ASCA Registered Consulting Arborist #401 / ISA Tree Risk Assessment Qualified / ISA Certified Arborist #WE-3172A Cell: (415) 203-0990 / Email: walterslevisonjr@yahoo.com

Assessment of Eight (8) Protected-Size Trees at and adjacent to 17294 Wedgewood Los Gatos, California

Prepared for:
Mr. Sean Mullin, Associate Planner
Town of Los Gatos Community Development Department
110 E. Main Street
Los Gatos, CA 95030

Field Visit:
Walter Levison, Contract Town Arborist (CTA)
8/28/2021

Report by CTA
9/9/2021

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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.

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.

New Staff Protocols / High Risk Trees and 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.

Author’s Side Notes Regarding the 17294 Wedgewood Submittal Set of Plans:

1. Missing Plans:

   The applicant’s set of plans from March, 2021 does not include utility hookup trench routing, drainage pipe and area drain trenching routes, electrical lighting conduit trenching routes, landscape planting plans, or irrigation pipe trenching plans. Therefore, these elements or a subset of these items will need to be reviewed by the CTA at a later time, under a separate contract in addition to and distinct from this initial tree assessment and arborist report preparation to 9/9/2021, in order to fully evaluate the various expected (potential) negative impacts that construction of these items will have on the health and structure of trees being protected and retained.

2. RPZ Root protection zone fencing:

   It is not clear at the time of writing whether routing of the RPZ fencing per the author’s suggested perimeters will be feasible, or whether it will partial hinder construction staging, storage, work, ingress, egress, etc.

   The way it is shown on the CTA’s tree protection map markup at the end of this report is considered “optimal” in terms of maximizing root system preservation around trees being retained, though even if fencing is set up along the routes suggested by the CTA, there will still be significant root loss

east of tree #21, and south of tree #27 (unless the basement footprint is pushed southward to 18 feet offset from trunk edge of tree #27, as was stated by the applicant during the CTA's field visit to this site in September, 2021).

Table 1.0(a) (REFER TO THE CTA'S TREE MAP MARKUP IN SECTION 12.0 WHEN REVIEWING THIS MATRIX)

Line Number	Tree Tag Number	Expected Tree Disposition	Appraised Value (per 10th Edition of *Guide for Plant Appraisal*, for Trees Being Preserved	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	21	Retain	$15,000.	Minimize or eliminate all excavation for the proposed driveway and for any scarification/compaction related to "subbase preparation" below the proposed driveway base materials, within approximately 25 linear feet of the trunk edge. In order to accomplish this, the only methods and materials known to the author are to use a very high performance model of triaxial geogrid or biaxial geogrid laid down over the existing soil grade surface, which then provides increased load bearing performance and eliminates the need for any subbase preparation. In the author's recent 2021 experience with projects throughout the Bay Area, there may be a fire truck rating required for the drive, on the order of +/- 70,000 lbs of load bearing capacity. The author has worked on various driveway, walkway, and parking lot projects over the past few years at Stanford University where subbase preparation was completely eliminated, and we used Tensar TX160 triaxial geogrid laid over existing soil grade to achieve this level of performance. The project engineers and County engineers signed off on this "non-standard" build spec.	($250 per each 24" Box) X 10 = $2,500.	24" Box

Line Number	Tree Tag Number	Expected Tree Disposition	Appraised Value (per 10th Edition of *Guide for Plant Appraisal*, for Trees Being Preserved	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
2	22	Retain	$2,390.	No changes to plans required. Note however that this tree will require chain link root protection zone (RPZ) fencing, and the degree to which the root system can be protected and preserved will depend completely on the ROUTE of the chain link fence in terms of fence offset distance from trunk, which should be at least 15 to 20 feet offset radius from trunk, or more, in all directions.	($250 per each 24" Box) X 3 = $750.	24" Box
3	23	Retain	$3,220.	No changes to plans required (caveat: the applicant does not appear to have submitted certain plan sheets such as grading, drainage, irrigation, etc. that would have allowed the CTA to assess specific negative impacts to this tree related to trenching, grading, etc. These impacts are considered "unknown" at this time). This tree will require chain link root protection zone (RPZ) fencing, and the degree to which the root system can be protected and preserved will depend completely on the ROUTE of the chain link fence in terms of fence offset distance from trunk, which should be at least 15 to 25 feet offset radius from trunk, or more, in all directions, per the CTA's tree map markup.	($250 per each 24" Box) X 3 = $750.	24" Box

Line Number	Tree Tag Number	Expected Tree Disposition	Appraised Value (per 10th Edition of *Guide for Plant Appraisal*, for Trees Being Preserved	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
4	24	Retain	$17,100.	No changes to plans required (caveat: the applicant does not appear to have submitted certain plan sheets such as grading, drainage, irrigation, etc. that would have allowed the CTA to assess specific negative impacts to this tree related to trenching, grading, etc. These impacts are considered "unknown" at this time). This tree will require chain link root protection zone (RPZ) fencing, and the degree to which the root system can be protected and preserved will depend completely on the ROUTE of the chain link fence in terms of fence offset distance from trunk, which should be at least 15 to 25 feet offset radius from trunk, or more, in all directions, per the CTA's tree map markup.	($250 per each 24" Box) X 6 = $1,500.	24" Box
5	25	Retain	$3,480.	No protection is required for this tree, given that it is a neighbor-owned specimen behind an existing fence that is to remain as-is, and overhangs an existing residence roof peak that will remain as-is.	($250 per each 24" Box) X 4 = $1,000.	24" Box
6	26	Retain	$1,610.	This low-value tree has been severely pruned to clear airspace around existing utility wires, etc. The tree in its current position is slightly blocking ingress-egress to the proposed construction area. However, the CTA expects that the builder will access the site only from the south (i.e. from Wedgewood), as opposed to entering the project from Browns Lane, which would necessarily cause excessive traffic around trees #26, 27, 28. The CTA suggests that Staff formally create a project condition of approval (COA) that states that all site plan work for main residence construction and all related ancillary construction be performed using only Wedgewood as the ingress and egress point, and specifically note that contractor access through Browns Lane will not be allowed.	($250 per each 24" Box) X 3 = $750.	24" Box

Line Number	Tree Tag Number	Expected Tree Disposition	Appraised Value (per 10th Edition of *Guide for Plant Appraisal*, for Trees Being Preserved	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
7	27	Retain	$8,000.	This tree is located in an existing gravel parking area in front of the existing smaller residence that is accessed from Browns Lane. In order to better preserve and protect the south and west portions of this tree's horizontally-extended root system, it would be beneficial if we could draw up a planning division condition of approval (COA) that restricts all contractor site access to Wedgewood, and states specifically that site access through Browns Lane will not be allowed. By restricting site access only through Wedgewood, we will be able to erect chain link RPZ fencing over a much larger portion of the root system, since the contractors will not access the site from Browns Lane. Note also that the current drawing from March, 2021 shows the distance between trunk base edge and basement limit of excavation at roughly 11 feet offset radius. This tree has a Critical Root Zone (CRZ) of approximately 20 feet radius in terms of recommended construction offset from edge of trunk. Therefore, the CTA recommends that the offset distance be increased to roughly 20 feet. I did speak with the applicant on site, who informed me that he had recently resubmitted a new site plan drawing to planning division which apparently shows a modified basement excavation offset of much farther south than currently shown on the CTA's tree map markup (e.g. 20 feet or more southwards offset, etc.). The CTA suggests that planning staff provide the CTA with an updated "finalized" layout of the proposed new residence and basement excavation limits, showing correct scale, with an offset distance of at least 20 feet or more between basement cut limit and tree #27 trunk base edge, so that the south side of the tree's root system is verified as being retained according to the accepted Critical Root Zone standard offset distance.	($250 per each 24" Box) X 4 = $1,000.	24" Box

Line Number	Tree Tag Number	Expected Tree Disposition	Appraised Value (per 10th Edition of *Guide for Plant Appraisal*, for Trees Being Preserved	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	28	Retain	$6,700.	This tree is located in the front yard/gravel parking lot area of the existing smaller residence, and is accessed off of Browns Lane. There is no fencing required for the tree per-say. However, it would be beneficial, as noted above in this report summary table 1.0(a), if planning staff could create a planning division condition of approval (COA) that prohibits contractor access to/from Browns Lane, and restricts ingress/egress to Wedgewood only, so that the root system is not unnecessarily compacted by months or years of construction-related vehicle and machinery traffic. Even though the tree's root system is covered with gravel and would appear to be "impacted" by presence of the existing driveway/parking area, these older open soil root zone areas covered with gravel tend to be far less compacted than modern engineered surfaces, and therefore the tree #28 root system may be far more extensive and far-reaching in terms of radial extension out from trunk edge, and in much better condition, than might be expected. Therefore, any and all methods of excluding contractor staging, storage, movement, etc. within 30 feet of the tree would be beneficial for protection and preservation of the root system. Side note: coast redwoods tend to have root systems far more extended than their canopy dripline radii, sometimes as far as 3x or 4x the canopy dripline distance from trunk edge.	($250 per each 24" Box) X 4 = $1,000.	24" Box

2021-22 Town of Los Gatos In-lieu fee equivalent = $250 per each required 24" box mitigation tree planting not installed on the site.
15-gallon size trees are only allowable as new plantings for properties measuring < 10,000 square feet, but the same $250 per-tree fee still applies when calculating in-lieu fees for all required canopy replacement trees that will not actually be installed on the site by the applicant.
This particular property measures +/-14,000 sq. ft., and is therefore <u>not</u> eligible for the 15-gallon size replacement tree standard.

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 2021 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 both the on-site and neighbor-owned trees. These tags were racetrack shaped aluminum tags numbering "21" through "28" (eight total trees assessed).

Missing Plan Sheets

This application did not include various standard plan sheets such as grading, drainage, utilities, irrigation, etc. Therefore, the CTA did not review any impacts to the trees from proposed construction, except for basic impacts from excavation related to the driveway and main residence footprints themselves. The CTA will need to review additional documents at a later time in order to fully assess expected construction-related impacts to trees being retained.

Privets, fruit trees, and palms were excluded from the study, as these are considered non-regulated "exemption trees" per the Town tree ordinance.

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.

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.

Side Note on Fencing

The applicant discussed their plans with the CTA on site during the field assessment, and how they had recently resubmitted to planning with a different layout for the basement and residence footprint which pushes the massing farther southward than shown on the March 2021 site plan reviewed by the CTA and used to create the tree map markup included in this report. The "revised" sheet apparently shows the basement cut at 18 feet south of tree #27 trunk base edge (though this cannot be confirmed at the time of writing, since the CTA has not reviewed that updated site plan sheet).

The preservation of tree #27 will depend on the extent to which we can fence off its root system and prevent unnecessary compaction and other construction-related soil root zone damages. The CTA included a "suggested" route for the fencing around tree #27 on the tree map markup in this report, based solely on the existing March 2021 proposed site plan layout, which according to the applicant is now an obsolete drawing. It is

expected that the fencing can be set further southward than currently shown on the CTA's tree map markup, if the new layout of the proposed basement and residence foundation footprint has now been shifted to 18 feet south of the tree #27 trunk base edge.

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:

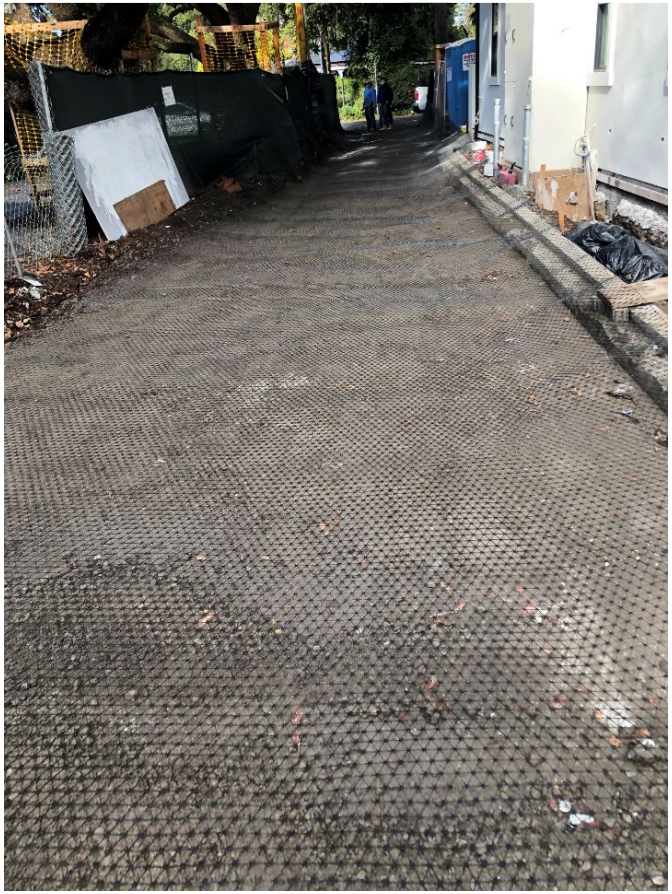
Severe Pruning Exception in Town Code section 29.10.1010(3) "…..except for pollarding of fruitless mulberry (*Morus alba*) or other species approved by the Town Arborist….".

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 mainstems totaling less than 18 inches are considered non-protected.

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. Sean Mullin, Associated Planner (smullin@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 (smullin@losgatosca.gov) beginning with the initial tree protection verification approval letter".

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

   2a. DRIVEWAY BASE SECTION, EDGE RESTRAINTS, ROUTING, AND WIDTH:

   DRIVEWAY BASE SECTION:

   Limit driveway base rock base section excavation cuts to **less than or equal to 6 inches of cut below existing soil surface grade elevations** to avoid severe damage to roots extending from **tree #21 being retained in close proximity to drive.**

   Eliminate any "over-excavation" or "re-compaction" proposed for subbase prep, within 25 linear feet of tree #21. Geogrid materials may or may not be required to be laid over soil surface grade in order to achieve this type of restricted base prep depth (see photo at right of a recent 2020 geogrid install on a project overseen by the CTA in Menlo Park, CA, using a high performance triaxial geogrid TX160 TriAx, with the highest available load-bearing ratings. Baserock was laid directly over the grid and tamped down to 90% Proctor, after this photo was taken. Use of a high rated type 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).

Note: there may be a County fire department regulation that governs the load bearing capacity of the driveway, such as “70,000 lbs. min.” or similar, such that fire response vehicles can utilize the drive without causing severe damage to the drive. Consult with geogrid manufacturers and distributors, as well as geotechnical engineers, to determine the load-bearing capacity of a “no dig” type driveway built up over grade without subbase prep, using a high performance type triaxial geogrid underlayment to provide lateral load dispersal qualities.

DRIVEWAY EDGE RESTRAINTS:

Important: Eliminate all cut depths for installation of the driveway “edging” (aka “pavement or paver restraint”) along the west edge of the driveway facing tree #21. Use an edging treatment that can be laid directly over existing soil grade elevation to avoid all excavation cuts related to edge installation. This can be accomplished through use of steel edging pinned in place using long steel pins. Note that if a standard deep cut depth type edge restraint is used, it would effectively nullify all of the tree root preservation benefits of the “no dig” geogrid system, rendering the special system useless.

DRIVEWAY FOOTPRINT ROUTING:

If possible, push the proposed driveway footprint farther eastward than currently proposed, to further minimize root loss/damage east of the trunk of tree #21

Above right: Close-up image of a WLCA project at Stanford where TriAx TX160 triaxial geogrid was used as a geogrid underlayment over the soil surface, to allow the construction to proceed as a “no dig” system where no subbase prep was performed at all. The grid was laid over the existing soil surface, and baserock and asphalt laid directly over that baserock after the baserock was compacted to a 90% or 95% rate.

Note that in this system, the subbase is not prepared with any initial scarification/recompaction, and is simply left at the existing “background natural compaction rate” such as 83-85%, which allows for continued normal tree root growth through the subbase area. With this type of system, there is continued tree root expansion and elongation underneath the geogrid footprint over time.

Engineers all signed off on this alternative specification type “no-dig” build, the actual load-bearing capacity of which is not known, but is assumed to be at least +/- 70,000 lb or greater (i.e. fire truck capacity), though this cannot be verified.

2c. BASEMENT EXCAVATION LIMIT / REDWOOD #27:

The property owner confirmed with the CTA verbally in August, 2021 that the finalized plan distance from redwood #27 trunk base edge to basement excavation limit would be greater than +/-20 linear feet. However, per the existing March, 2021 site plan sheet A1.0 reviewed by the CTA for this arborist report, the proposed distance from trunk base edge is only +/- 11 feet offset radius: well below the Critical Root Zone of approximately 20 feet calculated for tree #27.

It is suggested that Town Planning Staff verify that updated “final” construction site plan sheet(s) indicate a basement excavation offset radius of at least 20 to 25 feet linear distance between the limit of main residence construction and the trunk base edge of redwood #27. Note that the basal area of this tree is roughly 5 to 6 feet diameter, which means that the actual scaled offset should be measured from approximately 3 feet south of the tree #27 trunk plot center point as shown on the applicant’s site plan sheet.

2d. CONTRACTOR EXCLUSION FROM EXISTING SMALL RESIDENCE AND EXISTING PARKING AREAS ACCESSED FROM BROWNS LANE:

In order to further protect and preserve the root system extending from redwood #27, which may extend as far as 2x to 3x the canopy dripline radius (i.e. 50 feet southward extension radius from trunk edge), the CTA suggests that Town Planning Staff prepare a planning condition of approval (COA) that prohibits all contractor site work from using Browns Lane, and requires that all site plan construction-related work use only the Wedgewood access point for ingress, egress, staging, storage, work, hauling, etc.

Toward this end, it is further suggested that Town Staff require that an exclusion fence of chain link steel material be erected across the entire width of the site in an east-west trajectory, to exclude all movement between the (existing residence and parking lot areas in the north 1/3 of the site), and the south 2/3 of the site where the new main residence is to be built.

The location of this east-west oriented exclusion fence would ideally be 5 to 8 feet north of the basement excavation limit, which would give contractors a narrow but adequately-wide “construction corridor” area to work in, for exterior finishing, scaffold erection, etc. along the north side of the proposed new main residence and basement.

For reference, a typical build site in San Francisco, for instance, requires at least 4 to 5 feet of construction corridor width, for scaffold erection around a new construction footprint or around an existing structure undergoing renovation.

3. 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: All surveyed trees noted in this CTA report, except for neighbor tree #25.

   No storage, staging, work, or other activities will be allowed inside the RPZ except with PA monitoring.

4. Signage: The RPZ fencing shall have one sign affixed with UV-stabilized zip ties to the chain link at eye level for every 20 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 <u>not</u> the "PROJECT ARBORIST".

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

   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 <u>not</u> 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.

Pre-construction fence routes:

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

(Routes may be subject to change, depending on the finalized limit of basement excavation, which is expected to be 20 feet or greater linear offset from the trunk base edge of redwood #27).

As noted above in this recommendations section of the CTA report, the CTA suggests that Town Planning Staff create a planning condition of approval that prohibits ingress/egress via Browns Lane, and restricts all contractor activity to use of the Wedgewood access point only, in order to minimize root damage to redwoods #27 and #28. Toward this end, the "ideal" RPZ fence erection route would span east-west across the entire width of the property to effectively prohibit all contractor access via Browns Lane.

RPZ 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.

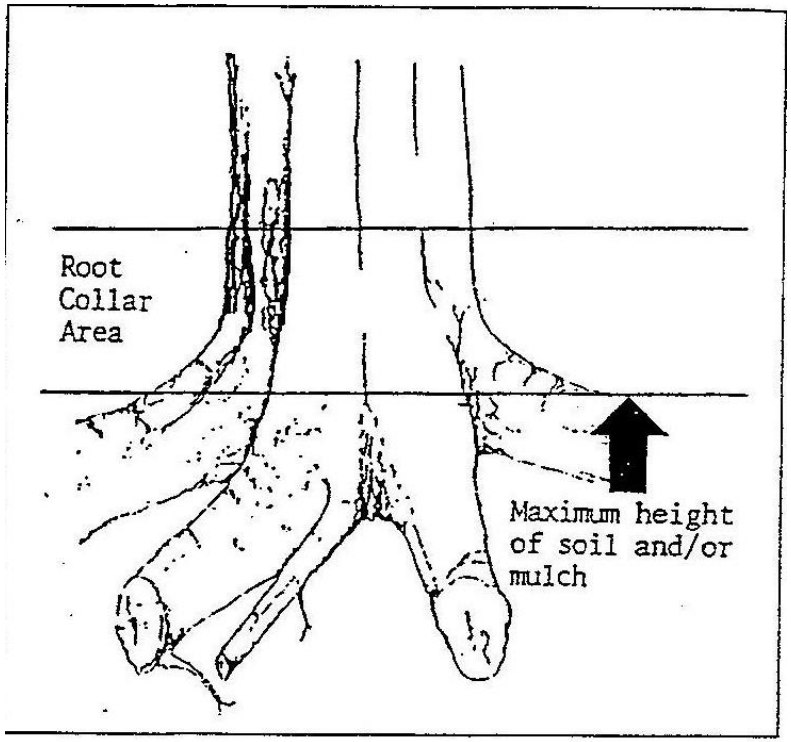
6. Tree Pruning and Maintenance:

6a. ROOT CROWN EXCAVATION (RCX):

Retain the services of an **ISA Certified Arborist** to perform root crown excavation between zero and 2 horizontal feet of the trunk edge of **oak #21**, in order to unbury the natural flaring buttress roots that would normally extend outward from the trunk base.

See the image at right showing the correct elevation of soil around a trunk (courtesy of Bartlett Tree Research Labs, USA).

The reason that soil needs to be removed from the root collar down to the indicated elevation is because this is the transition point where trunk tissue becomes root tissue. Trunk tissue is not resistant to being moist from soil contact at all times and will rot from digestion by wood decay-causing organisms, whereas root tissue can remain under soil cover at all times without rotting. Thus, when soil is present above the indicated "maximum height" line where trunk tissue begins to merge with root tissue, a tree can actually decay and die from proliferation of fungal pathogens that digest wood tissue. When soil is removed down to the indicated level, the root collar can "breath" and remain healthy.



6b. ASTRO+PENTRABARK SPRAY:

Spray Astro and Pentrabark solution onto the lower 8 feet of the mainstems of oak #21, as a prophylaxis for (assumed) bark beetle attack.

7. Irrigation Temporary (During Work Period):

Apply approximately 1x/week to 3x/week heavy irrigation to redwood specimens being retained, during the proposed site work, using any and all methods and equipment, such as soaker hoses, garden hose, water truck, tow-behind water tank and spray apparatus, etc.

Apply water over a large square footage of the trees' root zones (i.e. not at trunk base). Irrigation should occur between zero and 30 feet out from trunk edge.

Volume: +/- 100 to 150 gallons per large redwood tree per week.

Right: Image of a spray tank apparatus on one of the CTA's projects, used to irrigate coast redwood specimens adjacent to the roadway. When using spray tanks, the application needs to be at least 3x to 4x/day on a single irrigation day, because a large amount of water is being applied relatively quickly. Spray tank application of irrigation water can often cause runoff and soil erosion without actually penetrating down into the root zones of trees, unless multiple heavy applications are performed over a few hour period. Use of straw wattles and other "dams" (watering berms) are set up to force water directly downward into the root zones of trees being retained.

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 for properties >10,000 sq.ft.) [2,4]	Single Family Residential Replacement for Properties <10,000 sq. ft.[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.

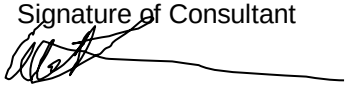
Treatment, pruning, and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate 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



Walter Levison

DIGITAL BADGES:

ISA CERTIFIED ARBORIST CREDENTIAL:
https://certificates.isa-arbor.com/f1918723-df46-48cc-ace2-c12625530fec?record_view=true

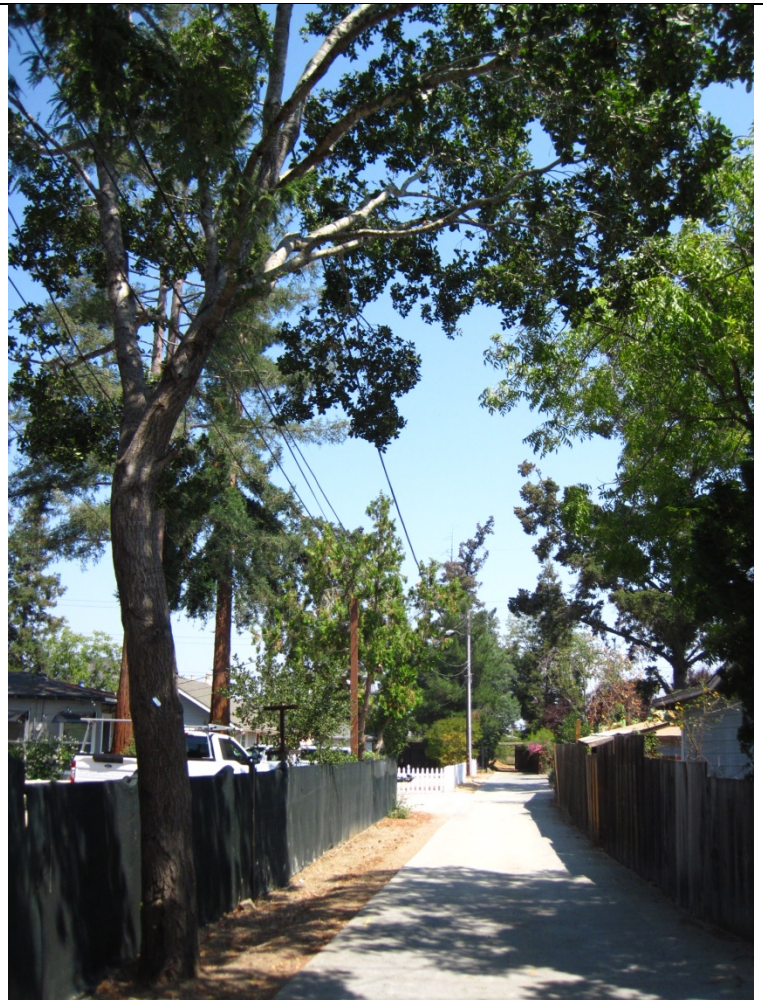
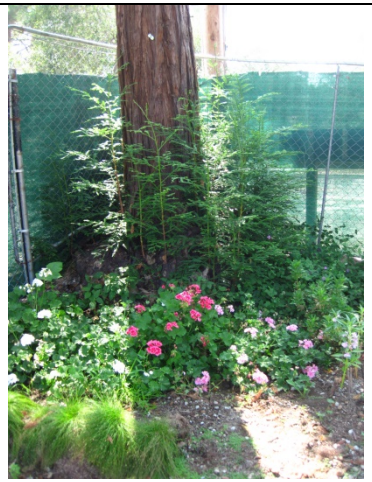
ISA TREE RISK ASSESSMENT QUALIFIED (TRAQ):
https://certificates.isa-arbor.com/d180515f-ab75-440b-9c66-106005e3cf10?record_view=true#gs.hpb30w

10.0 Digital Images

Below: Digital Images by the CTA archived August, 2021

Tag #	Image	Tag #	Image
21		21	

21		22	

22	 Tree is located along Browns Lane.	23	  This tree was severely pruned by PG&E to clear high voltage wires and other equipment in the right of way. This severely downgraded the tree's structure and health.

24	 It appears that the root crown morphology of this tree was compromised by presence of some growth impediment such as a curb or patio (?) that was recently demolished prior to the CTA's arrival on site. It is quite possible that the tree is missing a large percentage of its radially-extended woody roots (not verified). Tree stability is currently not known, and outside the scope of this Town arborist report writing assignment.	24	 There is somewhat of an S-bend at height that may or may not have been related to past topping pruning (?). It is possible that the tree could have been completely topped in the past, and then regrew with a new mainstem and canopy above that cut point (see the uppermost portion of this image).

25		26	
The Raywood ash species is in decline throughout the Bay Area since maybe 10 to 15 years ago, when the Raywood ash decline syndrome was noticed by UC Cooperative Extension agents working with urban forest trees. It is quite possible that this tree will continue to decline and die outright within 1 to 5 years, from the date of writing.		This tree is a low value evergreen species.	

27		27	

28		28	

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	MAINTENANCE AND PROTECTION
21	*Quercus agrifolia*	Coast live oak	24	20	17	61	35/60	50/50	50% Fair		X	Poor				X	Tree appears to be owned by County or Town of Los Gatos. Tree root crown buried in fill, and needs to be dug out to unbury the flaring buttress roots. Bark beetle attack appears to be causing flux on lower trunk (see photos by the CTA in this report). Apply Astro or other pesticide. Tree has been directionally pruned into a "V" to clear overhead high voltage electrical wires. Critical Root Zone = Approx. 25 feet radius Proposed driveway subbase prep and base prep excavation will cause severe root loss if the project does not use alternative build specs.	TB, RPZ, W, RCX, and use triaxial or biaxial geogrid laid over existing soil grade within 25 feet of the trunk edge, to allow the entire driveway profile to be built up over the oak tree root system with little or no loss of root function. Use of a geogrid will also allow us to eliminate all subbase prep such as scarification or recompaction. Edging will also need to be zero-cut depth. ("no-dig" construction).

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	MAINTENANCE AND PROTECTION
22	*Quercus agrifolia*	Coast live oak	14.1	-	-	14.1	30/20	65/45	54% Fair		X	Mod	North east	North east			Tree located on Browns Lane, just 30" offset from the existing road bed. Trunk systems lean north east due to redwood #23 canopy conflict/shading. Tree has been liontailed by the property owner to remove lower and inner live wood and foliage, which has permanently damaged the tree's health and structure.	TB, RPZ fencing.
23	*Sequoia sempervirens*	Coast redwood	25.9	-	-	25.9	30/25	35/30	33% Poor		X	Poor					Tree is a remnant parasol of foliage at after having been top pruned by PG&E to remove the entire mainstem and canopy at 25 to 30 feet elevation. Tree has a "poor" tree conservation suitability rating due to its compromised structure after topping pruning. Critical Root Zone = 12 feet radius offsets for construction.	TB, RPZ, Heavy Water

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	MAINTENANCE AND PROTECTION
24	*Sequoia sempervirens*	Coast redwood	46.1	-	-	46.1	70/45	40/30	34% Poor		X	Poor					Some buttress roots may be missing on north side of root crown where there is an anomaly due to the assumed past presence of curbwork or other impediment that prevented the tree from extending normal radial roots. Tree is being well-irrigated by owner. Live twig extension and foliar density is poor. South side of canopy was removed by PG&E to clear high voltage wires between roughly 30 and 50 feet above grade.	TB, RPZ, Heavy Water. Fencing should be erected at roughly 15 to 25 feet minimum radius from trunk edge in all directions.
25	*Fraxinus* 'Raywood' NEIGHBOR TREE	Raywood ash	16	-	-	16	30/40	30/30	30% Poor		X	Poor					Tree overhangs the project area by at least 15 to 20 horizontal feet. Trunk located on neighbor property. Species is not a good choice for long term preservation due to susceptibility to decline and death from Raywood ash decline syndrome. Live twig extension and foliar density is currently very poor to poor. No protection is needed, as this area of site is already built out and is to remain as-is.	n/a

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	MAINTENANCE AND PROTECTION
26	*Evergreen species (not verified)* Probably *Juniperus* or *Cupressus*	Evergreen tree species (not verified) Low-value tree species	8.7	5.8	-	14.5	23/15	40/30	33% Poor		X	Poor					Tree has been severely pruned back to clear existing overhead electrical drop wire, etc. Poor to moderate live twig extension and foliar density. Bark inclusion type fork noted at 2 feet elevation. This is a low-value tree species in poor overall condition rating.	TB, RPZ, Water

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	MAINTENANCE AND PROTECTION
27	*Sequoia sempervirens*	Coast redwood	32	27	-	59	90/35	46/55	50% Fair		X	Mod					Moderate overall live twig extension and foliar density. Tree exhibits two mainstems with normal wide fork at 1 to 2 feet elevation. Lignotuber bulges out to at least 2 or 3 feet from centerpoint of the massing. Owner is providing good “heavy” irrigation to the tree at time of writing, which is great, as these coast redwoods do require 100’s of gallons of irrigation each month year-round to thrive, especially when root systems will be compromised to some degree during construction. Critical root zone is roughly 20 feet radius for construction offsets. The finalized position of the new basement and foundation work will apparently be at or farther than this distance, per my discussion with owner at site. Note canopy has been limbed up to 23 feet elevation, which is already “excessive”.	TB, RPZ, and Heavy Water (Irrigation) If possible, fence off the entire north side of the property to prevent all access by contractors, so that this tree’s root system impacts will be minimized and all construction material and vehicle movement and storage will occur southward of the proposed new main residence basement excavation edge.

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	MAINTENANCE AND PROTECTION
28	*Sequoia sempervirens*	Coast redwood	30.1	-	-	30.1	85/30	35/20	26% Poor		X	Poor					Irrigation status of this tree is not known, since the root system is located under a gravel-surfaced open soil type driveway that has received decades of motor vehicle travel, but is probably at background low compaction rate. Scaffold limbs have been removed to 25 feet elevation. The majority of the remaining scaffold limbs are in "downward drooping orientation", due to a rare, genetically-controlled morphology which has caused the tree to develop a very narrow diameter canopy. The tree is expected to survive construction, if site plan contractors are restricted from accessing this northmost area of the property (i.e. if all ingress/egress via Browns Lane is prohibited). Regular heavy irrigation may or may not help boost the tree's overall live twig extension and foliar density ("TDE"). Very heavy irrigation has improved TDE of subject coast redwood specimens in the past.	TB, and Very Heavy Irrigation. Prohibit contractor access via Browns Lane. Restrict all site work, ingress/egress, etc. to the Wedgewood side of site only. Toward this end, Town Staff may want to require that a chain link exclusion fence be erected in an east-west orientation across the entire width of the property, as a barrier between the existing "ADU" residence and the proposed main residence construction area.

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[1]

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)

[1] 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 sheet A-1.0 site plan dated March, 2021 by Lazari Design of San Jose, California as the basis for the tree location map markup on the following page of this CTA arborist report.

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

a. Trunk plot dots are enlarged as black circles.

b. (Tree canopies were already indicated by the architect, and are somewhat accurate in terms of true scale radius and diameter).

c. Yellow highlighting indicates the applicant's proposed subterranean basement excavation cut daylights (farthest extent). The applicant has expressed to the CTA during his field visit that a 3rd round submittal set has been sent to Town of Los Gatos, showing a farther offset distance between redwood #27 edge of trunk massing, and the proposed garage limit of excavation, such that the new limit of excavation is roughly 18 linear feet from the trunk base edge (i.e. roughly the Critical Root Zone offset distance from trunk edge), which is good.

d. Magenta highlight indicates the author's approximate proposed area where triaxial geogrid should be laid down over the soil surface to provide increased load capacity and allow for what is known as a "no dig" (floating) type driveway design where the entire set of layered materials is literally built up over existing soil grade elevation, avoiding excavation and avoiding subbase scarification and recompaction, which will help preserve and protect tree roots extended from redwood #27.

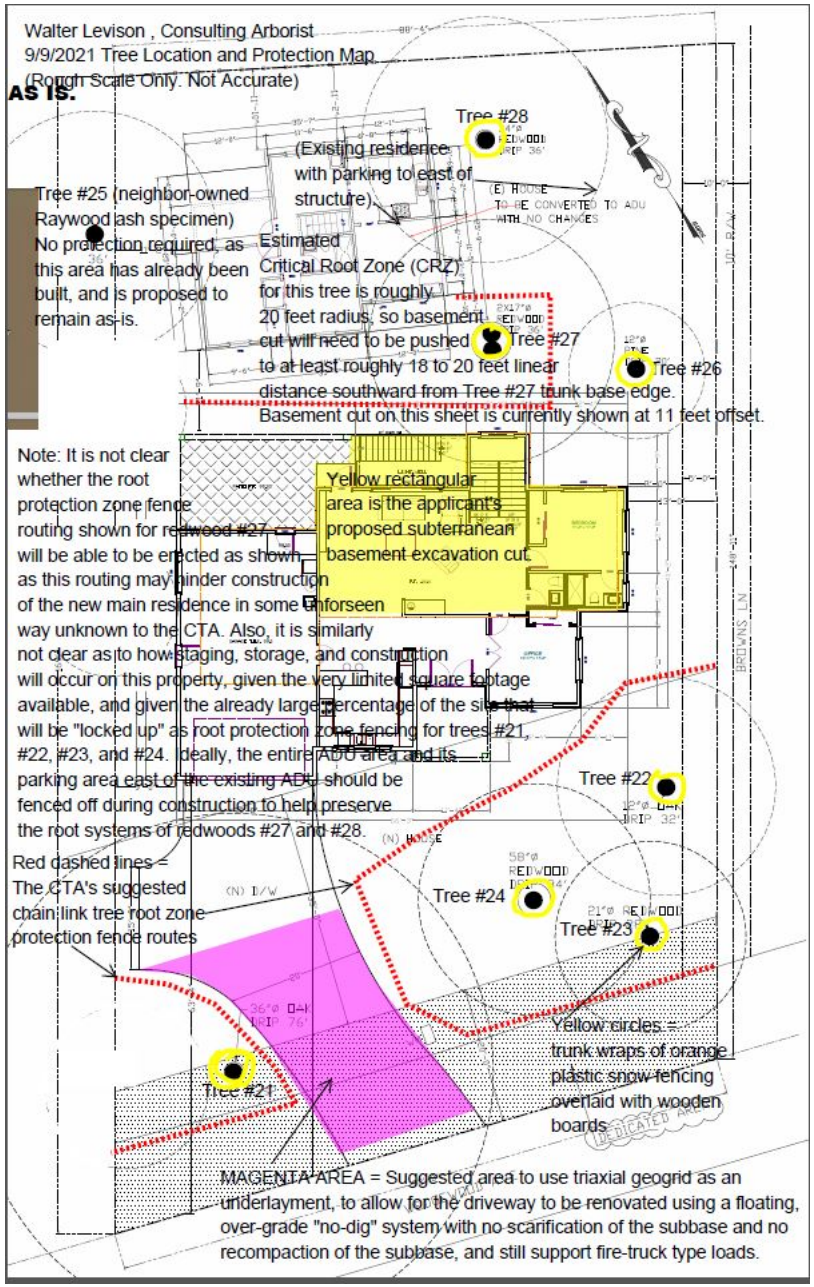
e. The red dashed lines indicate the CTA's suggested routing for chain link tree root protection zone fencing, to optimize tree root preservation and protection. At the time of writing, it is not entirely clear whether all of the suggested routes can be effectively installed without hindering proposed main residence construction, staging, storage, ingress, egress, etc.

   This is a subject for further discussion with the applicant, since the more square footage we can protect behind chain link fencing, the better the root systems around trees #21, 22, 23, 24, 25, 26, 27, and #28 will be preserved and protected during construction.

   From the CTA's perspective, ideal tree root protection and preservation for redwoods #27 and #28 would require that the entire north 1/3 of the property would have to be literally fenced off with a single length of chain link fencing to block all contractor access to the existing small residence and its existing parking areas north and east of the small residence. However, it is simply not clear at the time of writing whether this is feasible, given the large size of the proposed new residence and the extent of proposed excavation and construction.

   At the very least, it would be beneficial if Town Staff could prepare a planning division condition of approval (COA) that prohibits all ingress/egress by contractors via Browns Lane.

Below: Tree Map Markup by the CTA Version 9/9/2021



13.0 Attached Below: Appraisal Worksheet by the CTA

Appraisal information 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"
17291 Wedgewood, Los Gatos, CA 9/9/2021

								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
21	Qa	30	0.5	0.5	0.6	52%	**multi stem total**	50%	90%	3	3.8	$250.00	$65.79	987.00	$ 64,934	$ 15,049	**$15,000**
22	Qa	30	0.65	0.45	0.7	52%	14.1	50%	90%	3	3.8	$250.00	$65.79	156.07	$ 10,267	$ 2,391	**$2,390**
23	Ss	34	0.35	0.3	0.4	32%	25.9	40%	90%	4	4.75	$250.00	$52.63	526.59	$ 27,715	$ 3,218	**$3,220**
24	Ss	34	0.4	0.3	0.6	36%	46.1	60%	90%	4	4.75	$250.00	$52.63	1668.29	$ 87,805	$ 17,069	**$17,100**
25	FR	16	0.3	0.3	0.6	35%	16	50%	90%	2	2.24	$250.00	$111.61	200.96	$ 22,429	$ 3,482	**$3,480**
26	Tree sp.	n/a	0.4	0.3	0.4	33%	**multi stem total**	60%	90%	2	2.24	$250.00	$111.61	81.00	$ 9,040	$ 1,611	**$1,610**
27	Ss	34	0.46	0.55	0.7	56%	**multi stem total**	70%	90%	4	4.75	$250.00	$52.63	430.00	$ 22,632	$ 7,970	**$8,000**

Walter Levison
CONSULTING ARBORIST

Valuation Appraisal Worksheet Based on *Guide for Plant Appraisal, 10th Edition* , 2nd Printing (2019) "Functional Replacement Method / Trunk Formula Technique"

17291 Wedgewood, Los Gatos, CA 9/9/2021

								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
28	Ss	34	0.35	0.2	0.6	28%	30.1	70%	90%	4	4.75	$250.00	$52.63	711.22	$ 37,433	$ 6,662	**$6,700**

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%

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 *Guide for Plant Appraisal.* The ATA value is smaller than the actual trunk diameter, and brings the tree's appraised dollar value down to a more "reasonable" level.

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.

4. CONDITION RATINGS / APPRAISAL TABLE VS. DATA TABLE: Because of the new appraisal methods outlined in the 2019 edition of the Guide for Plant Appraisal, 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).

Total Appraised Value of the Study Trees Proposed to be Retained and Protected

$57,500