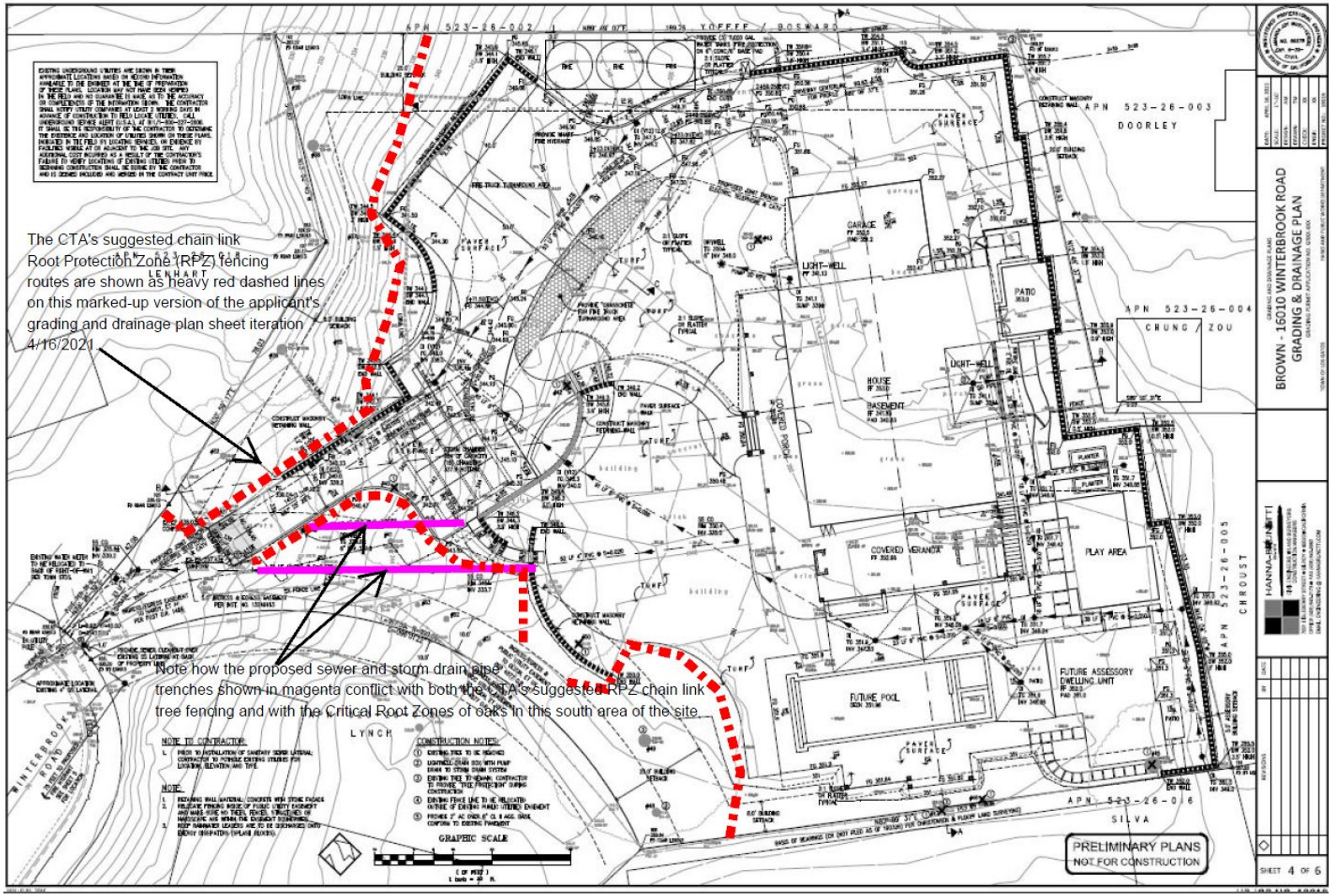
12.0 Tree Location & Protection Fence Map Mark-up by the Applicant and the CTA

The CTA marked up the applicant's grading and drainage plan sheet 4 of 6, dated **4/16/2021.**

The CTA added the following items to this sheet for reference purposes:

a. Red dashed lines indicate suggested optimal chain link fencing tree root protection zones or root protection zones (TPZ or RPZ). The routes can be adjusted in the field during the initial pre-con meeting between the builder and the project arborist chosen by the applicant.

b. Magenta highlight lines indicate the current alignments for the sewer and storm drain trenches, as proposed by the applicant.



These two pipe trench routes are in conflict with the Critical Root Zones of trees #41, 53, and 57, and are suggested to be relocated or built using trenchless directional bore technology to avoid causing severe root loss to the trees, the most important of which are trees #41 and #53.

13.0 Attached: Appraisal Worksheet by the CTA

This appraisal worksheet was prepared using the 10th edition of the Guide for Plant Appraisal, 2nd Printing (2019). The dollar values of each survey tree derived from these calculations are useful in helping determine the monetary fines for construction team violations of the Town of Los Gatos tree ordinance, and for other Town Staff purposes. For instance, if a tree is found by an ISA Certified Arborist (e.g. the Project Arborist, or the Contract Town Arborist) to be "50% damaged" in terms of below and/or above-ground losses to structure and/or health (vigor), the fine assessed on the construction team might be calculated as 50% of the tree's appraised dollar value.

Walter Levison
CONSULTING ARBORIST

Valuation Appraisal Worksheet Based on *Guide for Plant Appraisal, 10th Edition* , 2nd Printing (2019)
"Functional Replacement Method / Trunk Formula Technique"
Revised 8/12/2021
16010 Winterbrook, Los Gatos, CA

								Depreciation Factors					Line 9		Line 10	Line 11	
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	Functional Limitations	External Limitations	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)	(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	Rounded-off Appraised Values
31	Ql	31	0.75	0.65	0.7	67%	10.6	70%	90%	2	2.24	$250.00	$111.61	88.20	$ 9,844	$ 4,171	**$4,170**
32	Qa	30	0.85	0.55	0.8	63%	18.3	70%	90%	3	3.8	$250.00	$65.79	262.89	$ 17,295	$ 6,892	**$6,900**
33	Ql	31	0.8	0.65	0.6	67%	6	60%	90%	2	2.24	$250.00	$111.61	28.26	$ 3,154	$ 1,133	**$1,130**
34	Qa	30	0.7	0.7	0.65	69%	10.8	70%	90%	3	3.8	$250.00	$65.79	91.56	$ 6,024	$ 2,628	**$2,630**
35	Qa	30	0.75	0.6	0.6	62%	13	65%	90%	3	3.8	$250.00	$65.79	132.67	$ 8,728	$ 3,178	**$3,180**
36	Ss	34	0.7	0.7	0.8	72%	30	75%	90%	4	4.75	$250.00	$52.63	706.50	$ 37,184	$ 17,946	**$17,900**
37	Pl	28	0.8	0.7	0.75	72%	7.1	65%	90%	2	2.24	$250.00	$111.61	39.57	$ 4,417	$ 1,867	**$1,870**
38	Qa	30	0.65	0.55	0.55	57%	5.7	70%	90%	3	3.8	$250.00	$65.79	25.50	$ 1,678	$ 597	**$600**

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								Depreciation Factors					Line 9		Line 10	Line 11	
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	Functional Limitations	External Limitations	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)	(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	Rounded-off Appraised Values
39	Jr	18	0.45	0.35	0.55	40%	20.3	60%	90%	3	3.8	$250.00	$65.79	323.49	$ 21,282	$ 4,540	**$4,540**
40	Oe	22	0.75	0.65	0.75	68%	Multiple stem total used (square inches)	70%	90%	3	3.8	$250.00	$65.79	243.00	$ 15,987	$ 6,849	**$6,800**
41	Ql	31	0.8	0.55	0.7	61%	7	65%	90%	2	2.24	$250.00	$111.61	38.47	$ 4,293	$ 1,532	**$1,530**
42	Au	5	0.75	0.6	0.55	62%	Multiple stem total used (square inches)	65%	90%	1	2.09	$250.00	$119.62	49.00	$ 5,861	$ 2,109	**$2,110**
43	Oe	22	0.8	0.6	0.8	66%	Multiple stem total used (square inches)	75%	90%	3	3.8	$250.00	$65.79	195.00	$ 12,829	$ 5,715	**$5,700**
44	Qa	30	0.85	0.65	0.7	69%	25	60%	90%	3	3.8	$250.00	$65.79	490.63	$ 32,278	$ 11,983	**$12,000**
45	Fu	16	0.4	0.3	0.75	38%	(Adjusted trunk area (ATA)	70%	90%	4	4.75	$250.00	$52.63	837.00	$ 44,053	$ 10,616	**$10,600**
46	Ql	31	0.45	0.3	0.5	35%	8.1	50%	90%	2	2.24	$250.00	$111.61	51.50	$ 5,748	$ 912	**$910**

Walter Levison
CONSULTING ARBORIST

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16010 Winterbrook, Los Gatos, CA

								Depreciation Factors					Line 9		Line 10	Line 11	
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	Functional Limitations	External Limitations	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)	(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	Rounded-off Appraised Values
47	Qa	30	0.4	0.4	0.5	42%	9.5	50%	90%	3	3.8	$250.00	$65.79	70.85	$ 4,661	$ 870	**$870**
48	Sm	33	0.1	0.1	0.55	17%	Multiple stem total used (square inches)	50%	90%	3	3.8	$250.00	$65.79	93.00	$ 6,118	$ 461	**$460**
49	Ql	31	0.65	0.55	0.85	61%	(Adjusted trunk area (ATA)	75%	90%	2	2.24	$250.00	$111.61	840.00	$ 93,750	$ 38,602	**$38,600**
50	Ql	31	0.6	0.56	0.8	60%	Multiple stem total used (square inches)	80%	90%	2	2.24	$250.00	$111.61	67.00	$ 7,478	$ 3,241	**$3,240**
51	Ql	31	0.6	0.55	0.6	57%	9.2	60%	90%	2	2.24	$250.00	$111.61	66.44	$ 7,415	$ 2,262	**$2,260**
52	Ql	31	0.75	0.6	0.65	63%	11.3	60%	90%	2	2.24	$250.00	$111.61	100.24	$ 11,187	$ 3,806	**$3,810**
53	Qa	30	0.8	0.7	0.65	71%	10	60%	90%	3	3.8	$250.00	$65.79	78.50	$ 5,164	$ 1,973	**$1,970**
57	Qa	30	0.6	0.6	0.65	61%	5.6	75%	90%	3	3.8	$250.00	$65.79	24.62	$ 1,620	$ 664	**$660**

Walter Levison
CONSULTING ARBORIST

Valuation Appraisal Worksheet Based on *Guide for Plant Appraisal, 10th Edition* , 2nd Printing (2019)
"Functional Replacement Method / Trunk Formula Technique"
Revised 8/12/2021
16010 Winterbrook, Los Gatos, CA

								Depreciation Factors					Line 9		Line 10	Line 11	
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	Functional Limitations	External Limitations	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)	(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	Rounded-off Appraised Values
Notes: 1. OVERALL CONDITION RATING RANGE per the new 10th edition, 2nd Printing, of *Guide for Plant Appraisal* (2019): **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**	**$134,440**