Response to Arborist Comments

August 16, 2021

Bone Structure

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Owner:	Vista del Valle LLC
Permit Address:	16461 South Kennedy Road
Application #	**S-18-043**
Project:	**Vista del Valle Residence**

CONSULTING ARBORIST RECOMENDATIONS

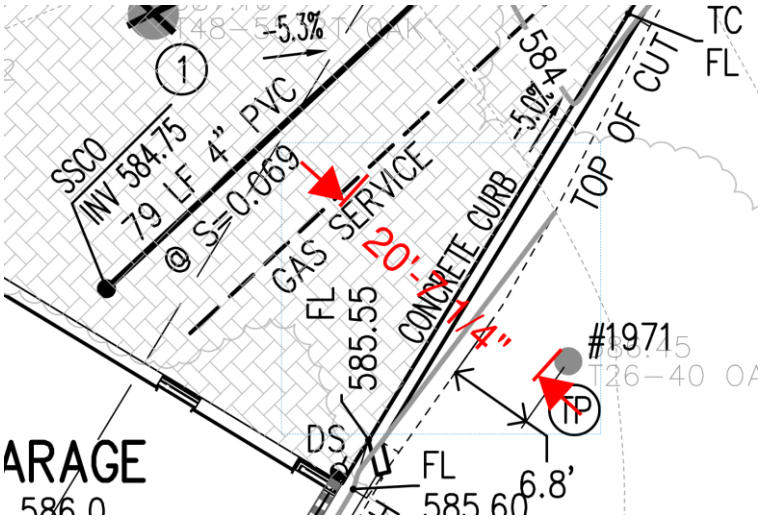
1. Project Arborist ("PA"): It is recommended that a third party ASCA registered consulting arborist or ISA Certified Arborist with good experience with tree protection during construction be retained by the applicant, to provide pre-project verification that tree protection and maintenance measures 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, at 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". The PA shall work with the project team to directly monitor a portion of the following items such as, but not limited to the following (see recommendation item #2 below for details):
    a. Retaining wall footing excavation near trees #32, 33, 34, and #35 along S. Kennedy Rd.
    b. Roadway widening and roadway reconstruction (excavation) along S. Kennedy Road near trees #32, 33, 34, 35, 236, 37, 39, 40, 41, 42, 43, and #44.
    c. Driveway/curb near to tree #1971.
    d. Utility trenching for gas service, sewer service, and water service pipe installations near trees #1971, 1973, 1974.
    e. Joint Trench work along S. Kennedy Road, to verify that the work will be tightlined toward the west edge of the road (thereby optimizing preservation of roots connected

to larger older oaks such as #39, 40, 41, 42, 43, and #44 on the East side by staying as far as possible from those six trees).

Response: **Acknowledged. The team will hire a Project Arborist to over see the above specific items in addition to their normal project scope.**

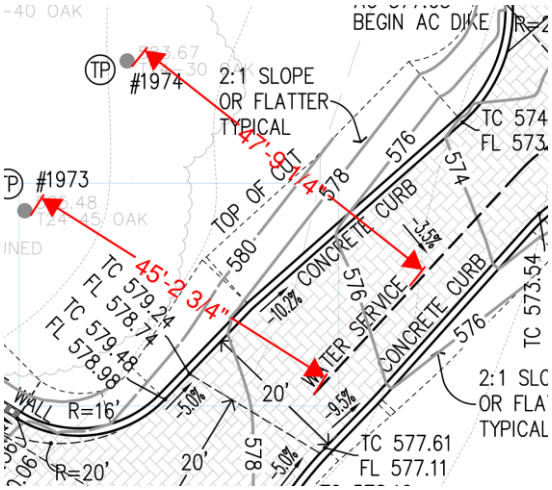
2. Project Team Pre-Project Adjustments, Clarifications, and Limits Suggested or Required:
   a. <u>Water, Gas, Sewer Service Trench Alignments On-Site</u>: It is suggested that the project team "finalize" the alignments of the proposed utility trenches, such that trench side walls are at least 20 feet offset from the trunk edges of trees #1971, 1973, and #1974. These alignments are not shown completely on PDF plan sheet 26 of 29 grading and drainage version December, 2020. An offset of 20 feet from tree trunk edges would be ideal. Toward this end, it is suggested that:
      i. Gas and sewer pipe routes be pushed to underneath the driveway footprint such that they remain 20 feet or greater offset distance from tree #1971.

Response: **The gas and sewer routes have been pushed toward the center of the driveway to offset the distance from tree #1971 of 20 feet or greater. See screenshot below.**



   ii. The water pipe route be tightlined against the new fire truck driveway footprint, to maximize root preservation around trees #1973 and #1974.

Response: **The water line has been moved so that there is a distance of more than 45 feet from trees #1973 and #1974. See screenshot below.**



b. Joint Trench (JT) Alignment / S. Kennedy Road: Project team shall verify that the final alignment for the joint trench (gas, sewer, water) is to be exactly along the double dashed lines indicated on the grading and drainage plan sheet (PDF sheet 26 of 29) in the December, 2020 submittal set of plans reviewed by Town Planning Division. The proposed alignment as shown on the December, 2020 version of sheet 26 is the best alignment in terms of preserving tree roots extending from the older, larger oaks along the east side of the roadway (oaks #39, 40, 41, 42, 43, 44).

Response: **See Civil Sheet 4 of 7 on the August, 16 2021 set for the most current joint trench alignment which accommodates this concern.**

c. Driveway/Curb: If possible, all curb footing excavation and all excavation for baserock base section prep under the proposed new driveway footprint should be eliminated within at least 13.5 feet of the trunk edge of oak #1971, by use of a biaxial or triaxial geogrid as an underlayment to be pinned down directly over the soil surface. This is considered a "no dig" or "floating" system that requires no subbase scarification or recompaction, and no excavation of any sort below the existing soil surface grade elevation. All baserock base section work is set over the geogrid layer.

Response: **Since the proposed driveway is roughly 7 feet away from tree #1971, the project team will propose using a geogrid product or similar for this condition.**

d. Land Grading: If possible, eliminate land grading between the proposed new driveway curb and the trunk edge of oak #1971. If possible, eliminate land grading proposed for the area uphill from the fire truck driveway curb edge, in order to maximize root retention near trees #1973 and #1974.

Response: **The grading needs to remain as shown on both locations to properly construct the driveway at proposed grade. The distance from top of cut to tree #1971 is 6.8 feet, TOC to tree #1973 is 15 feet and #1974 have roughly 14' and 25' distance from top of cut.**

e. Retaining Wall Along Roadway / Footing Options / S. Kennedy Rd.: I t is suggested that the project team design and build a wall system that utilizes a "discontinuous footing" (i.e. vertical pier and shallow lateral grade beam) to minimize footing excavation-related damage the lateral woody root systems of trees #32, 33, 34, 35. Depth of footings can be of any depth, but to avoid conflicts with the tree canopies of the above-noted work, it is suggested that the team use a "two-person breakdown type drill rig" which requires only 12 feet of vertical airspace clearance to operate. See image above right showing a breakdown type drill rig in use on a project where the CTA required its use for retaining wall construction directly under the canopy dripline of a heritage tree specimen.

Response: **Recommendation noted by project team. Project team has designed the vertical stacked rock retaining wall per Hillside Guidelines and to have minimal footing excavation.**

f. Roadway Renovation / S. Kennedy Road:

i. It is suggested that the project team consider reducing the extent of roadway widening and profile rebuilding to extend the distance between limit of road work and the trunk edges of oaks #39, 40, 41, 42, and #43. The current plans show very close proximity between proposed new work and the trunk edges of these five trees.

Response: **The existing roadway is already relatively close to these trees. The widening (shown as a light gray shading) occurs on the opposite side of the road and is designed as required for the Fire Apparatus Road standards as needed for life safety per SCC Fire**

ii. Project team shall verify that there will not be a subbase preparation (i.e. "scarification and recompaction") requirement associated with this project's roadway renovation work. Current specifications shown on grading and drainage sheet 26 of 29 of the applicant's PDF plan sheet set indicate that there is only 2" depth of cut for AC replacement, and 6" depth of cut for baserock base section replacement. The plans as currently written do not indicate a subbase prep work requirement as far as the CTA can discern.

Response: **Correct. The Civil Grading and Drainage Plans do not call for subbase preparation and calls for 2" AC over 6" aggregate base.**

iii. If there is a subbase scarification and recompaction requirement associated with roadway work, then the applicant shall build the roadway using a geogrid product that has load-bearing capabilities equal to that of Tensar TX160, within zero to 20 linear feet of the mainstem edges of trees being retained in the following group of oaks (tags #36, 37, 39, 40, 41, 42, 43, & 44). Use of a geogrid with this level of load-bearing capability, in the CTA's experience, has allowed for firetruck-ready driveway work to proceed while eliminating any need for subbase scarification or recompaction.

If it is determined at the building permit stage that subbase scarification and recompaction is proposed within 20 linear feet of the trunk edges of oaks #36, 37, 39, 40, 41, 42, 43, & 44, without the installation of a high performance model geogrid underlayment product, Then the project team shall notify Town Planning Staff, as this will trigger additional review of the proposed roadway renovation work by the CTA.

Response: **Acknowledged. If a subbase scarification and recompaction is needed for the roadway work the applicant will use the geogrid product or similar as needed.**

iv. As per item #2(d) above, consider use of a discontinuous footing type retaining wall for the proposed new wall area adjacent to trees #32,33, 34, 35.

Response: **Noted above.**

g. Landscape Plan / New Tree Installation On-Site:

i. Project team shall upgrade the November, 2020 landscape plan sheet L4.0 to eliminate all proposed 15-gallon size tree plantings, and instead note those trees as "24" box size" trees, in order to comply with the Town's canopy replacement standard table and the CTA's analysis of required new tree plantings per section 1.0 of this report.

Response: **Sheet L4.0 has been revised to show 24" box size trees for replacement.**

ii. All 'Thundercloud' plums currently shown on the proposed landscape plan sheet L4.0 shall be removed from the plan, given the limited long term usefulness of this tree in the landscape. The preferred small tree to use instead of Thundercloud is Tristaniopsis laurina (Elegant swamp myrtle): a clean, pest and disease resistant evergreen tree that has a proven track record in the bay area as a dependable performer.

Response: **Thundercloud Plum trees has been removed and replaced with 24" box Swan Hill Olives.**

iii. The finalized sheet L4.0 should indicate installation of new Tristania laurina specimens on site, 24" box size, quantity to be determined by the project team

Response: **The applicant has shown 24" box Swan Hill Olives in lieu of the Tristania laurina**

3. Pruning & Tree Maintenance:

a. ISA Certified Arborist: Retain the services of an ISA Certified Arborist to perform pruning work on trees requiring clearance pruning or other pruning work on-site and/or along South Kennedy Road.

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

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

b. Minimum Pruning Only: Perform only the minimum-required clearance pruning to allow work to proceed as proposed, while maintaining adherence to all ANSI-A300 standards in terms of pruning cut types, pruning cut locations, ratio between branch diameters removed in relation to branch diameters being retained, etc.

   Typically, most or all pruning should concentrate on performing what is known as "branch length reduction pruning" or "endweight reduction pruning", where the end portions of limb systems are shortened by removing the outermost ends of the limb systems back to branch forks, thereby shortening the system and reducing load forces acting on the attachment points of those limb systems.

c. Three-Step Cut: Use only the "three step cut" method when performing pruning cuts:
   i. Undercut the branch or limb in an upward manner part way through the cross section of the branch or limb, to prevent a peel-out (bark tear).
   ii. Overcut the branch or limb in a downward manner, just beyond the undercut.
   iii. Perform the final third cut to remove the remaining stub back at the branch attachment point, without injuring the branch bark ridge or other attachment point collar.

d. Best Management Practices: All pruning shall conform to the most current iteration (2017) of ANSI-A300 tree, shrub,and other woody plant maintenance / pruning and the new 2019 Best Management Practices Tree Pruning Third Edition companion pamphlet to the ANSI-A300 pruning standards, published by International Society of Arboriculture.

Response: **Pruning recommendations acknowledged.**

4. New Irrigation Piping and Landscape Plantings:
   a. Review: Provide a landscape plan sheet to Town Staff for review. All new irrigation hard PVC pipe trenching shall be offset at least 25 feet from the trunk edge of any tree being retained both on and off site.
   b. Piping: For areas within 25 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 destroy tree root systems.

      Various U.S. companies such as Jain and Salco, among others, make what is known in the trade as "commercial grade" ½" diameter flexible PVC tubing that is black colored, UV-resistant, and rated for over-grade use in terms of durability, due to the extremely thick walls of the tubing material. This type of thick-walled tubing is far more rodent resistant and vandal resistant than standard residential ½" diameter "brown tubing" used by residential landscape contractors which can become melted or chewed over

time due to glare, rodent chewing, and other factors. See sample image at right showing surface irrigation at one of the CTA's Bay Area sites.

Response: **Acknowledged. Staff will receive an irrigation plan in the permit set.**

5. Trunk Buffer Wrap Type III Protection: Prior to demolition commencement, install trunk buffers around all trees being retained both on-site and off-site. Wrap one (1) entire roll of orange plastic snow fencing around the trunk of each single tree, between grade and 6 to 8 feet above grade to create a padding at least 1 to 2 inches thickness around each tree trunk. Stand 2x4 wood boards upright, side by side, around the entire circumference of the trunk. Affix using duct tape (do not use wires or ropes). See spec image at right showing the wooden boards correctly mounted against one entire roll of orange snow fencing, such that the wood does not actually touch the trunk at all.

Response: **Acknowledged. Applicant will provide proper tree protection throughout the course of the construction project.**

6. Chain Link Fencing Type I and/or Type II Root Protection Zone (RPZ):
    a. 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.
    b. 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.
    c. 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 alignments of work items). This fencing must be erected prior to any heavy machinery traffic or construction material arrival on site.
    d. 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".
    e. No storage, staging, work, or other activities will be allowed inside the RPZ except with PA monitoring.

Response: **Acknowledged.**

7. 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.

Response: **Acknowledged. Proper site signage will be installed for the project.**

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

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

Response: **Acknowledged.**

9. Tree Removal Permitting / Removal of Protected-Size Trees/Mitigation: The applicant's proposed removal of fourteen (14) trees includes #31, 38, 1960, 1961, 1962, 1963, 1964, 1967, 1969, 1970, 1972, 1979, 1980, and #1981. Removal of the above 14 trees will require that a canopy replacement of minimum forty-one (41) 24" box size replacement tree plantings be installed on site with high flow type (e.g. 2 gallon per minute bubblers, two per each tree) irrigation set directly over the rootball of each new tree. The revised landscape plan proposed by the applicant dated November, 2020, includes only twenty-one (21) 24" box size trees, and eighteen (18) 15-gallon size trees to be installed on site. The CTA recommends the following adjustments to the plan (as noted above in arborist report section 1.1):
   a. Revise the plans such that 'Thundercloud' plum is replaced with Tristaniopsis laurina (Elegant swamp myrtle), which is a far better small tree than Thundercloud plum.
   b. Revise the plans such that the 15-gallon size Thundercloud plums are eliminated and replaced with 24" box size swamp myrtle plantings.
   c. Pay an in-lieu fee of $3,000 ($250 per each required mitigation planting) for the twelve-tree difference between the required 41 plantings and the shown proposed new 29 site plantings, or simply update the plans to include twelve (12) additional swamp myrtle and/or other tree species plantings on site to achieve the minimum forty-one (41) required 24" box size plantings. (Another option would be to add additional tree plantings beyond the currently proposed 29 count of new on-site tree plantings. The applicant team can discuss this with Mr. Ryan Safty, Town Staff Planner, to determine an appropriate solution that involves a combination of both on-site canopy replacement tree installations, and an in-lieu fee payment).

   Ideally, two (2) high flow type adjustable bubblers each emitting 2 gallons per minute (2GPM) are set 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 ™ affixed per the standard spec image at right. Note how 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 is formed around the rootball to force irrigation water to pool up directly over the rootball, as seen in the image at right.

Response: **Acknowledged. Due to revised tree spacing and plantings per fire dept. requirements, the current plan shows 17 replacement trees. Therefore, the difference between the**

41 required plantings and the plans would be eighteen trees totaling $4,500 for the Town in-lieu fee (18 x $250). Applicant to pay the in-lieu fee for this difference.

10. Temporary Irrigation for Native Oaks Being Protected in Place (PIP) During Construction:
    Volume per week: TBD.
    Application locations: TBD.
    Application methods: TBD.
    See image above showing a 100-foot long soaker hose setup with wood chip mulch around a large coast redwood specimen being retained during construction on a Walter Levison project. Palo Alto, California.

    Native oaks are sensitive to summer and fall period irrigation applications. Therefore, consult with the project arborist (PA) to determine an appropriate watering schedule, if any, for temporary root zone soaking of native oaks being retained at this site during active construction. A typical specification for temporary irrigation of native oaks would be something like: NATIVE OAK TEMPORARY IRRIGATION:
    a. Apply 100 to 200 gallons per native oak specimen tree, applied all on a single day, once a month, as far offset as possible from the trunk edge.
    b. Do not apply irrigation water within 15 linear feet of the trunk edge.
    c. Do not apply irrigation at a frequency greater than 1x/month.
    d. Application method can be via soaker hose, garden hose trickle, tow-behind water tank/spray apparatus, or water truck.
    e. If the site is sloped, use some type of contoured earthen dyke, or straw wattle pinned to the ground, to force the water to infiltrate the tree root zone, prevent runoff, and prevent water from migrating within 15 feet of the trunk. See image at right, showing how Stanford University forced heavy irrigation water downward into the root zone of a large camphor tree specimen using multiple lengths of pinned down straw wattle, at one of the CTA's tree protection sites in 2019 during renovation of a walkway.

Response: **Acknowledged.**