COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: June 28, 2017

TO: Planning Commission

FROM: Planning Staff

SUBJECT: EXECUTIVE SUMMARY: Consideration of a Minor Subdivision, pursuant to Section 7010 of the San Mateo County Subdivision Regulations, to subdivide a 23,641 sq. ft. parcel into three (3) parcel lots and assign the name "Cardinal Court" to the new private street, located at 2050 Santa Cruz Avenue, in the unincorporated West Menlo Park area of San Mateo County.

County File Number: PLN 2016-00226 (Silicon Valley Real Ventures LLC)

PROPOSAL

The applicant proposes to subdivide an existing legal 23,641 sq. ft. residential parcel into three (3) residential lots, with Lot 1 being 7,911 sq. ft., Lot 2 being 7,865 sq. ft., and Lot 3 being 7,865 square feet. All three lots would be accessed by a 160-foot long private roadway off of Santa Cruz Avenue. The project includes the installation of a joint utility trench for water and power, stormwater drainage collection features and sanitary sewer laterals. Four (4) significant sized trees (including two oak trees in the proposed roadway) are to be removed, as well as several other non-significant trees in poor health and located within the development footprints of Lots 1 and 3). The applicant is also proposing to name the new private road accessing the subdivision "Cardinal Court."

RECOMMENDATION

Approve the Minor Subdivision and Street Naming, County File No. PLN 2016-00226.

SUMMARY

On December 1, 2016, this project was considered by the Zoning Hearing Officer (ZHO). However, due to concerns relating to tree preservation and tree removal associated with the private roadway's proposed location and that of drainage/sanitary lines, the ZHO referred the item to the Planning Commission. That decision included several directives to both staff and applicant, summarized as follows: (1) confer with Menlo Park Fire Protection District regarding the road width; (2) revise a drainage feature to prevent stormwater flowing onto the adjacent parcel; (3) accurately show the

sanitary sewer easement on proposed Lot 1; (4) submit cross sections to show the raised roadway will impact nearby oak trees while proving compliant connection to driveways leading to proposed lots; (5) assess use of a surety deposit to ensure that replacement trees are planted and preserved as needed; (6) confer with the Department of Public Works that a traffic study is not required; (7) hire a consulting arborist to peer review the applicant's arborist findings and to further evaluate potential impacts to, and preservation feasibility, for several trees impacted by the proposed private roadway, drainage and sanitary sewer line; and (8) assess the status of the City of Menlo Park's annexation efforts for this area.

Pursuant to these directives, the County-hired arborist has recommended: (1) modifications to the roadway to better preserve several oak trees between it and Crocus Court to the south; (2) implementation of stricter preservations methods for the oak trees near the roadway; (3) modifications to the installation of sanitary sewer and drainage lines to reduce the impact to several redwood trees at the rear of the parcel; (4) use of a County hired licensed arborist of specific credentials to direct, oversee, confirm and report back to the County regarding all tree protection measures and methods, as affected by all subdivision-related improvements; and (5) recommendation of general tree preservation guidelines to be implemented.

The project is otherwise compliant with applicable General Plan Policies, as well as Subdivision, Zoning, and Street Naming requirements.

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COUNTY O1F SAN MATEO
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SUBJECT: Consideration of a Minor Subdivision, pursuant to Section 7010 of the San Mateo County Subdivision Regulations, to subdivide a 23,641 sq. ft. parcel into three (3) lots and assign the name "Cardinal Court" to the new private street, located at 2050 Santa Cruz Avenue, in the unincorporated West Menlo Park area of San Mateo County.

County File Number: PLN 2016-00226
(Silicon Valley Real Ventures LLC, Bragg)

PROPOSAL

The applicant proposes to subdivide an existing legal 23,641 sq. ft. residential parcel into three (3) residential lots, with Lot 1 being 7,911 sq. ft., Lot 2 being 7,865 sq. ft., and Lot 3 being 7,865 sq. ft. All three lots would be accessed by a 160-foot long private roadway, 20 feet wide off of Santa Cruz Avenue to serve Lot 3, then narrowing to the requisite 16-foot width to access Lots 2 and 1. The project includes the installation of a joint utility trench for water and power, stormwater drainage collection features and sanitary sewer laterals. Four (4) significant sized trees (two of which are oak trees) are to be removed. The oaks are proposed for removal to accommodate construction of the private roadway. The other two significant trees proposed for removal are in poor health and located within the development footprint of Lot 1. Five (5) non-significant sized trees are also proposed for removal due to their health and location within the development footprints of Lots 1 and 3. The applicant is also proposing to name the new private road accessing the subdivision "Cardinal Court."

This project was initially considered by the Zoning Hearing Officer (ZHO) on December 1, 2016, but, as authorized by Zoning Regulations Section 6104, the ZHO referred the matter to the Planning Commission for consideration.

The current proposal includes the following changes from that previously presented to the ZHO, as discussed in Section A.3. of this report and summarized below:

- the elevation of the proposed private roadway has been raised to allow more effective preservation of three oak trees on its left side near its entry off Santa Cruz Avenue;

- a preservation island has been added around a fourth oak tree (# 27) at the roadway's end and entry into Lot 1;

- the drainage feature along the northerly sides of Lots 1 and 2 has been slightly redesigned with a small berm (on its northwest side) to prevent overflow of stormwater toward the adjacent property (2042 Santa Cruz Avenue);

- the stormwater drainage and sanitary sewer lines, as they traverse across the rear portions of Lots 3 and 2, have been slightly relocated to ensure greater protection to four redwood trees located in the rear area of Lot 1;

- the tentative map shows the accurate location of the sanitary sewer easement (serving the adjacent parcel, 2 Crocus Court) as it traverses the westerly side of Lot 1, exiting off of and behind the subject property to a sanitary sewer connection at the end of Harrison Way;

- the tentative map shows an adjusted side setback for Lot 1 that both accommodates the sanitary sewer easement cited above and better protects two of the four redwood trees in that portion of this lot;

- a mature Coast Live Oak tree (#3), previously proposed to be relocated due to its location within the proposed roadway, is instead proposed for removal due to its size and general condition relative to its chances for survival upon transplanting; and

- at the ZHO's December 1, 2016 hearing, some residents believed that the four oak trees (#s 1, 26, 2 and 27) along the parcel's southerly edge could be saved and preserved if the proposed roadway were placed on the opposite (northerly) side of the subject parcel, the applicants have stated that they reviewed this option prior to the project's formal application, but ultimately decided to locate the roadway as initially submitted because: (1) locating it on the opposite side would result in the removal of a 17.2" diameter (DBH) Blue Oak located directly where such a relocated roadway would enter the parcel from Santa Cruz Avenue, as well as a Black Acacia (# 7); and (2) the future development of residences on all three lots (due to the lots' respective front setbacks taken beyond the roadway's edge), is the most effective way of reducing impacts on those living on Crocus Court directly to the south. While the current proposal leaves the roadway as initially proposed to the ZHO, the County hired arborist has recommended stringent preservation methods to provide the affected trees the best chance for survival.

RECOMMENDATION

That the Planning Commission approve the Minor Subdivision, and Street Naming, County File Number PLN 2016-00226, by making the required findings and adopting the recommended conditions of approval listed in Attachment A.

BACKGROUND

Report Prepared By: Dave Holbrook, Project Planner, Telephone 650/363-1837

Applicant/Owner: Silicon Valley Real Ventures, LLC (David Bragg)

Location: 2050 Santa Cruz Avenue, Menlo Park

APN: 074-091-620

Size: 23,641 sq. ft.

Existing Zoning: R-1/S-72 (Single-Family Residential/5,000 sq. ft. minimum parcel size)

Parcel Legality: A Lot Line Adjustment, recorded December 21, 2006, involving the subject parcel, confirms the parcel's legal status (this adjustment provided the current parcel an adequate total parcel size to allow the current configuration for the proposed subdivision).

General Plan Designation: Medium Density Residential (6.1 to 8.7 dwelling units per acre)

Existing Land Use: Single-Family Residence

Sphere-of-Influence: City of Menlo Park

Water Service: California Water Service Company

Sanitary Service: West Bay Sanitary District

Flood Zone: FEMA Flood Zone C (area of minimal flooding); Community Panel No. 06081C0313E; Effective date: October 16, 2012

Environmental Evaluation: Categorically Exempt CEQA Section 15315 (Class 15) Minor Land Division.

Setting: The subject property has a slight downward slope of about 2.6% from Santa Cruz Avenue in a generally easterly direction. Adjacent and just south of the parcel is Crocus Court, a private roadway that serves four developed parcels (1962 subdivision). The parcel is surrounded by residential development of one- and two-story single-family homes. There are 33 live trees of various sizes on the property (four additional trees are dead), including 11 oak trees (two of which are proposed for removal to accommodate the private roadway), and five redwood trees located toward the back of the property. The existing residence on the parcel (constructed in 1947) and driveway would be demolished to allow development of the three proposed lots.

DISCUSSION

A. KEY ISSUES

1. Previous Action by the Zoning Hearing Officer

On December 1, 2016, the project was considered by the Zoning Hearing Officer (ZHO). Due to concerns relating to tree preservation and tree removal as affected by the private roadway's proposed location and that of drainage/sanitary lines, the ZHO did not issue a decision and, instead, referred the item to the Planning Commission. That decision (Attachment C) included several directives to both staff and the applicant, as summarized and responded to below:

- County staff shall confirm with the Menlo Park Fire Protection District (MPFPD) that a narrower width driveway can be approved; and

- if deemed possible, the applicant shall submit revised plans as needed to reflect the narrower width.

  Response: The MPFPD has confirmed that a narrower width driveway (at any point along the proposed driveway's length) is not possible, pursuant to their standards.

- The applicant shall revise the project drainage plan to include a 1-foot higher berm along the entire length of the drainage swale along the northern border of the site (directly adjacent to 2042 Santa Cruz Avenue).

  Response: That revision has been made and is shown in Attachment G. As part of the revised Tentative Map details, a condition of the Final Map's recordation will be that the drainage feature be constructed, inspected and approved as shown.

- The applicant shall revise the Tentative Map to show the accurate location of the sanitary sewer easement along the western border of Lot 1.

  Response: That revision has been made and is shown on the revised Tentative Map in Attachment D.

- The applicant's civil engineer shall submit a cross-section to show how the raised roadway will: (1) minimize impact to the oak trees slated for preservation (#s 1, 2, 26 and 27); Tree Protection Plan, Attachment I); and (2) reconcile with the parcel's topography and future driveways serving Lots 2 and 3.

Response: Those sections have been submitted, as shown in Attachment E. The rationale that the raised roadway will be adequate to preserve the subject trees is discussed in Section A.3. of this report. With regard to the slope of the driveways leading from the elevated roadway to access Lots 2 and 3, the applicant's civil engineer has assured that their average incline would range from 4% to 8%, well below the maximum allowed incline of 20% as mandated by the Department of Public Works (DPW). Recommended conditions of approval require the recommended roadway revisions, together with all associated preservation measures, to be addressed prior to the Final Map's recordation.

- Staff shall evaluate the use of bonds to ensure that money is available for tree replacement should that be necessary in the future.

  Response: The rationale for and details regarding such a bond or other type of surety payment (for tree replacement) are discussed in Section A.3. of this report.

- Staff shall confirm with the DPW that this three-lot subdivision does not require a traffic study.

  Response: DPW staff has confirmed that this subdivision meets neither the criteria nor traffic generation level to require submittal of a formal traffic study.

- Staff shall hire an independent arborist to peer review the information submitted by Kielty Arborist Services, LLC, and to further evaluate potential impacts to and preservation feasibility for several trees impacted by the proposed private roadway, drainage and sanitary sewer line location impacts; and

- staff shall determine who shall pay for the consulting arborist.

  Response: As directed, the County hired Richard Gessner, Registered Consulting Arborist, to provide the above-cited peer review and evaluation. Mr. Gessner's final report is included as Attachment H. Staff's assessment of this report contributed to the subsequent recommendation for this project, as discussed in Section A.3. The County paid for Mr. Gessner's services, which included two site visits, several telephone conference calls, preparation of a draft arborist report, assessment of additional details and illustrations submitted by the applicant's engineer, and preparation of the final report.

- County Planning staff shall review and report to the Planning Commission on the status of the pending annexation process of this area to the City of Menlo Park.

  Response: The Assistant Community Development Director of the City of Menlo Park (City) and the Executive Officer of the Local Agency Formation Commission (LAFCO) confirmed that Menlo Park has not taken any action to pre-zone the area; the proposal is still being reviewed by City staff and there is currently no timetable for an official review. If the City were to eventually pre-zone this area, it would likely be of a single-family residential zoning district type which has a 10,000 sq. ft. minimum parcel size (which would effectively prohibit a new three-lot subdivision). It is not known at this time how such a pre-zoning process – or future subsequent annexation - would affect this subdivision if it receives (by that juncture) tentative approval. If there are any updates to this process, that will be communicated to the Planning Commission at the hearing.

2. Compliance with the General Plan

Upon review of the applicable provisions of the San Mateo County General Plan, staff has determined that the project complies with the following governing policies:

The County General Plan designates the subject property for Medium-Density Residential use at 6.1 to 8.7 dwelling units per acre. The proposed land division represents an average of about 7.4 dwelling units per acre and complies with the land use designation and density of the General Plan.

Visual Quality - Policy 4.14(b) specifically addresses the requirement to regulate land divisions to promote visually attractive development. The proposed lot configurations and conceptual structure layouts encourage potential future design proposals that will be consistent with surrounding parcels in the established neighborhood. Additionally, future development of residences on the three (3) lots must conform to the R-1/S-72 Zoning Regulations relative to maximum allowable building height, floor area, lot coverage and minimum required setbacks. See Section A.3. of this report for discussion regarding the project's proposed tree removal and tree preservation/protection measures.

Urban Land Use Compatibility - Policy 8.14(a) pertains to the protection and enhancement of the character of existing single-family areas. The Zoning Regulations that address parking, building envelopes, and development standards, as well as regulations regarding tree preservation,

ensure that future development will be compatible with the existing character of the neighborhood.

Urban Land Use Density - Policy 8.36 regulates the maximum allowable densities in zoning districts in order to: (1) ensure a level of development that is consistent with the land use designations, (2) plan for the efficient provision of public facilities, services, and infrastructure, and (3) minimize exposure to natural and manmade hazards. The density of the proposed subdivision translates to 7.4 dwelling units/per acre, which is within the limits allowed for the Medium-Density Residential designation of the area. All public facilities, services and infrastructure are available to serve the new parcels.

Urban Land Use Parcel Size - Policy 8.37 regulates the minimum parcel sizes in zoning districts in an attempt to: (1) ensure the parcels are usable and developable, (2) establish orderly and compatible development patterns, (3) protect public health and safety, and (4) minimize significant losses of property values. The R-1/S-72 Zoning District mandates a minimum parcel size of 5,000 square feet. The project proposes lots (ranging from 7,865 to 7,911 sq. ft.) that exceed the minimum lot size and thus complies with this policy.

3. Tree Removal, Tree Protection and Tree Replacement

As stated under the Proposal and Section A.1. of this report, the following discussion of project-related tree removal, protection and replacement is based upon both the initial report and information submitted by the applicant's arborist (the Kielty Report), and the peer review by the County-hired arborist (the Gessner Report).

Mr. Gessner, upon being retained by the County, reviewed the initial Kielty Report (Attachment K), visited the site twice to assess all affected tree conditions, locations, impacts from proposed development, and tree protection/preservation measures, and submitted his formal report (Attachment H).

The Gessner Report acknowledged the 37 trees identified on the subject property (shown on Attachment I) as originally identified and listed in the Kielty Report (dated May 6, 2016), including four trees that are dead (#s 6, 7, 16 and 34), whose removal is not regulated. The Gessner Report does not take issue with the stated tree types, sizes or health/conditions of all noted trees.

The table at the end of this section provides a summary of the cited trees by number, as well as how they are affected and proposed to be preserved; also refer to the Tree Protection Plan (Attachment I). Staffs' analysis of the

data provided in the Kielty Report, and the conclusions of the Gessner Report, is provided below. Where applicable, conditions of approval have been included in Attachment A to ensure compliance with tree protection requirements.

a. Preservation of Four Oak Trees and Removal of Two Oak Trees Due to Proposed Private Roadway (on Lots 1, 2 and 3). Both as proposed to the ZHO in December 2016, as well as currently, four oak trees located along the southern side of the proposed private roadway (#s 1, 26, 2 and 27) are to be preserved. The differences, however, between the current proposal and the ZHO proposal are as follows:

- a 22" diameter Coast Live Oak tree (#3) originally proposed for relocation would be removed; the Gessner Report concludes that the tree's size and health do not make it a good candidate to survive transplanting or retain its long-term health;

- the three oak trees near the southern, front side of the roadway (#s 1, 26 and 2) will require more ambitious preservation methods to survive, including raising the roadway to an adequate height to avoid root damage; the Gessner Report disagreed with the Kielty assessment of these trees, stating that even minimal root damage or cutting could compromise the trees' survival. That said, Gessner specified a specific method for removing existing soil without impacting roots and backfilling with structural soil. Depending upon the actual depth of the trees' roots below grade, the road surface may need to be raised at least a foot above the tree roots, depending on the roadway's road stability and load-bearing purposes. The road surface would consist of pervious material road pavers;

- the joint utility trench has been moved further away from these trees to reduce road construction impacts to their roots;

- the Coast Live Oak (#27) at the end of the roadway (at driveway entrance to Lot 1) will require more ambitious preservation methods to survive; the Gessner Report recommended a tree preservation island (as shown on revised Tentative Map and Road Section Details, Attachments D and E). Due to the tree's root orientation, it will be possible to have the proposed driveway come to about 3 feet from the trunk. Significant watering, mulching and other measures would need to occur, but the tree could be preserved with the driveway in close proximity;

- additional preservation and protection measures for all the cited oak trees are required, with conditions added (Attachment A) to

ensure all such preservation and protection measures during road construction activity are closely overseen and monitored by either a board-certified master arborist or registered consulting arborist;

- the 20.3" Coast Live Oak (#4) is still proposed for removal, as its location within the proposed roadway and severe lean do not make it a candidate to preserve or relocate given the roadway's proposed location; and

- replacement oaks shall be planted for the two to be removed, as well replacement oaks for any of those that are preserved, should they fail in the future. Conditions have been added to ensure such tree replacements (by number, size, and timing) are overseen by either a board-certified master arborist or registered consulting arborist).

b. Preservation of Five Redwood Trees and One Oak Tree Due to Proposed Sanitary/Drainage Lines (on Lots 1 and 2) and From Future Development of Lot 1. Both as proposed to the ZHO in December 2016, and currently, all of these trees are to be preserved. The differences, however, between the current proposal and the ZHO proposal are as follows:

- the applicant has proposed a greater side setback (from a 5-foot minimum) that would be designated on the westerly side of Lot 1, ranging from 12.5 feet to 25 feet plus, to accommodate both the existing sanitary sewer easement (which cannot be built upon) traversing across the parcel from 2 Crocus Court, and to allow a greater setback to foster more effective preservation of three of the five redwood trees in the side and rear corner of that lot;

- the drainage and sanitary sewer lines, as they lead back to and traverse across the rear yard area of Lot 1, have been combined and relocated to best avoid direct impacts to the redwood trees, including the requirement to use directional boring to install the utility lines between the redwood trees (#s 13 and 14) and near the oak tree (# 15), along with additional preservation and protection measures; and

- Conditions have been added to ensure all such preservation and protection measures are closely overseen and monitored by either a board-certified master arborist or registered consulting arborist, as discussed in Subsection (d) below.

c. Revised Side Setback Delineation on Lot 1 to Provide Greater Protection to Five Redwood Trees from Future Development on Lot 1. The westerly side setback proposed for Lot 1 has been adjusted to accommodate both the existing sanitary sewer easement and set back future development from the redwood trees (#'s 10, 11, 12, and 13) located within the lot's side and rear area. This setback is shown on the Tentative Map (Attachment D).

d. Long Term Assurances to Provide Oversight to Assess Health of Preserved Trees and Proper Replanting and Preservation of New Trees. In accordance with Gessner's recommendations, a board-certified master arborist or a registered consulting arborist, must ensure that all tree protection, preservation, and replacement measures are correctly implemented to specific standards of care. Additionally, Gessner's recommendations for numbers and sizes of replacement trees, generally based on the canopy width of the trees being removed (as stipulated in the table at the end of this section), have been incorporated into the revised project and conditions of approval.

Specifically, the requirements for additional tree replacement arise from two scenarios: (1) for the two oak trees being removed (#s 3 and 4; within the proposed roadway), and (2) for the four oak trees (#s 1, 26, 2 and 27; to the left and end of the roadway) in the event they fail at some point in the foreseeable future. For both scenarios, it will be critical to have such tree replanting occur with oversight by an arborist as previously cited. While the four oaks trees, if necessary, would ideally be replanted along that side of the roadway, such oversight would include choosing the appropriate native oak trees and planting them in a proper fashion in a location that would both provide screening for the ones lost and foster their long-term health.

In response to these changes, questions have arisen about how the County will ensure that oversight by a hired professional will take place, and when the County will have the opportunity to check on the health status of all preserved trees. To address these issues, the following conditions of approval are recommended and included in Attachment A:

(1) Prior to the issuance of a building permit or site disturbance associated with any future construction or related activity (e.g., demolition of house and other existing development, construction of private roadway, trenching for installation of sanitary sewer, water and drainage lines), the County shall hire (pursuant to the details and qualifications stated in Condition No. 6) either a board-certified mater arborist or registered

consulting arborist, at a cost bourn by the project applicant or property owner. Once hired, the arborist will be responsible for overseeing and directing all tree preservation, protection and long term care measures (during the span of the project, e.g., through the County's final building inspection of the third and final house) as stipulated in this report and by these conditions, including the choosing and oversight of all replacement trees (whether replacing those trees removed or as a result of trees that have failed, at the cited project junctures), including their planting, protection and long term care during the span of this project.

(2) Upon review of this project's timeline, the points at which staff will confirm that the protection and health of the trees that will be preserved, as well as those planted as replacement trees, conform to the arborist's standards of care, will occur at the following junctures: (a) upon completion of the private roadway and installation of the sanitary sewer and drainage lines (prior to recording of the Final Parcel Map); and (b) prior to each of the final building inspection approvals for the three houses to be built on all three lots.

e. Proposed Removal of Other Trees (Besides the Two Oak Trees Within Proposed Roadway). Of the 33 live trees (excluding the eleven oaks), ten are less than the 12" diameter significant threshold as defined by the County Significant Tree regulations (#s 5, 8, 9, 23, 25, 28, 29, 30, 31, 32, 36 and 37). Of those 12 non-significant trees, five (#s 5, 8, 9, 25, 30, 32, and 36) are proposed for removal due to their general health (e.g., "poor vigor, fair to poor form") and/or because they are located within the likely building footprints (as defined by minimum required setbacks) of future house development on Lots 1 and 3. The Gessner Report does not take issue with the Kielty Report relative to these trees' health nor with the proposal to remove them.

f. Revised Stormwater Drainage Collection Feature (on Lots 1 and 2) to Prevent Stormwater Spillover onto Adjacent Parcel (2042 Santa Cruz Avenue). In response to the neighbor/owner of 2042 Santa Cruz Avenue, the applicant's engineer revised the drainage feature running alongside that property, adding a berm to prevent the overflow of stormwater (Attachment G). The added berm adds about 2 feet on the side facing that adjacent property, and would not affect any trees nor associated preservation measures. Mr. Gessner has no issues with this change.

Site Disturbance Activity	Trees Affected (Tree #'s) as seen on Tree Protection Plan	Disposition of Tree and Summary of Preservation
Private Roadway (Affecting Lots 1, 2, 3)	#4 (Coast Live Oak)	**Remove and replace** with (2) 48" box Coast Live Oaks, chosen, planted in approved locations and protected as directed and overseen by arborist.
	#3 (Coast Live Oak)	**Remove and replace** with (2) 48" box Coast Live Oaks, chosen, planted in approved locations and protected under direction and oversight by arborist.
	#1 (Blue Oak) #s 2, 26 (Coast Live Oaks)	**Preserve.** Areas around trees and their roots shall be protected, with excavation and backfilling of Structural Soil® and completion of roadway occurring under direction and oversight of arborist. Should any of trees fail, each shall be replaced by a minimum 24" box native oak in approved locations under direction and oversight by arborist.
	#27 (Coast Live Oak)	**Preserve.** Typical tree protection island and fencing placed around tree. Roadway does not directly affect tree, but driveway will be worked around tree with future construction of new single-family dwelling (SFD) on Lot 1. Should this tree fail, it shall be replaced by a minimum 24" or 48" box native oak in approved location under direction and oversight by arborist.
Stormwater Drain and Sanitary Sewer Lines (Serving/Affecting Lots 1 and 2)	#s10, 11, 12, 13, 14 (Redwoods)	**Preserve.** Drainage line to be routed between trees via a directional boring method. Should any of these trees fail, each shall be replaced by a minimum 24" box redwood in approved locations under direction and oversight by arborist.
	#15 (Coast Live Oaks)	**Preserve.** Same as above.
Future Construction of Houses (Lots 1 and 3)	#s 5, 8, 9, 25, 30, 32, 36	**Remove;** no tree replacements required.
Dead Trees (Lot 1)	#s 6,7,16, 34	**Remove;** no tree replacements required.

4. Conformance with the Zoning Regulations

Below is a table listing the development standards for the R-1/S-72 Zoning District and how each proposed parcel compares with the applicable standard. The proposed parcels are compliant with the minimum required standards as follows:

R-1/S-72 Requirement	Minimum Required Lot Size	Net Proposed Lot Size	Minimum Required Lot Width	Proposed Average Lot Width
Lot 1	5,000 sq. ft.	7,911 sq. ft.	60 feet	61.69 feet
Lot 2	5,000 sq. ft.	7,865 sq. ft.	60 feet	65.0 feet
Lot 3	5,000 sq. ft.	7,865 sq. ft.	50 feet	65.0 feet

The minimum lot depth requirement of 100 feet is mandated by the County Subdivision Regulations, and is in compliance for all three (3) of the proposed parcels.

The tentative map includes conceptual building envelope layouts compliant with the following R-1/S-72 Zoning District Development Standards. Future development of single-family dwellings on the parcels would be held to the following standards:

Development Standards	Required
Maximum Lot Coverage	50%
Front Setback	20 feet
Side Setback (non-road frontage)	5 feet
Lot 3 (Side setback along Santa Cruz Avenue)	10 feet
Lot 1 (Westerly-facing Side)	10.5 ft. – 25 ft.*
* This setback (shown on Attachment D) represents a proposal by the applicant to both accommodate the sanitary sewer easement traversing along that side of the lot, as well as a greater setback to foster more effective tree preservation of the nearby redwoods	

5. Compliance with Subdivision Regulations

The proposed minor subdivision has been reviewed by staff with respect to the County Subdivision Regulations, which implement the State Subdivision Map Act. The Department of Public Works, Menlo Park Fire Protection District, and the Building Inspection Section have also reviewed the project and found that, as conditioned, it complies with their standards and the requirements of the County Subdivision Regulations.

In order to approve this subdivision, the Planning Commission must make the following seven findings, each followed by the supporting evidence.

a. *Find that this tentative map, together with the provisions for its design and improvement, is consistent with the San Mateo County General Plan.*

The Department of Public Works and the Planning Department have reviewed the tentative map and found it consistent, as conditioned in Attachment A, with State and County Subdivision Regulations. The lot sizes as proposed, ranging from 7,865 sq. ft. to 7,911 sq. ft., are significantly greater than the 5,000 sq. ft. minimum required lot per the zoning requirements, and significantly larger than most of the parcels in the surrounding neighborhoods. The project is also consistent with the County General Plan as discussed in Section A.1 of this report.

b. *Find that the site is physically suitable for the type and proposed density of development.*

This site is physically suited for single-family residential development for the following reasons: (1) the proposed parcels conform to the minimum parcel size requirements of the R-1/S-72 Zoning District, and (2) utility connections are available to serve future development; the applicant must confirm that sewer and water connections for all parcels are available prior to having the tentative map finalized.

c. *Find that the design of the subdivision and the proposed improvements will not conflict with easements acquired by the public at large for access through or use of property within the proposed subdivision.*

There is an existing 6-foot wide sanitary sewer easement leading from APN 074-091-380 (2 Crocus Court, owned by Pacifico) that runs parallel to the western boundary of proposed Lot 1, before angling to the left for connection with the sanitary sewer line within the Harrison Way right-of-way. The submitted Tentative Map (Attachment D) shows the correct location of the easement, as well as a designated side setback along that said of Lot 1 whose purpose is to entirely include the sewer easement. Additionally, Condition Number 10 will require that any future development on Lot 1 adhere to this adjusted side setback.

d. *Find that the design of the subdivision provides, to the extent feasible, for future passive or natural heating or cooling opportunities.*

Any future development could make use of passive heating and cooling opportunities to the extent practicable.

e. *Find that the design of the subdivision and the proposed improvements are not likely to cause serious public health problems, substantial environmental damage, or substantially and avoidably injure fish or wildlife or their habitat.*

The design of the subdivision will not cause serious public health problems nor will it cause substantial environmental damage. There are no creeks nearby, and thus the subdivision will not impact any fish or their habitat. Future residential development on these parcels will require review by the San Mateo County Planning and Building Department for conformance with the R-1/S-72 Zoning District Regulations and will also require building permits. Tree removal is minimized and tree protection measures will be implemented as discussed in Section A.3. of this report.

f. *Find that the discharge waste from the proposed subdivision into an existing community sewer system would not result in violation of existing requirements prescribed by State Regional Water Quality Control Board (RWQCB) pursuant to Division 7 (commencing with Section 1300) of the State Water Code as their discharge would be typical of future residential homes and not violate requirements of the RWQCB.*

The West Bay Sanitary District has confirmed that adequate sewer capacity and hook-ups are available to serve the proposed three (3) parcels of this subdivision. The discharge of waste into the existing community sewer system will not result in any violations of existing RWQCB requirements.

g. *Find that the benefits of additional housing are greater than any negative effects the subdivision would have on fiscal and environmental resources.*

The County has determined that the benefits of additional housing are greater than any negative effects to fiscal or environmental resources caused by implementation of the subdivision and they will be less than significant if the applicant complies and completes the conditions of approval in Attachment A.

6. Compliance with Standard Requirements for Road and Street Design and Improvement

The design for this private road as shown on the tentative map is in compliance with Article 3 – Section 7022 “Standard Requirements for Road and Street Design and Improvement” of the San Mateo County Subdivision Regulations.

7. Compliance with In-Lieu Park Fees

Section 7055.3 (*Fees In Lieu of Land Dedication*) requires that, as a condition of approval of the tentative map, the subdivider is required to

dedicate land or pay an in-lieu fee; in this case the in-lieu fee must be paid prior to recordation of the Final Parcel Map. Said fee is for acquisition, development or rehabilitation of County park and recreation facilities, and/or to assist other providers of park and recreation facilities to acquire, develop or rehabilitate facilities that will serve the proposed subdivision. The section further defines the formula for calculating this fee. The fee for this subdivision is $65,980.39. Fees are based on the current land value provided by the County Assessor's Office at the time of payment and are subject to change. A worksheet showing the prescribed calculation appears in Attachment L.

8. Conformance with the Street Naming Regulations

As the proposed access is to three separate parcels, the applicant is required to apply for a street name, which has been proposed as "Cardinal Court." The Planning and Building Department has formulated procedures for street naming. Prior to the Planning Commission action, three (3) tasks were involved in the processing of this application.

a. *Examination of maps to determine if there are similar or identical names within 5 to 10 miles that might be confused with the proposed street name.*

There are no other roads named "Cardinal Court" or similar within 5 to 10 miles of the project parcel.

b. *Public Notification*

(1) *When such Street Naming is in conjunction with a proposed subdivision, public notification shall follow that as required for the Subdivision, pursuant to the County Subdivision Ordinance, Section 7013.*

Public notification was sent out, via the required agenda published in the newspaper as well as the mailing of that agenda to all property owners within 300 feet of the subject parcel.

(2) *Published legal notice at least ten (10) days prior to the public hearing.*

Notice has been posted and published as required, as part of this subdivision application.

c. *Street Naming Finding*

In order to approve this request to name a private road, the Planning Commission must make the following finding:

"That the proposed street naming of "Cardinal Court" in unincorporated Menlo Park of San Mateo County would assist in the effective delivery of public services and would not be detrimental to the public welfare in the neighborhood." The street naming provides identification and safe access to the proposed lots.

B. ENVIRONMENTAL REVIEW

This project is categorically exempt, pursuant to the California Environmental Quality Act Guidelines, Section 15315 (Class 15), related to minor division of land (into four or fewer parcels in urban areas on slopes less than 20%). The project location is within an urban area and the site has only an average variable slope of 2.6% diagonally across the parcel.

C. REVIEWING AGENCIES

Department of Public Works
Building Inspection Section
Menlo Park Fire Protection District

ATTACHMENTS

A. Recommended Findings and Conditions of Approval
B. Location and Zoning Map
C. Zoning Hearing Officer Decision Letter (dated, December 7, 2016)
D. Revised Tentative Subdivision Map
E. Proposed Roadway Sections, at Trees 1, 26, 2, and 27
F. Proposed Centerline Driveway Section at Entry off Santa Cruz Avenue
G. Proposed Drainage Feature Section
H. Consulting Arborist Report (by Richard Gessner, Registered Consulting Arborist (dated, June 14, 2017)
I. Applicant's Tree Protection Plan; Showing Trees Referenced in Arborist Report and Tree Protection Fencing Detail
J. Kielty Arborist Report Addendum (dated, May 3, 2017)
K. Kielty Arborist Report (dated, October 14, 2016)
L. In-Lieu Park Fee Worksheet

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Attachment A

County of San Mateo
Planning and Building Department

RECOMMENDED FINDINGS AND CONDITIONS OF APPROVAL

Permit or Project File Number: PLN 2016-00226 Hearing Date: June 28, 2017

Prepared By: Dave Holbrook, Project Planner For Adoption By: Planning Commission

RECOMMENDED FINDINGS

Regarding the Environmental Review, Find:

1. That the project is categorically exempt, pursuant to the California Environmental Quality Act (CEQA) Guidelines, Section 15315 (Class 15), related to minor division of land (into four or fewer parcels) in urban areas on slopes less than 20%. The project is in an urban area and the site has an average slope of 2.6%.

Regarding the Subdivision, Find:

2. That this tentative map, together with the provisions for its design and improvement, is consistent with the San Mateo County General Plan, as described in the staff report under Section A.2.

3. That the site is physically suitable for the type and proposed density of development. The R-1/S-72 Zoning District requires a minimum of 5,000 sq. ft. parcel size. The proposed subdivision will result in three (3) lots measuring 5,000+ sq. ft. parcel size, thus complying with the criteria for the R-1/S-72 Zoning District. The applicant must confirm that sewer and water connections for all parcels are available prior to having the tentative map finalized. Lots 1, 2, and 3 can be accessed from a new private road: "Cardinal Court."

4. That the design of the subdivision and the proposed improvements will not conflict with easements acquired by the public at large for access through or use of property within the proposed subdivision.

5. That the design of the subdivision provides, to the extent feasible, for future passive or natural heating or cooling opportunities as these opportunities are available through the new residential development.

6. That the design of the subdivision and the proposed improvements are not likely to cause serious public health problems, substantial environmental damage, or substantially and avoidably injure fish or wildlife or their habitat, as the site is not near any sensitive habitat.

7. That the discharge waste from the proposed subdivision into an existing community sewer system (West Bay Sanitary District) would not result in violation of existing requirements prescribed by State Regional Water Quality Control Board (RWQCB) pursuant to Division 7 (commencing with Section 1300) of the State Water Code as their discharge would be typical of future residential homes and not violate requirements of the RWQCB.

8. That the County has determined that the benefits of additional housing are greater than any negative effects from fiscal or environmental resources caused by implementation of the subdivision and they will be less than significant if the applicant complies and completes the conditions of approval in Attachment A.

Regarding the Street Name, Find:

9. That the proposed street name of "Cardinal Court" in unincorporated West Menlo Park would assist in the effective delivery of public services and would not be detrimental to the public welfare in the neighborhood because the naming of the private road "Cardinal Court" positively impacts emergency response capability by helping emergency service professionals to distinguish properties accessed from this private road from those properties accessed directly from Santa Cruz Avenue.

RECOMMENDED CONDITIONS OF APPROVAL

Current Planning Section

1. This subdivision approval is valid for two (2) years, during which time a final parcel map shall be filed and recorded. An extension to this time period in accordance with Section 7013.5.c of the Subdivision Regulations may be issued by the Planning Department upon written request and payment of any applicable extension fees, if required, sixty (60) days prior to expiration.

2. No construction, demolition, tree removal (including dead or non-significant sized trees), grading or other site disturbance activity shall occur until this approval is final. Prior to any such activity, an inspection shall occur to confirm that tree protection fencing is installed around all trees to be protected, as directed and overseen by the hired arborist (as required in Condition No. 6).

3. The approval of the tentative map includes the designation of a greater side setback as occurs on the westerly side of Lot 1, ranging from 12.5 feet to 25 feet plus (as shown on Attachment D), to accommodate both the existing sanitary sewer easement (which cannot be built upon) and traversing across Lot 1 from 2

Crocus Court, and to allow a greater setback on Lot 1 to foster more effective preservation of three of the five redwood trees in the side and rear corner of that lot. This setback designation shall be shown on the Final Parcel Map. Future development of this lot shall adhere to this setback, with no exceptions allowed for any development whatsoever encroaching into it (except for 2-foot wide roof eave overhangs).

4. Prior to recordation of the final parcel map, the applicant shall pay to the San Mateo County Planning and Building Department, an amount of $65,980.39 for in-lieu park fees as required by County Subdivision Regulations Section 7055.3. Fees are based on the current land value provided by the County Assessor's Office at the time of payment and are subject to change.

5. During any future project construction, the applicant shall, pursuant to Chapter 4.100 of the San Mateo County Ordinance Code, minimize the transport and discharge of stormwater runoff from the construction site into storm drain systems and water bodies by:

    a. Stabilizing all denuded areas and maintaining erosion control measures continuously between October 1 and April 30.

    b. Removing spoils promptly, and avoiding stockpiling of fill materials, when rain is forecast. If rain threatens, stockpiled spoils and other materials shall be covered with a tarp or other waterproof material.

    c. Storing, handling, and disposing of construction materials and wastes so as to avoid their entry to the storm drain system or water body.

    d. Avoiding cleaning, fueling or maintaining vehicles on-site, except in an area designated to contain and treat runoff.

    e. Limiting and timing application of pesticides and fertilizers to avoid polluting runoff.

Tree Removal, Tree Protection and Tree Replacement

6. Hired Arborist. Prior to the issuance of a building permit or site disturbance associated with any future construction or related activity (i.e., demolition of house and other existing development, construction of private roadway, trenching for installation of sanitary sewer, water and drainage lines), the County shall hire a project arborist which shall have the minimum qualifications or designations: International Society or Arboricultural Board Certified Master Arborist® (BCMA) or Certified Arborist Municipal Specialist®, or an American Society of Consulting Arborists Registered Consulting Arborist® (RCA). The County-selected arborist shall observe, document (photo, video and written, where best prescribed) and report to the County that the procedures and processes outlined in the Gessner

Report are conducted properly. The cost of the County-hired arborist shall be bourn by the project applicant or property owner. Once hired, the project arborist will be retained for the duties described above through to and including the County's final Building inspection of the third and final house) as stipulated in this report and by these conditions, including the choosing and oversight of all replanted trees (at the cited project junctures), including their planting, protection and long term care during the span of this project.

7. Removal of Two Oak Trees and Replacement. The only significant-sized live trees allowed for removal are (as shown on the Tree Protection Plan, Attachment I) are Tree #s 3 and 4 (Coast Live Oaks within location of the proposed roadway). Regarding these two oak trees, the applicant shall be responsible for replacing them on a 2:1 basis, e.g., two 48" diameter boxed native oaks for each of the trees removed (for a total of four trees). Their planting and locations shall occur under the observation, timing and care (including protection from remaining construction activity once planted) of the hired arborist and shall be confirmed prior to the final Building inspection approval of a residence on Lots 1, 2 or 3. Upon the planting of such replacement trees (regardless of their diameter or circumference size), they shall be considered "Significant Trees," such that any request to remove them at any time in the future shall require compliance with the County-adopted Significant Tree Regulations.

8. Preservation Four Oak Trees near Roadway. Tree #s 1, 2 and 26 (Blue Oak and Coast Live Oaks) shall be preserved. Prior to any excavation or ground disturbance associated with construction of the proposed private roadway or any other demolition of ground disturbance activity, these trees shall be protected by measures and to standards as determined by the arborist, but may include the following:

   a. Wooden slats shall be placed against the tree trunks and wrapped with straw wattle. On the outside of the straw wattle, orange construction site fencing shall be wrapped around these trees. If any construction/disturbance of the proposed sanitary sewer and storm drain lines (on the northerly side of the parcel) is to occur prior to construction of the roadway, tree protection fencing shall be placed at 15 feet from the trunks of the trees or 1-foot outside of the trees' driplines, whichever is greater.

   b. Soil removal above and around the trees' roots shall be accomplished with the combined methodology of hand digging and/or use of Hydrovac® or Air-spade® excavation to ensure minimal impact to existing roots. The excavated areas shall be backfilled with Structural Soil® (combined with any other soil amendments as deemed necessary by the hired arborist) at a depth as represented on the respective cross sections for each tree (Attachment E) or as best determined by the arborist. The roadway shall be constructed with porous materials and engineered soil mix (ESM) or

Structural Soil®. All engineered soil mixing shall be performed by an agreed upon supplier using appropriate soil measuring, mixing and consistent mix rations. No mixing of engineered soil mix at the project site shall be permitted. Mix suppliers include TMT Enterprises, 1996 Old Oakland Road, San Jose, CA, 408/432-9040, or approved equal licensed by Amereq Inc., to distribute Engineered Soil® according to the Cornel University patent. The surface pavers or other affective pervious materials shall allow for water and air penetration to the root zones of the trees in close proximity to the roadway, and as best determined by the arborist.

c. Structural Soil® shall be packed around the roots and compacted to engineering standards while still allowing for future root growth (thus eliminating the need to cut roots in the base rock area and lowering potential impacts). In the event that the arborist has determined (for any of the four oak trees) that the roadway surface must be raised to avoid excessive root pruning, such revisions shall include input from the arborist and project civil engineer (including any revised drainage requirements), and shall be reviewed by the County Department of Public Works prior to any final fill compaction or installation of top roadway materials.

d. Should any of these trees' respective health fail within the timeframe of the roadway's completion (though to the final inspection approval of any of the subsequent houses proposed on any of the three lots), or otherwise be deemed at significant risk by the arborist within this timeframe, or as otherwise determined by the Community Development Director, the arborist shall oversee the replacement of such trees with (at a 1:1 basis) minimum 24-inch boxed Coast Live Oaks and/or Valley Oaks in similar locations between the left side of the roadway and the properties to the south off Crocus Court. The species and exact location of such trees shall be chosen for optimal tree health and their screening effectiveness, including the installation of adequate tree protection measures to be kept in place for the duration of all such construction and disturbance activity. The Coast Live Oaks and/or Valley Oaks shall be selected by the arborist from a reputable nursery and planted by a professional landscape contractor under the supervision of the arborist. The trees must be free of girdling roots, have the root collar well exposed, show vigorous signs of growth and be pest and disease free. The trees shall be planted with their root collars well exposed and 6 inches above finished grade. Irrigation to the trees must be consistent with the needs of such newly planted trees, but shall also be prepared to remove such irrigation within 2-3 years so that the trees do not become over-irrigated. All future landscaping around the new trees shall be consistent with the water needs of these oak types. Upon the planting of such replacement trees (regardless of their diameter or circumference size), they shall be considered "Significant Trees," such that any request to remove them at any time in the future shall require compliance with the County-adopted Significant Tree Regulations.

9. Preservation of Four Redwood Trees and Oak Tree Impacted by Sanitary Sewer and Drainage Lines. The four redwood trees (#s 10, 11, 12, 13, 14), and a Coast Live Oak tree (#15) are all in some degree of proximity to the installation of a sanitary sewer and stormwater drainage lines that will traverse through and along the rear yard areas of Lots 1 and 2. These trees shall be protected by measures and to standards as determined by the arborist, but may include the following:

   a. These redwood trees shall be deep-root watered by a licensed tree care provider under the direction of the arborist. Due to their drought-stressed condition, 300 gallons of clean water shall be injected into the root zones of each tree. Afterwards, a soaker hose shall be placed underneath the trees driplines and be turned on for 5 hours every 2 weeks, unless adequate watering is provided by winter season rains, as determined, overseen and confirmed by the arborist.

   b. The bore hole for the sewer and storm drain must originate outside the Tree Protection Zone (TPZ) of approximately 30 feet from the redwoods (#s 13 and 14). The TPZ for tree #s 10 through 14 should be 33 feet. The contractor shall notify the project arborist a minimum of 24 hours in advance of the activity in the TPZ. If trenching or pips installation has been approved within the TPZ, the trench shall be either cut by hand, Air-Spade®, hydraulic vacuum excavation or mechanically boring the tunnel under the roots with a horizontal directional; drill and hydraulic or pneumatic air excavation technology. In all cases, install the utility pipe immediately, backfill with soil and soak the same day.

      If trenches are cut and tree roots two inches (2”) or larger are encountered, they must be cleanly cut back to a sound wood lateral root. All exposed root areas within the TPZ shall be backfilled or covered within one hour. Exposed roots may be kept from drying out by temporarily covering the roots and draping layered burlap or carpeting over the upper three feet (3’) of trench walls. The materials must be kept wet until backfilled to reduce evaporation from the trench walls. No roots greater than two inches (2”) in diameter should be cut or damaged without the approval of the project arborist.

      Any approved excavation, demolition or extraction of material; shall be performed with equipment sitting outside the TPZ. Methods permitted are by hand-digging, hydraulic or pneumatic air excavation technology.

      If excavating or trenching for drainage, irrigation lines, etc., it is the duty of the contractor to tunnel under any roots two inches (2”) or greater in diameter or greater.

   c. Beyond the four redwood trees heading easterly, trenching and excavation for the remainder lengths of the sanitary sewer and stormwater drainage

lines are in close proximity to the oak tree (#15) on Lot 1, with the stormwater line alone being close to the maple tree (#35) on Lot 2. The trenching for these lines shall be hand-dug in combination with an Air-Spade® or hydraulic vacuum excavation to the required excavation depth. If that depth is not possible, all excavation shall be documented by the arborist when in close proximity to an affected tree or its root zone. Hand-digging and carefully laying the drain pipe below or beside the protected roots is required to reduce root loss, thus reducing trauma to the tree. The trenches shall be backfilled as soon as possible with native materials and compacted to near their original conditions. Trenches that must be left exposed for a period of time shall be covered with layers of burlap or straw wattle and kept moist. Plywood placed over the top of the trench will also help protect exposed roots below. An irrigation plan shall be implemented, including a deep water injection prior to the start of constructing the storm drain line. Upon the work's completion, a soaker hose shall be placed underneath the tree's dripline and turned on for 5 hours every 2 weeks, unless adequate watering is provided by winter season rains, as determined, overseen and confirmed by the arborist. Tree protection fencing around this and any other nearby trees may be temporarily removed during the sanitary sewer and stormwater drain line's construction. The fencing shall be put back in place after the work is completed and may not be removed for house construction. The arborist shall be called out to the site when excavation for the drain line is to take place in order to document, inspect and to offer any additional mitigation measures as deemed necessary to protect the tree.

10. Designation of Expanded Side Setback on Lot 1. The expanded side setback on the westerly side of Lot 1 (as shown on Tentative Map, Attachment D) shall be shown and identified on the Final Parcel Map for recordation by the County. This setback delineation shall include language (to be approved by the Community Development Director) that prohibits any future encroachment, or the granting of any exceptions to encroach into this designated setback area.

11. Removal of Dead Trees. Tree #s 6, 7, 16 and 34 are all dead trees, and the Significant Tree Ordinance regulates only "live" trees. These trees may be removed pursuant to the timing cited in Condition No. 2.

12. Removal of Significant (Non-Oak) Trees. Two significant-sized trees (#s 8 and 9, as identified on Attachments I and K) are proposed and approved for removal, due to their health. These trees may be removed pursuant to the timing cited in Condition No. 2.

13. Removal of Non-Significant (Non-Oak) Trees. Of the ten (10) non-significant sized trees on the site, five trees (#s 5, 25, 30, 32, and 36; identified on Attachments I and K) may be removed, due to their general health and/or location

within the building footprints (as defined by minimum required setbacks) of future house development on their respective Lots 1 and 3 (shown on Attachment D).

14. Future Tree Removal. This approval does not include any future tree removal as may be proposed in future residential development on any of the lots. In such cases, any such proposed tree removal shall require that a Tree Removal Application be submitted, pursuant to the processing and requirements of the County-adopted Significant Tree Regulations.

15. General Tree Preservation/Protection Measures for All Live Trees on Site (Unless Otherwise Approved for Removal). In addition to the "General Tree Protection Guidelines" provided in the Gessner Report (Appendix A, page 23 of 28), the following shall be implemented as directed and (where required) supervised by the project arborist. Five olive trees (#s 20, 21, 22, 23, and 24) are located generally to the east of the property boundary of Lot 3, within the Santa Cruz Avenue County right-of-way. However, due to their proximity to any and all development related site disturbance, these trees shall have tree protection fencing placed at the trees' driplines. The actual construction drawings for roadway construction, stormwater drainage lines, sanitary sewer lines and demolition of the house and other existing development on the site shall include erosion control measures and tree protection measures. These plans shall be submitted to the Planning Department (which shall include the Public Works Department) for review and approval prior to any activity proposed on such plans.

    Tree protection fencing (per the detail illustration provided at the end of the arborist report, Attachment I) shall be installed and maintained throughout the entire length of the project, including eventual demolition of the house through to the completion of all new residential construction on all three lots. Fencing for tree protection shall be 6 feet tall, comprised of high density (orange colored) polyethylene material supported by metal 2-inch diameter poles, pounded into the ground to a depth of no less than 2 feet. The protective fencing's location shall be as close to the dripline of the respective trees as possible. Exceptions to this distance shall only be allowed where construction of subdivision-related improvements is in close proximity to the subject trees where additional area is required for construction to safely occur. In such cases, the fencing shall be placed under the supervision of the arborist. No materials shall be stored or cleaned inside the fenced protection zones. Areas outside the protection fencing, but still beneath the respective tree's dripline, where foot or vehicle traffic is expected to be heavy, shall be mulched with 4-6 inches of chipper chips covered with plywood. The spreading of chips will help to reduce compaction and preserve soil structure. The chip buffer shall extend over the entire tree protection zone. A Tree Protection Inspection shall occur prior to issuance of demolition or building permits and any development related activity or disturbance on the site to ensure that all cited tree protection and erosion control measures are in place.

a. *Retention of and Repair/Correction to Existing Tree Protection Fencing*. From the time of the implementation of all Tree Protection measures cited above, the applicant shall be responsible for ensuring that all such protection measures are maintained to ensure their maximum effectiveness. Any failed fencing or measures shall be repaired or replaced as directed by and under the supervision of the arborist.

b. *Trenching for Irrigation, Electrical/Gas, Additional Drainage Associated with Construction of Future Houses*. The following measures shall be included in association with the future construction of any residential development on any of the proposed lots, including the continuation of tree protection measures and any proposed tree removal. Such trenching shall be hand-dug when beneath the driplines of the protected trees. Such hand-digging and laying conduit or pipe below or beside the tree's protected roots will reduce root loss of and trauma to the entire tree. The trenches shall be backfilled as soon as possible with native material and compacted to its original level. Trenches that must be left exposed for a period of time shall be covered with layers of burlap or straw wattle and kept moist. Plywood placed over the top of the trench will also help protect exposed roots below.

16. Tree Trimming. For any trees to be preserved, selective trimming of certain limbs or within the tree canopy may occur, when it is determined by the arborist to be necessary for either the health of the tree or due to work to be safely and effectively performed around such trees. Such trimming shall occur under the direction and observation of the arborist.

17. Surety Deposit for Tree Replacement. Prior to recordation of the Final Parcel Map, the applicant or property owner shall post a Certificate of Deposit (CD), payable to San Mateo County, in the amount of $5000.00 to pay for any and all new trees, whether they are required as replacements for those removed or for those trees that failed, as cited in previous conditions. The CD shall be released only upon the arborist's final confirmation to the Community Development Director that all live trees that were to be preserved and protected are in generally good health, prior to the final Building inspection approval of the last (third) house being built.

18. Private Roadway Construction Timing. The private roadway shall be constructed (along with all required tree preservation measures affecting the four cited oak trees) and completed, to the satisfaction of the Department of Public Works and the Community Development Director, prior to either the final Building Inspection approval of the first residence built on the subject parcel or approved lot or prior to the recordation of the Final Parcel Map, whichever occurs first. No bonding mechanism or process shall be allowed for the road construction. Upon completion of the roadway, tree protection measures shall be installed, as directed and overseen by the arborist, to protect the cited four oak trees from any future

construction disturbance on the property. Additionally, the roadway surface shall be covered with materials of an adequate type and thickness to adequately offset the load impacts posed by all construction equipment and vehicles traversing the roadway as necessary and related to all other improvements to the property, through to and including construction of houses and related development on all three lots.

Street Naming

19. The street name of "Cardinal Court" shall become effective 45 days from approval to allow for public notification with public service agencies.

Department of Public Works

20. The street, as named "Cardinal Court," must be clearly marked from the entrance on Santa Cruz Avenue so emergency vehicles can locate the street. The new signs must meet Menlo Park Fire Protection District's requirements in terms of size and location. The applicant shall contact the Menlo Park Fire Protection District for these requirements prior to installation.

21. Any grading required as associated with this project shall comply with the County Grading Ordinance, including a separate permitting process with the Planning Department if required.

22. Any and all future development on Lot 1 shall be located such that is does not encroach into the 6-foot wide sanitary sewer easement (recorded in Book 4346, Page 175 of Official Records of San Mateo County) located generally parallel to and close to that lot's western boundary, which provides sanitary sewer service for APN 074-091-380 (2 Crocus Court) and direct it to the sanitary sewer line located within Harrison Way road right-of-way. The expanded side setback (Condition No. 10) will also serve to keep any development off this easement.

23. Prior to the recordation of the Final Parcel Map, or prior to the issuance of the building permit or planning permit (for Provision C3 Regulated Projects), which occurs first, the applicant shall have prepared, by a registered civil engineer, a drainage analysis of the proposed project and submit it to the Department of Public Works for review and approval. The drainage analysis shall consist of a written narrative and a plan. The flow of the stormwater onto, over, and off of the property shall be detailed on the plan (which shall show the revision as shown in Attachment G and Condition No. 24) and shall include adjacent lands as appropriate to clearly depict the pattern of flow. The analysis shall detail the measures necessary to certify adequate drainage. Post-development flows and velocities shall not exceed those that existed in the pre-developed state. Recommended measures shall be designed and included in the improvement plans and submitted to the Department of Public Works for review and approval.

24. The stormwater drain as located along the rear yard areas of Lots 1 and 2 shall be constructed pursuant to that drainage feature cross section shown in Attachment G.

25. Prior to the issuance of the building permit or planning permit (if applicable) for any future residential-related development of any of the three lots, the applicant shall submit a driveway "Plan and Profile," to the Department of Public Works, showing the driveway access to the parcel (garage slab of associated house) complying with County Standards for driveway slopes (not to exceed 20%) and to County Standards for driveways (at the property line) being the same elevation as the center of the access roadway. When appropriate, as determined by the Department of Public Works, this plan and profile shall be prepared from elevations and alignment shown on the roadway improvement plans. The driveway plan shall also include and show specific provisions and details from both the existing and the proposed drainage patterns and drainage facilities.

26. Prior to recordation of the Final Parcel Map, the applicant shall submit to the Department of Public works, for review and approval, documentation of ingress/egress easements, stormwater easements, and sanitary sewer easements for the applicant's use and the use of others.

27. No proposed construction work within the County right-of-way shall begin until County requirements for the issuance of an encroachment permit, including review of the plan, have been met and an encroachment permit issued. The applicant shall contact a Department of Public Works Inspector 48 hours prior to commencing work in the right-of-way.

28. Prior to recordation of the Final Parcel Map, the applicant shall execute and record a maintenance agreement in a form approved by the County for the proposed stormwater facilities and connection to County storm drain facilities.

29. Prior to the issuance of the building permit for residential development of each of the three lots, the applicant will be required to provide payment of "roadway mitigation fees" based on the square footage (assessable space) of the proposed building per Ordinance No. 3277.

30. Future development of any and all parcels resulting from the approved subdivision must comply with these requirements. The applicant shall note the requirement in the deeds for each parcel, copies of which shall be provided to the Planning Department, and shall disclose the requirement to any potential buyer(s). Each parcel shall be tagged by the Planning Department with this requirement, and no permits shall be issued for any development of the parcel(s) until this requirement is met. For future structures to be built on the individual parcels, prior to the issuance of a building permit for any structure on the project site, all plans shall be reviewed by the Planning Department for conformance with this condition.

31. Prior to recordation of the Final Parcel Map, the applicant shall submit written certification from the appropriate utilities to the Department of Public Works and the Planning and Building Department stating that they will provide utility (e.g., sewer, water, energy, communication, etc.) services to the proposed parcels of this subdivision.

32. The applicant shall submit a Final Parcel Map to the Department of Public Works County Surveyor for review, to satisfy the State of California Subdivision Map Act. The final map will be recorded only after all Inter Department conditions have been met.

Building Inspection Section

33. A demolition permit will be required for the removal of the existing structure. This permit must be finalized before the Final Parcel Map can be recorded.

34. The applicant must contact the County Building Inspection Section for address assignments for the new road ("Cardinal Court").

35. Sediment and erosion control measures to be installed prior to beginning any demolition or site work.

Menlo Park Fire Protection District

36. There shall be no vehicle parking allowed on "Cardinal Court." The roadway shall be posted with "No Parking" signs throughout.

37. Approved numbers shall be placed on all new buildings in such a position as to be plainly visible and legible from the street or road fronting the property. Said numbers shall contrast with their background.

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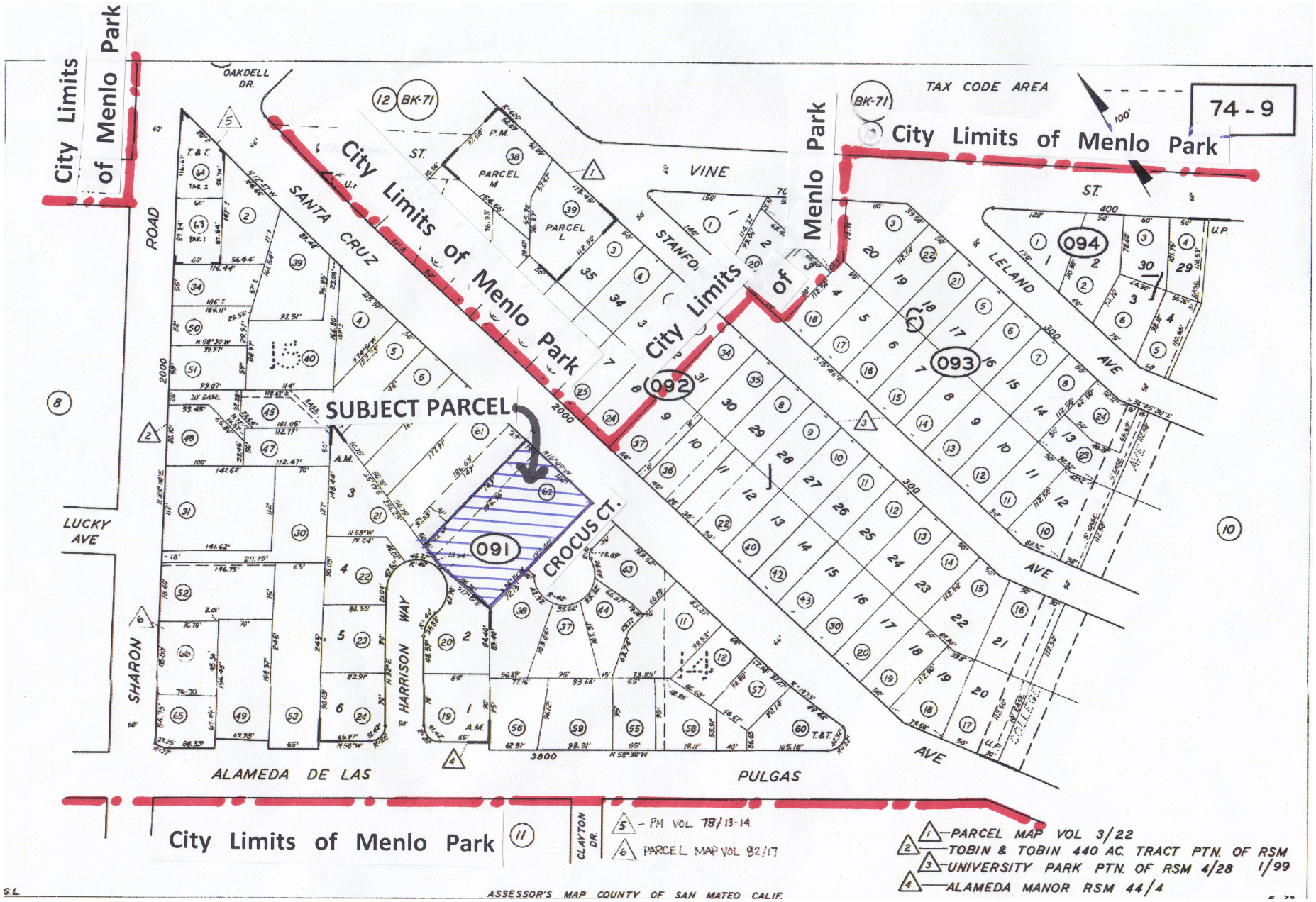


San Mateo County Planning Commission Meeting

Owner/Applicant: **Dave Bragg / Silicon Valley Real Ventures LLC** Attachment: **B**

File Numbers: **PLN2016-00226**

Letter of Referral

December 7, 2016

Silicon Valley Real Ventures LLC.
Attn: Dave Bragg
138 Charcot Avenue
San Jose, CA 95131

Dear Mr. Bragg:

Location:	2050 Santa Cruz Avenue, West Menlo Park
Assessor's Parcel No.:	074-091-620
File Number:	PLN2016-00226

On December 1, 2016, the Zoning Hearing Officer considered your request for a Minor Subdivision, pursuant to Section 7010 of the County Subdivision Regulations and the State Subdivision Map Act, to subdivide a 23,641 sq. ft. parcel into three (3) parcels and the assignment of the name "Cardinal Court" to the new private street.

In accordance with Section 6104(a) of the San Mateo County Zoning Regulations, the Zoning Hearing Officer found it to be in the public interest to refer the item to the Planning Commission for its consideration with the following direction to staff and the applicant:

1) County Planning staff shall confirm with the Menlo Park Fire Protection District (MPFPD) that a narrower width driveway (Cardinal Court) can be approved;

2) The applicant shall be required to submit revised plans as needed to reflect the narrower width. The revised driveway plan shall be submitted to the MPFPD for review, which shall include the revised road width along the first 65 feet of its length, with the intent of narrowing the roadway to lessen the impacts to tree Nos. 1, 26 and 2. The plan shall identify all surface materials along the entire roadway's length and be accompanied by a tree maintenance plan to maintain a tree clearance of 13'6" above the road surface and road maintenance in case roots begin lifting the road, available water supply (location of hydrant and water pressure), and assurance that the 3 new houses would be sprinklered. If the MPFPD supports such a request to lessen the roadway's width, such plans shall be included in the packet of materials to be reviewed by the Planning Commission.

3) The applicant shall be required to revise the project drainage plan to include a one-foot higher berm along the entire length of the drainage swale located along the northern border of the site (opposite Crocus Court and directly adjacent to neighbors living at 2042 Santa Cruz Avenue). This revision shall include a simple cross-section of the drainage swale in proximity to the boundary of 2042 Santa Cruz Avenue. Require the applicant to submit revised grading and drainage plans as needed for review by the Planning Commission.

4) The applicant shall be required to revise the Tentative Map to show the accurate location of the sanitary sewer easement as located along the western border of Lot 1 (pursuant to the civil engineer's corrected detail shown at the December 1, 2017 ZHO meeting);

ATTACHMENT C

5) The applicant's civil engineer shall prepare and submit a cross-section (generally south to north) to show how the raised roadway (proposed in the cross section for purposes of minimizing impact to the oak trees slated for preservation as shown at the December 1, 2016 ZHO hearing), would reconcile with the parcel's topography and future driveways serving Lots 2 and 3.

6) Staff shall evaluate the use of bonds to ensure that money is available for tree replacement should that be necessary in the future. Explain the regulations related to the use of bonds in the staff report to be considered by the Planning Commission.

7) Staff shall confirm with the Department of Public Works that this three-lot subdivision is not subject to the requirement for a traffic study.

8) Staff shall hire an independent consulting arborist to peer review the information submitted by Kielty Arborist Services, LLC and to further evaluate or perform the following items:

   a. Address any potential damage to the Redwood trees (Nos. 10 -14), and other trees (i.e. tree No. 15), which may result from the proposed drainage system and sanitary sewer connection, as occurs on Lot No. 1, as well as the location of future residential development as would occur on that lot. Assess the minimum setbacks (as well as the existence of the sanitary sewer easement as it exists along the western edge of Lot No.1) relative to whether those constraints represent adequate setbacks to best ensure the health of these trees, including recommendations for what would be adequate setbacks for such tree protection;

   b. Evaluate protecting tree No. 13 in the same manner as tree No. 14 as discussed on pages 6 and 19 of the December 1, 2016 staff report;

   c. Specify a deep watering schedule as discussed on page 19 of the December 1, 2016 staff report and provide guidance as to the definition of adequate rainfall as discussed in the staff report;

   d. Assess tree No. 4 and provide input as to the size of a replacement tree and whether a 24" box replacement tree would be appropriate. The size of the replacement tree will be included in a revised Condition No. 5 in the staff report to be considered by the Planning Commission;

   e. Perform the same type of tree root exploration – with a section diagram provided by the applicant's arborist/engineer - around tree Nos. 2 and 26 as was performed around tree No. 1 and provide recommendations about the appropriate tree protection measures for those trees;

   f. Analyze potential impacts to tree No. 27 (posed by the future access drive terminus as shown on the latest Tentative Map and provide a professional assessment about including it in a revised Condition No. 7(b)(3) as discussed on pages 19-21 of the December 1, 2016 staff report for inclusion in the staff report to be considered by the Planning Commission;

   g. Evaluate whether other trees on the site may need protection during construction as discussed for trees in Condition No. 7(b)(3);

   h. Evaluate and recommend the number and sizes of required replacement trees where needed throughout the site;

   i. Evaluate the document entitled "Proposed Roadway Section at Tree #1" – as well as similar cross sections to be provided by the applicant on the other two oak trees to be preserved along that left side of the proposed roadway -and provide recommendations regarding the preservation of trees along proposed Cardinal Court during and after construction. Review all cross sections given a reduced roadway width should that reduced width be allowed by Menlo Park Fire Protection District. In the event

j. Address potential problems of moving Tree No. 3 including identifying a proposed location for the relocated tree, the probability of its survival, and a recommended maintenance regime once it is relocated;

k. Address the health and viability of the Birch tree that is on the northern boundary of the site and immediately adjacent to the neighbors at 2042 Santa Cruz Avenue. Provide recommendations about a replacement tree should the Birch tree not be viable;

l. Address the Oak Tree that is not numbered on proposed Lot 3;

m. Address impacts to significant trees on the site and the proposed tree protection plan in regard to the proposed grading and drainage plan for the three-lot subdivision.

9) Staff shall determine who will pay for the consulting arborist. Regardless of who pays for the consulting arborist, the selection and management of the arborist will be the responsibility of the staff of the San Mateo County Planning and Building Department.

10) All of the information provided above shall be explained in the staff report to be considered by the Planning Commission and used to redraft pertinent conditions in that revised staff report.

11) County Planning staff shall review the status of the pending annexation process with the City of Menlo Park, including a brief update of this process in the staff report to be presented to the Planning Commission, for information purposes only.

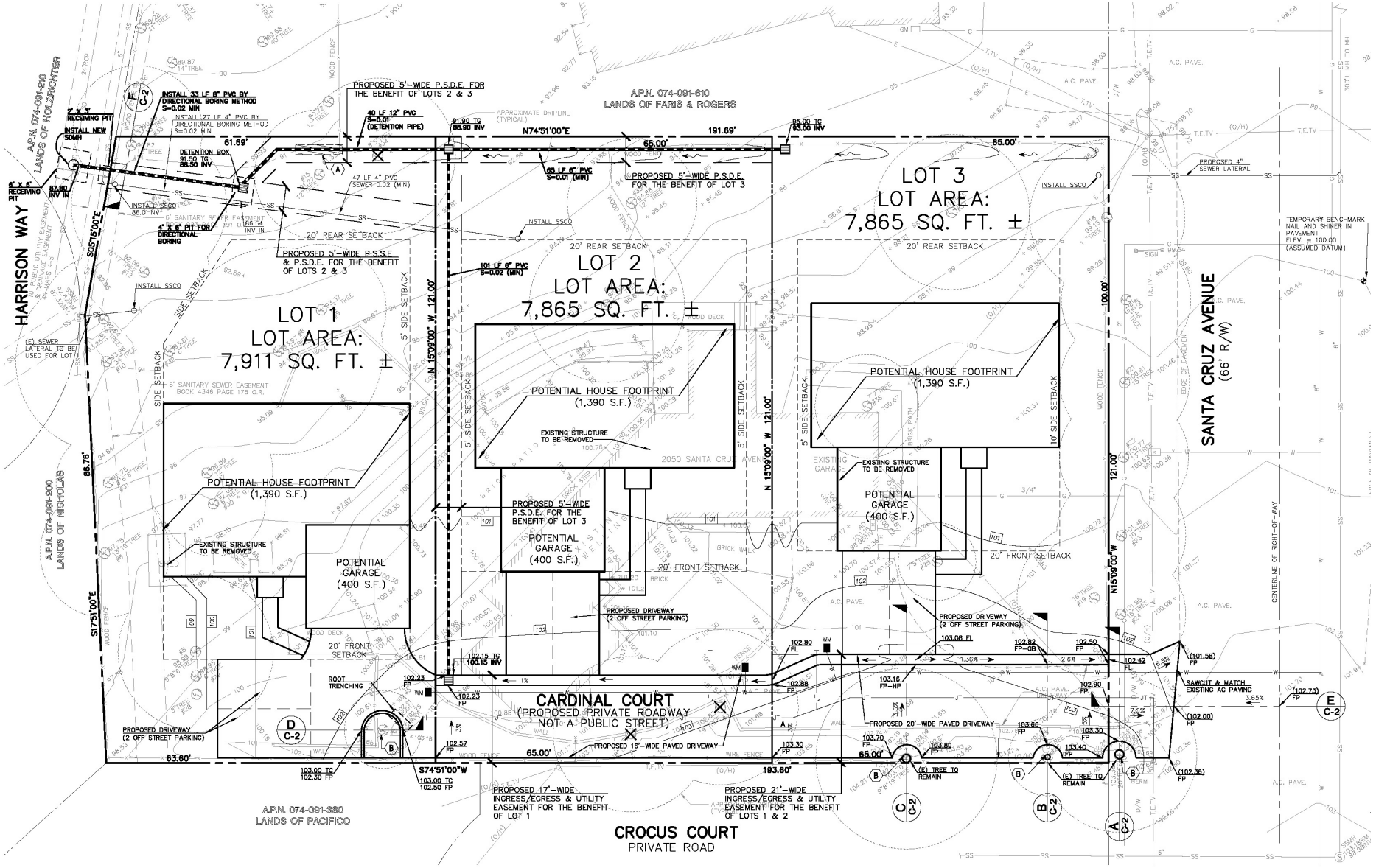
Please direct any questions to Senior Planner Dave Holbrook at 650-or 363-1837 or dholbrook@smcgov.org.

Also, please take a few minutes and complete the online version of our Customer Survey which will help us to enhance our customer service. Thank you in advance for your time in providing valuable feedback. The survey is available at: http://planning.smcgov.org.

Very truly yours,

Lisa Grote
Zoning Hearing Officer
zhd1117aa.1.LG.dr

cc: Anne Kortlander
Assessor's Office
Brian Schmidt
Building Inspection Section
CAL Water Services
Carin Pacifico
Diane Gosney
Gregory Faris
Linda Barman
Janet Weisman Goff
Public Works Department
Kelly Holzrichter
Judy Horst
Keri Nicholas
Kielty Arborist Services
Laurel Leone
Leah Rogers
Lynn McClure
Menlo Park Fire District
Menlo Park Planning Dept.
Mighty Tree Movers, Inc.

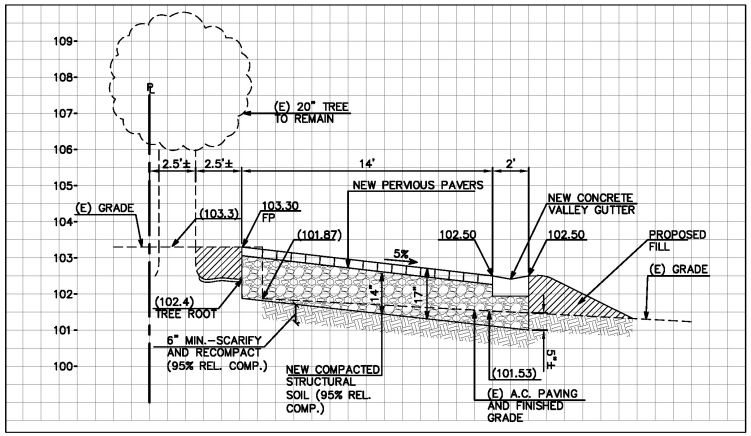


San Mateo County Planning Commission Meeting

Owner/Applicant: **Dave Bragg / Silicon Valley Real Ventures LLC**

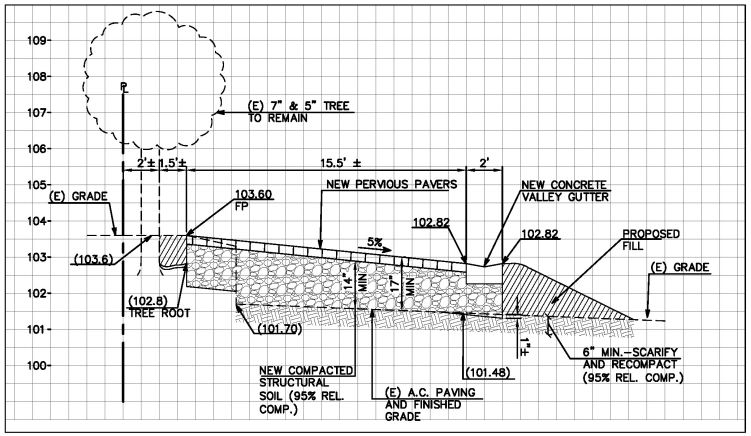
Attachment: **D**

File Numbers: **PLN2016-00226**



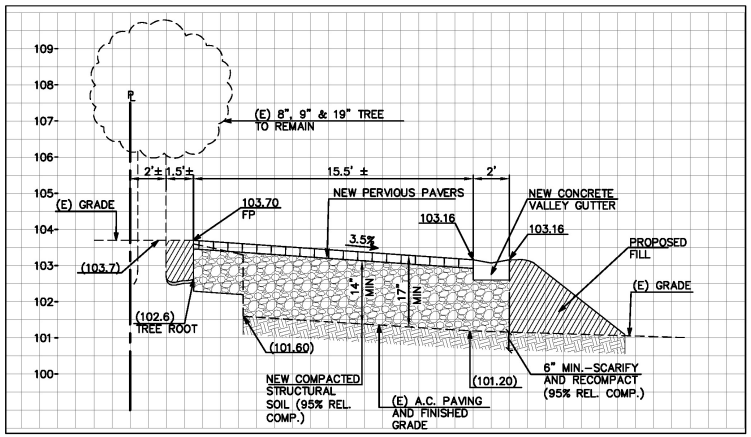
A **PROPOSED ROADWAY SECTION AT TREE #1**

SCALE: HORZ: 1"= 4' VERTICAL: 1"= 2'
NOTE: EXISTING ELEVATIONS SHOWN IN PARENTHESIS



B **PROPOSED ROADWAY SECTION AT TREE #26**

SCALE: HORZ: 1"= 4' VERTICAL: 1"= 2'
NOTE: EXISTING ELEVATIONS SHOWN IN PARENTHESIS



C **PROPOSED ROADWAY SECTION AT TREE #2**

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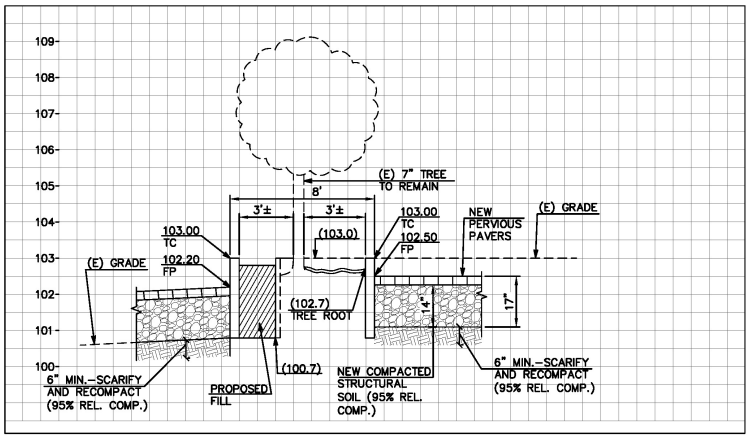
NOTE: EXISTING ELEVATIONS SHOWN IN PARENTHESIS



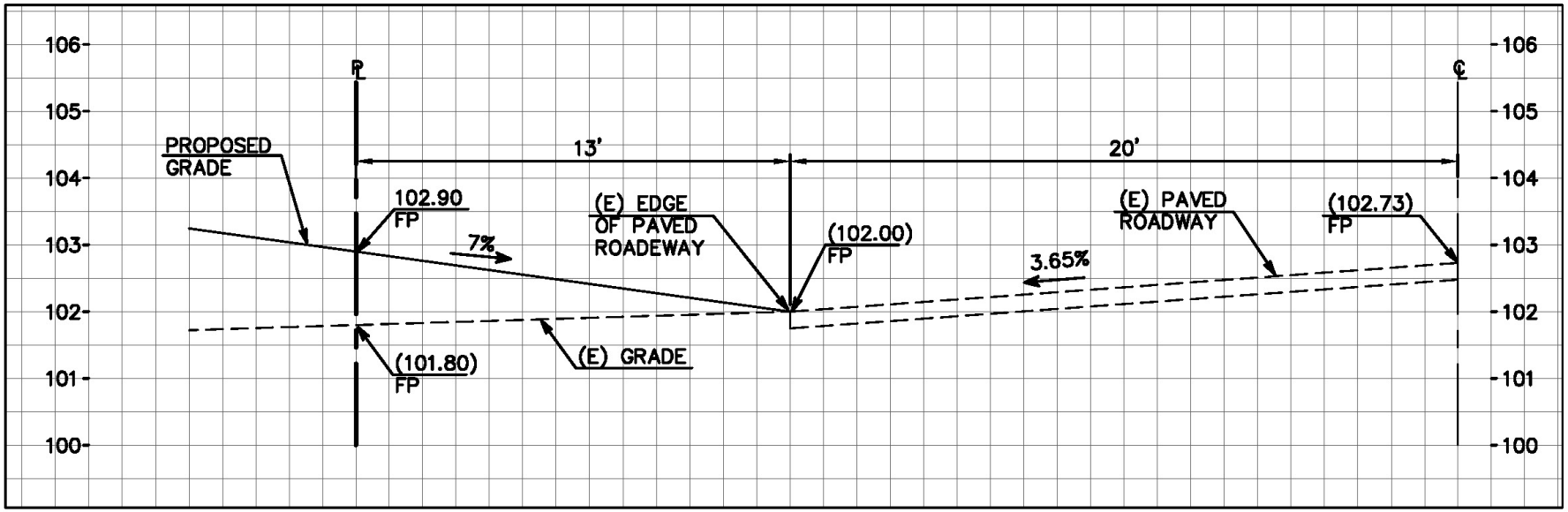
D **PROPOSED ROADWAY SECTION AT TREE #27**

SCALE: HORZ: 1"= 4' VERTICAL: 1"= 2'
NOTE: EXISTING ELEVATIONS SHOWN IN PARENTHESIS

San Mateo County Planning Commission Meeting

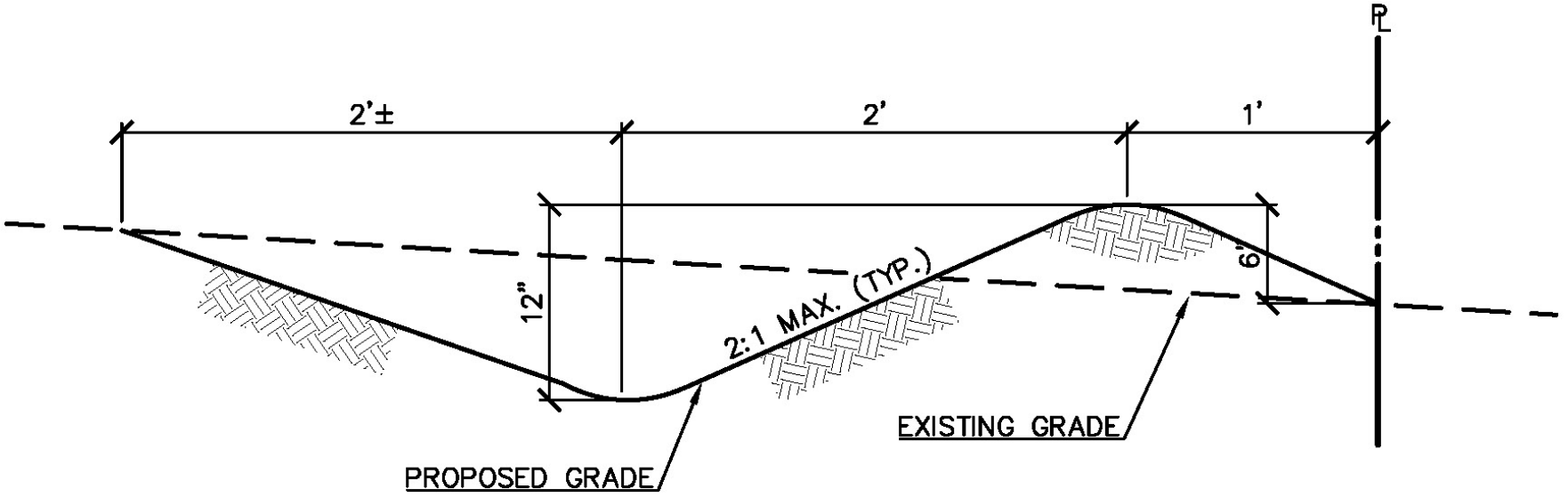
Owner/Applicant: **Dave Bragg / Silicon Valley Real Ventures LLC** Attachment: **E**

File Numbers: **PLN2016-00226**



E CENTERLINE DRIVEWAY SECTION AT ENTRY

SCALE: HORZ: 1"= 4' VERTICAL: 1"= 2'
NOTE: EXISTING ELEVATIONS SHOWN IN PARENTHESIS



G BERM DETAIL

NOT TO SCALE

Arborist's Review

2050 Santa Cruz Avenue
Menlo Park, CA 94025

Prepared for:

San Mateo County

June 14, 2017

Prepared By:

Richard Gessner
ASCA - Registered Consulting Arborist ® #496
ISA - Board Certified Master Arborist® WE-4341B
ISA - Tree Risk Assessor Qualified
CA - Qualified Applicators License QL 104230

Monarch Consulting Arborists LLC
P.O. Box 1010
Felton, CA 95018
831. 331. 8982

ATTACHMENT H

Table of Contents

Summary

If the proposed Cardinal Pass Way road alignment requires the removal of roots directly adjacent to trees #1, #2, and #26 they will likely decline or become unstable. The proposed road is to be raised to meet the existing grade of the trees or at a minimum higher than the exposed roots. Root washing the area and immediately backfilling with Structural Soil® can be performed to help reduce the likelihood of failure, but the results are uncertain. Coast live oak #27 will have a "Tree Island" constructed around it for preservation. Significant watering, mulching, and other mitigation measures would need to take place to preserve the tree and construct the driveway as proposed. The tree is small and if it were to fail there would now be infrastructure in place to replant with an appropriate specimen.

The storm drain and sewer between trees #13 and #14 are to be directionally bored, not hand dug, and the recommended length of the bore hole is sixty feet, which the most recent plans indicate. This approach will have the least impact on all the trees in the vicinity.

The tree care industry does not have an established mitigation ratio or tree size accounting for loss. San Mateo County provides some mitigation replanting requirements for certain geographic zones and this area is subject to the "significant tree ordinance" which requires planting of mitigation trees "acceptable to the Community Development Director". Because this project is a subdivision, the Director has broad discretion in establishing replanting requirements.

Tree #3 is not suitable to transplant and should be removed and replaced while the birch near the adjacent site is dead and should be removed as well.

There are three distinct groups of trees that should be protected which include oaks #1, #2, #26, and #27 where possible, coast redwoods #10 through #14, and the olives and oaks along Santa Cruz Avenue #18 through #24. Tree protection zones, guidelines, and specifications should be established for each zone prior to construction or grading and placed on all the plans.

The reports provided by Kielty Arborist Services LLC provide some tree protection guidelines that are adequate, reasonable, and meet typical standards. The reports do not state they are intended to be a "tree protection plan", although much of that information is provided and discussed. One concern other than content is the reports lack the typical established formatting sequence for report writing in the tree care industry including at a minimum a defined assignment, factual observations, discussion, conclusion, and recommendations. Other than basic tree detail the reports do not reflect the most up to date plan changes or recent site conditions including the locations of roots revealed around trees #1, #2, #26 and #27 in February 2017.

Introduction

Background

San Mateo County sought the assistance of a consulting arborist to conduct a site visit and evaluate several trees to be preserved. The evaluation focused on design details for a private road and associated joint trench to be built within the drip line of four oaks (*Quercus spp.*) along with the assessment of utility trenching near a stand of coast redwoods (*Sequoia sempervirens*). The assignment included a review of the independent arborist report and tree protection plan provided by the applicant's consulting arborist and discussion of other tree protection measures.

Assignment

- Peer-review the information submitted by Kielty Arborist Services, LLC dated October 14, 2016 and May 3, 2017 (both revised reports with no review of original documents).
- Provide an assessment of trees #1, #2, #26, and #27 as they relate to the proposed road and driveway along with discussion of what the exploratory trenching revealed.
- Provide an assessment of the proposed storm and sewer drains along with trenching and boring near trees #10 through #15.
- Consult with the applicant's arborist and Civil Engineer to explore infrastructure alternatives to reduce tree impacts.

Limits of the assignment

- Plans reviewed were as follows: Cardinal Court Vesting Tentative Parcel Map C-1 and C-2 dated May 24 and 5, 2017 provided by MacCleod and Associates. Arborist's reports by Kielty Arborist Services LLC revised report dated October 14, 2016 and revised report dated May 3, 2017.
- The report is limited to the tree and site conditions during two visits on February 2 and 28, 2017.

Purpose and use of the report

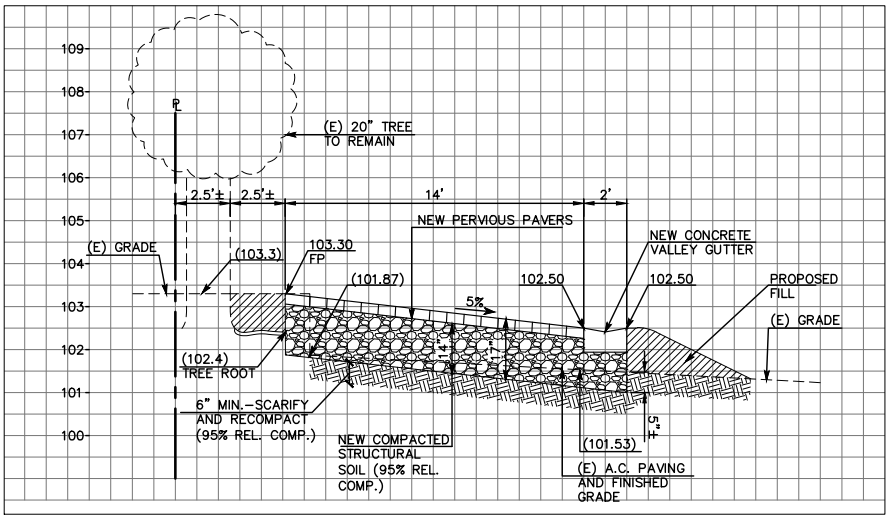
The report is to be used by San Mateo County, the property owners, and their agents to provide clarification when assessing application materials regarding tree preservation on 2050 Santa Cruz Avenue. The report is intended to help provide guidance regarding the subdivision of the lot and is not intended to be a tree preservation plan.

Observations

Site and Plans

The plans indicate the proposed Cardinal Pass Road will be constructed within one foot of trees #1, #2, and #26. It was determined during the site visit on February 2, 2017 that tree #3 was not suitable for transplanting and #4 was already designated for removal. The "Proposed Road Way Sections" indicate the grade raised and sloping upward to meet the existing grade of the trees (Image 1). This section shows the existing fill within one foot of the trees to be removed and the entire roadway designed with Structural Soil® and pervious pavers. The existing conditions include an asphalt driveway about 5 to 6 feet from the trunks. There is a small rock wall about 12 inches high running parallel to the driveway about 5 feet from the trees. The soil slopes upward to the trunks at least two feet above from the existing driveway.

Image 1: Cardinal Pass Road Section for Tree #1



A PROPOSED ROADWAY SECTION AT TREE #1

SCALE: HORZ: 1"= 4' VERTICAL: 1"= 2'
NOTE: EXISTING ELEVATIONS SHOWN IN PARENTHESIS

The joint trench for the gas and electric utility has been moved into the roadway and around tree #1, and now past #2 and #26 at least ten feet away.

Trees #1, #2, #26, and #27 were requested to be further excavated for the February 28th visit.

During the visit a clearly staked joint trench including sewer and storm drain alignment between redwoods #13 and #14 and past oak #15 was provided. The recent plans indicate the location and detail of that proposed trench and directional bore out to Harrison Way. There is a sanitary sewer clean out and spar under redwood #11.

February 28, 2017 Root Inspections

Blue oak #1: Roots revealed in diameter inches left to right: 5, 1, 2, 1, 2.5, 2, 2 at a depth of 16 inches (Images 2 and 3)

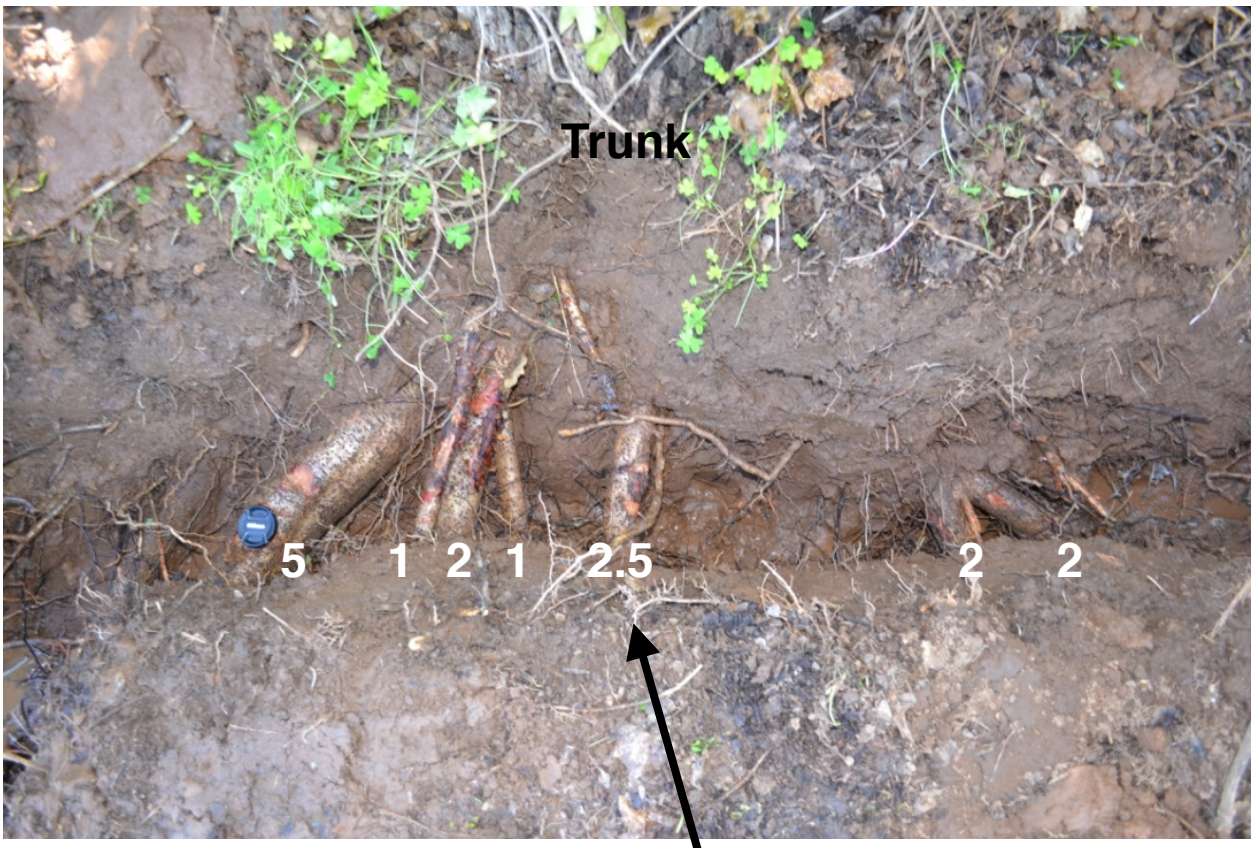


Image 2 (above): Roots emanating from the blue oak #1.

Image 3: Blue oak #1

Coast live oak #26: One root bifurcating bifurcating into two all one inch diameter with an additional on inch root, 33 inches from the trunk (Images 4 and 5).

Image 4 (above): Roots emanating from coast live oak #26.

Image 5: coast live oak #26

Coast live oak #2: Roots revealed in diameter inches left to right: 4, 6, 3, 4 and 6x1 inch (Images 6 and 7)

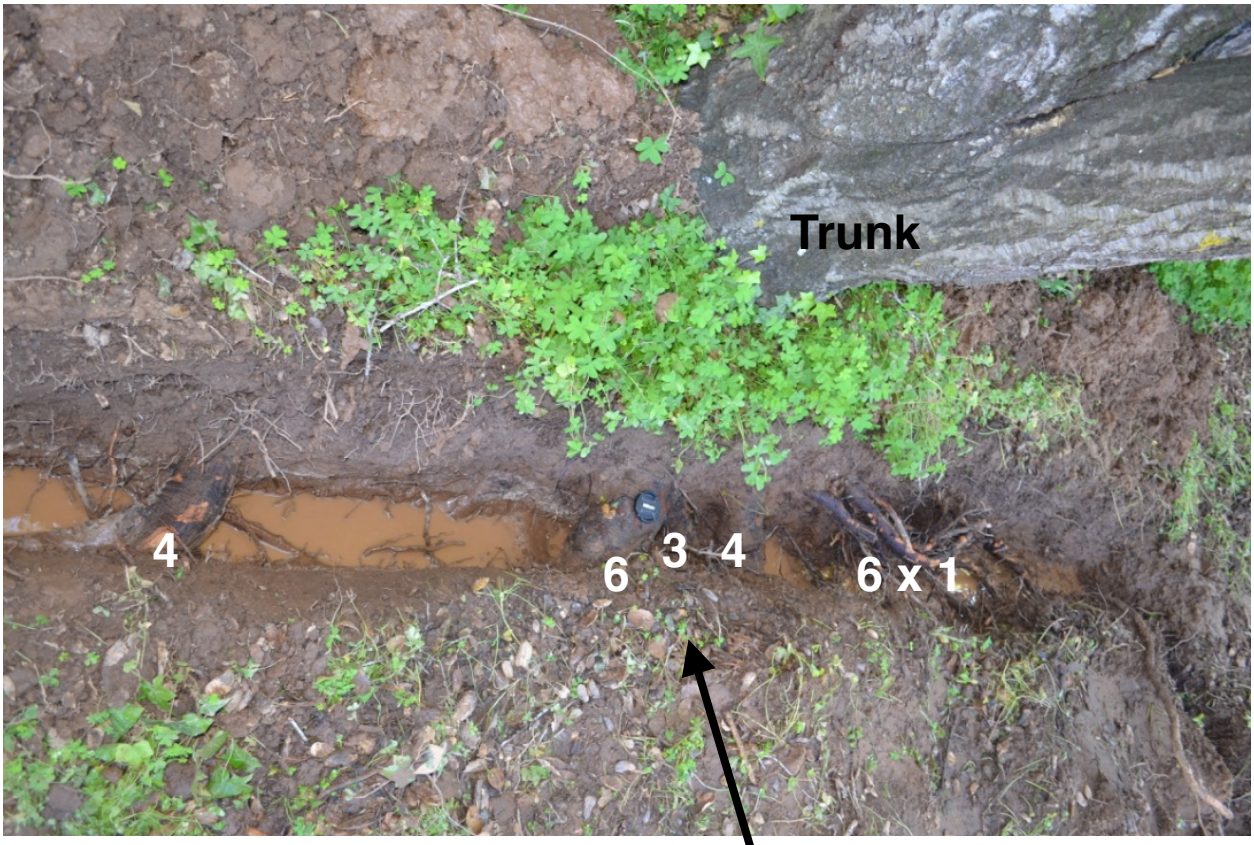


Image 6 (above): Roots emanating from coast live oak #2.

Image 7: coast live oak #2

Coast live oak #27: Roots revealed in diameter inches left to right: 1, 2, 2, 3, 1. All roots revealed at four feet from trunk (Image 8). There is a proposed tree well around this tree.

Image 8 (above): Roots emanating from coast live oak #27

Redwoods #13 and #14: Sewer and Storm drain alignment between #13 and #14. Five feet from trunk #13 and four feet from smaller redwood #14 (Image 9).

Image 9 (above): Location of bore between tree #13 and #14

Coast live oak #15: Proposed storm drain would pass close to tree on the backside of the lean (Image 10).

Image 10 (above): Location of bore past tree #15

Kielty Arborist Services, LLC revised report dated October 14, 2016

The reports include a tree inventory with tree numbers, species, trunk diameters, conditions (combined health and structure) numerically defined, and comments.

The "Summary" portion of the report describes trunk protection measures around trees #1, #2, and #26. There is discussion about trenching, materials, root cutting guidelines, and watering requirements.

Coast live oak #3 is suggested to be relocated while #4 is to be removed.

Discussion of trenching for the storm drain past tree #14 along with guidelines for trenching.

Discussion of trenching and protection guidelines near trees #15, #16, and #34.

Tree protection fence placed outside the drip line distances around olives (*Olea europaea*) #20 through #24 with no expected impacts.

The "Tree Protection Plan" section describes fence, trenching, and irrigation for trees retained and is generic guidelines for those subjects.

The "assignment" is to "inspect and comment" on the trees.

There are no "limits of the assignment" to describe what plans were reviewed and no "purpose and use of the report" describing what the report is to be used for and by whom.

"Observations" are described in the "Method" section and include some subjective material including the actual condition rating rather than stating simple facts about the trees and site. This blends both facts and opinions into one narrative.

"Summary" provides a narrative including the elements of discussion, conclusion, and recommendations in no particular order or description. The "Tree Protection Plan" consists of typical boiler plate guidelines for tree protection which are all acceptable practices.

Kielty Arborist Services, LLC revised report dated May 3, 2017

This original report was dated November 30, 2016 and I did not review the original. This report was intended to provide some clarity regarding the road construction near trees #1, #2, and #26 and comment on the dead birch (*Betula pendula*) along the property boundary.

Below is a paraphrased version of the report "Summary" along with quoted sections:

The report suggests using Structural Soil® (Cornell University Mix) with concrete pavers on top around tree #1, #2, and #26.

"The excavation for the new drive will be done by hand severing no significant roots of the oaks."

"The use of hand digging and the Structural Soil® will reduce impacts to the oaks to an acceptable level. The driveway excavation and installation of the Structural Soil® will be supervised by the site arborist. Impacts should be minor to the 3 oaks with no long term impacts expected. Trimming of the oaks is expected to be minor to facilitate the new driveway." This is all reference to the proposed Cardinal Pass Way.

There are construction impact ratings provided with no definitions of what the terms mean other than what is inferred. The impacts around trees #1, #2, and #26 are described as "Significant, Moderate, and Major" respectively for those trees. These impact rating are not consistent with the previous paragraph stating "Impacts should be minor to the 3 oaks with no long term impacts expected. "

"Excavation for the driveway will result in some root loss for tree #1, #2 and #26. Root loss should be kept to less than 25 percent."

Discussion

Cardinal Pass Way construction near trees #1, #2, and #26

The trenches in front of the trees and existing site conditions indicate significant tree roots in the the soil directly in front of trees #1 and #2 while tree #26 had very few (only three 1 inch diameter roots were revealed). The *ISA Best Management Practices: Managing Trees During Construction, Second Edition 2016* suggests cutting roots as far as possible from the main stem. When roots are cut close to the trunk stability and health can be significantly compromised, especially when within one to one-and-one-half times the diameter from the trunk (Fite, K., Smiley, T. 2016). Typically oak trees can survive when roots are removed at a maximum encroachment distance of five times the trunk diameter on one side (Costello, L. Hagan, B. Jones, K. 2011)(Coates, B.). Root removal for the road would be well within these limits.

It is a common guideline to allow for roots less than two inches in diameter to be cut clean and removed. However, in this instance the roots revealed, although small in diameter, are the only significant roots in this portion of soil. Root removal would likely result in a significant decline in tree health or stability for trees #1, #2, and #26. The guideline or recommendation allowing for roots less than two inches in diameter to be removed must be eliminated in this circumstance.

The section of road engineering provided indicates the existing soil up to the trunks is to be removed and then filled back with Structural Soil® (Note: Structural Soil® is a trademark of Cornell University and is also commonly referred to as “engineered soil mix” to avoid trademark issues). This could be accomplished if the soil is to be removed through Hydrovac® or Air Spade® excavation. This type of soil replacement could preserve roots in place provided critical roots are avoided. Backfilling the entire area over the roots could be accomplished in theory, but could prove difficult in reality. There may also be other materials or techniques to allow for air exchange at the root/road interface which should be explored.

Root removal or cutting will significantly compromise the trees #1, #2, #26, and #27 and a soil replacement regime could allow for tree preservation and the construction of the roadway with varying results. The trees could survive this process or they could perish within a few years. Nevertheless there would be infrastructure in place to plant new trees with success in the event the trees decline or die.

There is another concern with the roadway section of the plan that could be a result of poor guidance and no fault to the engineer. The sections for each tree indicate the new grade of Cardinal Pass Way with all the Structural Soil® and pavers will match the existing grade. However, this may not be necessary because the trees were somewhat buried in fill with roots about one foot below grade to start with. For example the new finished grade is approximately one foot higher than the depth of the significant roots identified in most instances. There may not be a need to raise the roadway surface this high over the existing roots unless it is for structural or road stability purposes (Image 11). Another alternative is to just use pavers and Structural Soil® under the trees, or within a designated area, and construct the remaining portion of the roadway with other materials. This would allow for a "Tree Well" under the trees that could support both existing or new plantings if required.

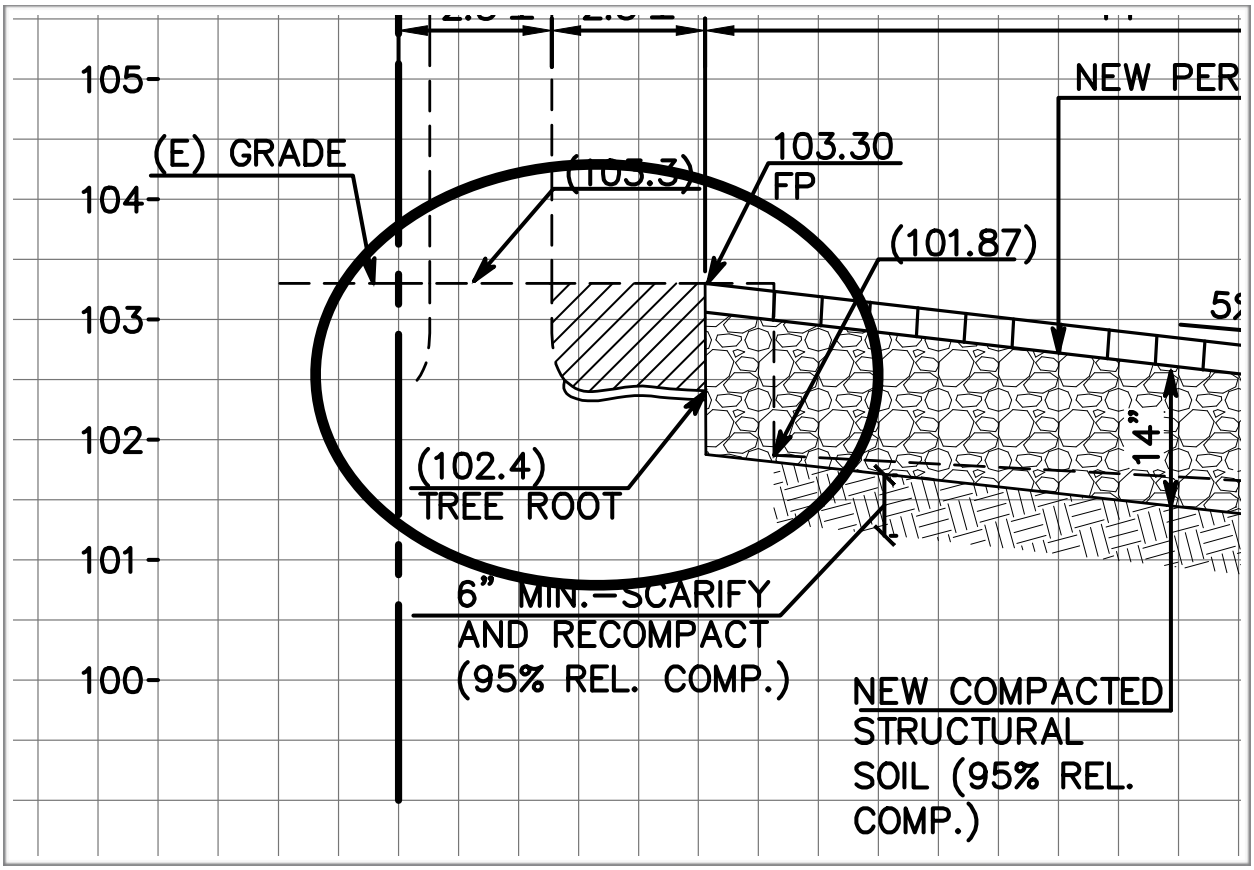


Image 11: Roadway Section with existing root location and ultimate height/depth of Cardinal Pass Way.

Driveway near coast live oak #27

Coast live oak #27 will require a "Tree Island" for preservation. Tree wells and islands are sometimes used to protect and preserve trees when infrastructure is to be built around them. To clarify terms, tree "wells" are used when trees are at or below grade and tree "islands" are used when trees are already growing above grade. A tree "island" is basically a containerized tree which is what would be required for this tree's preservation. The tree has approximately a seven inch diameter trunk and a true island would require a radius of seven feet around the stem (1 foot per inch trunk diameter radius). However, because only one side of the existing root area will be affected, it is possible to encroach up to the tree's Critical Root Zone area of five time the trunk diameter (about three feet from the trunk). Significant watering, mulching, and other mitigation measures would need to take place but the tree could be preserved and the driveway constructed nearby. The plans indicate how this will be constructed and again it is possible and if the tree were to decline the space for a new tree would be established. This is a small tree that could be replaced relatively easily through commonly found boxed trees.

Trees #10 through #14

The plans indicate a joint trench that would carry both the sewer and storm drain out to Harrison Way between trees #13 and #14 and no longer past trees #10 through #14. Coast redwoods are considered to have good tolerance to root disturbance if irrigated properly to help mitigate any loss (Matheny, N., Clark J. 1998). The largest trees are #10 and #13 while the remaining trees have smaller diameter trunks. The recommended Tree Protection Zone (TPZ) for this species, age, and size is a factor of eight times the trunk diameter in feet or about 33 feet from the trunks (Fite, K., Smiley, T. 2016). The proposed building footprints are outside this TPZ range and limiting grading in the TPZ will be critical.

There is a sanitary sewer and clean out near or under tree #11. Greater detail on how this will be installed or if this is connected to existing sewer is required.

Establishing irrigation needs is difficult and some generalities can be accepted. The most critical element is that the soil is thoroughly wetted in the upper 6 to 18 inches. Mr. Kielty recommended 300 gallons every two weeks, essentially during the dry season. The average trunk diameter of the five trees is about 31 inches. Typical watering schemes can be established by placing ten gallons of water per inch trunk diameter. In my opinion the recommended amounts by Kielty conform with that recommendation. Watering will need to be monitored and mulch will need to be established in the TPZ as well and has been recommended.

Trees #13 and #14 and directional boring

The plans indicate separate bore holes adjacent to each other for the storm drain and sewer out to Harrison Way near the same location. The established location is between trees #13 and #14. Mr. Kielty recommended at least a four foot boring depth if this was to occur, although he was not privy to the proposed current location at the time of that recommendation. The *ISA Best Management Practices: Managing Trees During Construction, Second Edition 2016* suggests depths at a minimum of three feet. Because the trees are large and the location of the bore hole is close to the trunks, I too would recommend at least a four foot deep bore. Because the bore hole is very close to trees #13 and #14 it is not possible to meet any recommended offset in this location. The recommended length of the bore hole is established at twelve times the trunk diameter which would require a sixty foot bore (30 feet on each side) which is outside the recommended TPZ (Fite, K., Smiley, T. 2016). The hole on the Harrison Way side is obviously closer because the street, curb, and gutter of the residential cul-de-sac is already established.

Group protection

There are three distinct groups of tree that should be protected which include oaks #1, #2, #26, and #27, coast redwoods #10 through #14, and the oaks and olives along Santa Cruz Avenue #18 through #24. It is best to establish these areas to retain the perimeter groups. Retaining their overlapping root area provides the best chance for survival.

Tree planting and mitigation

The tree care industry does not have an established mitigation ratio or tree size accounting for loss. San Mateo County provides some mitigation replanting requirements for certain geographic zones and this area is subject to the significant tree ordinance which requires planting of mitigation trees "acceptable to the Community Development Director". Since this project is a subdivision, the Director has broad discretion in establishing replanting requirements. The standard of care for tree replacements in Menlo Park also does not have an established replacement plan and is typically a discretionary decision. Only the nearby community of Palo Alto provides a canopy replacement ratio (Table 1). These ratios can be considered the standard of care for the community in the absence of an established plan. Most of the trees to be removed fall into the 28 to 40 foot crown size and four 24 inch box or two 48 inch box replacements should be required for each removal. Locations and species will need to be determined but should consist of drought adapted or naturally occurring plants.

Table 1: Tree Canopy - Replacement Standard

Column 1	Column 2	Column 3
Canopy of the tree to be removed (average distance across the canopy)	**Replacement Trees**	**Alternative Tree**
4'-9'	Two 24" Box Size	One 36" Box Size
10'-27'	Three 24" Box Size	Two 36" Box Size
28'-40'	Four 24" Box Size	Two 48" Box Size
56'-60'	Six 24" Box Size	Two 48" Box Size & Two 36" Box Size
60+	Two 24" Box Size & Two 36" Box + Two 48" Box Size	

Provided by the City of Palo Alto 2001.

Clarification for tree #3 and the birch near the adjacent site

Tree #3 is not suitable to transplant and should be removed and replaced. A tree's suitability for transplantation is determined based on its health, structure, age, species characteristics, longevity, current and new growing environments. Prior to transplanting it is important to assess these characteristics. The tree's general health, foliar color and density, and signs of insects or disease are assessed. The structural condition of the tree including the roots, overall shape and symmetry of the crown, current growing environment, and past and future pruning needs all need to be accounted for and be acceptable. Species data and transplantation history and any other conditions that could limit the survival of the plant are also assessed. The transplant site including any above ground or underground utilities, access, soil conditions, slope, grade, and orientation, is also assessed during the evaluation for suitability.

In this instance the tree has a sweep or lean and the trunk flare has been obstructed and deformed. There are overhead utility wires adjacent to the crown. The tree is not a desirable specimen for transplanting due to these critical defects in its form and structure. The tree does not meet the acceptable criteria for transplanting.

The birch tree near the adjacent site is dead and should be removed. The tree is also not large enough to qualify as a significant tree in San Mateo County.

Review Kielty Arborist Services, LLC revised report dated October 14, 2016

The reports provided by Kielty Arborist Services provides recommendations for trenching near trees and irrigation along with roadway base materials and techniques to avoid damage to roots. The report also calls for trunk protection on trees #1, #2, and #26 with wooden slats and recommends fence be placed at 15 feet or one foot outside the drip line distance. The report calls for fence to be placed outside the drip line of the olives #20 through #24. These tree protection measures are adequate, reasonable, and meet industry standards for the potential activities under the trees.

Although there is no TPZ fence location suggestions for redwoods #10 through #14 it is mentioned.

There are concerns with the report based on the "assignment, limitations, purpose and use". The report only states the site was visited "for the purpose of inspecting and commenting on the trees". If this is truly the assignment the report provided that detail and discussion.

The report does not state it was intended to be a "tree protection plan" although much of that information is provided and discussed.

The formatting lacks the typical logical sequence of report writing first established in the *Guide to Report Writing for Consulting Arborists, 1995* and later revised as *A Consultant's Guide to Writing Effective Reports, 2004.* Typical arborist's reports should at a minimum include the assignment, observations, discussion, conclusion, and recommendations in that logical sequence. It is not required to write in this format but it is easier to follow and industry standard.

The primary concern with the report is the "assignment" is unclear and does not recognize any limitations including plans reviewed. The lack of information about the roots around trees #1, #2, and #26. There are no optional recommendations for realigning any utilities or avoiding trees where possible, but simply to build as is. The report does not provide any tree protection zone distances for the redwoods other than the boiler plate information at the end stating it should be placed outside the drip line. The tree protection fence detail at the back of the report does not meet industry standards for "sturdy fence" while the description of fence in the report is adequate driven chain link.

Kielty Arborist Services, LLC revised report dated May 3, 2017

This report has little relevance to the most recent plans or conditions. The new information regarding the roots revealed in February is not referenced. The impact ratings are inconsistent with the discussion in the report. The "summary" in the report should not be construed as recommendations for preservation.

Conclusion

If the road alignment requires the removal of roots directly adjacent to trees #1, #2, and 26 the trees will likely decline or become unstable. The proposed road is to be raised to meet the grade of the trees or at a minimum higher than the exposed roots. Root washing the area and immediately backfilling with Structural Soil® can be performed to help reduce the likelihood of failure but the results are an uncertainty. Coast live oak #27 will have a "Tree Island" constructed around it for preservation. Significant watering, mulching, and other mitigation measures would need to take place to preserve the tree and construct the driveway as proposed. The tree is small and if it were to fail there is now infrastructure in place to replant with an appropriate specimen.

The sanitary sewer and storm drains are now proposed to running between trees #13 and #14 through directional boring. This is the least intrusive mechanism to install these utilities and it is not expected to adversely affect the redwoods. Because the trees are large and the location of the bore hole is close to the trunks at least a four foot deep bore is required. Because the bore hole is very close to trees #13 and #14 it is not possible to meet any recommended offset while the recommended length of the bore is twelve times the trunk diameter, or sixty feet has been established.

The tree care industry does not have an established mitigation ratio or tree size accounting for loss. San Mateo County provides some mitigation replanting requirements for certain geographic zones and this area is subject to the significant tree ordinance which requires planting of mitigation trees "acceptable to the Community Development Director". Because this project is a subdivision, the Director has broad discretion in establishing replanting requirements. However, the nearby community of Palo Alto also provides a canopy replacement ratio. Most of the trees to be removed fall into the 28 to 40 foot crown size and four 24 inch box or two 48 inch box replacements should be required for each removal. Tree locations and species are to be determined later.

Tree #3 is not suitable to transplant and should be removed and replaced while the birch near the adjacent site is dead and should be removed.

There are three distinct groups of trees that should be protected which include oaks #1, #2, and #26, coast redwoods #10 through #14, and the olives along Santa Cruz Avenue #20 through #24.

The reports provided by Kielty Arborist Services provides tree protection guidelines that are adequate, reasonable, and meet industry standards. The reports do not state they were intended to be a tree protection plan, although much of that information is provided and discussed. Aside from now mostly irrelevant content typical arborist's report should include the assignment, observations, discussion, conclusion, and recommendations in that logical sequence. This format facilitates easier reading of the material presented.

Recommendations

1. The designated project arborist should have the minimum qualifications or designations: International Society of Arboriculture Board Certified Master Arborist® (BCMA) or Certified Arborist Municipal Specialist® (CAMS), or an American Society of Consulting Arborists Registered Consulting Arborist® (RCA®). County selected arborist shall observe, document (photo, video and written) and report to County that the procedures and processes outlined in this report are conducted properly and will provide regular reports to the County.

2. All tree maintenance and care shall be performed by a qualified arborist with a C-61/D-49 California Contractors License. Tree maintenance and care shall be specified in writing according to American National Standard for Tree Care Operations: *Tree, Shrub and Other Woody Plant Management: Standard Practices* parts 1 through 10 and adhere to ANSI Z133.1 safety standards and local regulations.

3. Prior to site improvements, grading or construction provide quantified Tree Protection Zone distances and requirements for protection during construction distances for the three tree groups which include the following: oaks #1, #2, #26, and #27, coast redwoods #10 through #14, and the oaks and olives along Santa Cruz Avenue #18 through #24. Place all the tree protection fence locations and guidelines on the plans including the gradin, drainage, and utility plans. Alternatively create a separate plan sheet that includes all these measures labeled "T-1 Tree Protection Plan."

4. Provide a landscape plan that is to include the type size, and location of all replacement trees using the established table or recommended plantings by San Mateo County.

Cardinal Pass Way and Driveway

5. No roots of any size are to be cut around trees #1, #2, #26, and #27 without the approval of the project arborist. The root area under the trees and existing berm is to be washed away or removed through Hydrovac® or Air Spade® to allow for existing roots to be retained and monitored by the designated project arborist.

6. The roadway is to be constructed with porous materials and engineered soil mix (ESM) or Structural Soil®. All Engineered Soil mixing shall be performed by an agreed upon supplier using appropriate soil measuring, mixing and shredding equipment of sufficient capacity and capability to assure proper quality control and consistent mix ratios. No mixing of engineered soil mix at the project site shall be permitted. Mix suppliers include: TMT Enterprises, 1996 Old Oakland Road, San Jose, California, (408) 432-9040, or approved equal licensed by Amereq Inc. to distribute Engineered Soil according to the Cornell University patent.

Boring and Trenching near #10 through #14

7. Bore hole for the sewer and storm drain must originate outside the TPZ of approximately 30 feet from the coast redwoods #13 and #14. The TPZ for trees #10 through #14 should be 33 feet.

8. Notification: Contractor shall notify the project arborist a minimum of 24 hours in advance of the activity in the TPZ.

9. Tunneling & Directional Drilling: If trenching or pipe installation has been approved within the TPZ, then the trench shall be either cut by hand, air-spade, hydraulic vac excavation or, by mechanically boring the tunnel under the roots with a horizontal directional drill and hydraulic or pneumatic air excavation technology. In all cases, install the utility pipe immediately, backfill with soil and soak within the same day.

10. If trenches are cut and tree roots 2-inches or larger are encountered they must be cleanly cut back to a sound wood lateral root. All exposed root areas within the TPZ shall be backfilled or covered within one hour. Exposed roots may be kept from drying out by temporarily covering the roots and draping layered burlap or carpeting over the upper 3-feet of trench walls. The materials must be kept wet until backfilled to reduce evaporation from the trench walls. No roots greater than 2 inches in diameter should be cut or damaged without the approval of the project arborist.

11. Any approved excavation, demolition or extraction of material shall be performed with equipment sitting outside the TPZ. Methods permitted are by hand digging, hydraulic or pneumatic air excavation technology. Avoid excavation within the TPZ during hot, dry weather.

12. If excavation or trenching for drainage, utilities, irrigation lines, etc., it is the duty of the contractor to tunnel under any roots 2-inches in diameter and greater.

Bibliography

American National Standard for Tree Care Operations: Tree, Shrub and Other Woody Plant Management : Standard Practices (Management of Trees and Shrubs During Site Planning, Site Development, and Construction)(Part 5). Londonderry, NH: Secretariat, Tree Care Industry Association, 2012. Print.

Costello, Laurence Raleigh, Bruce W. Hagen, and Katherine S. Jones. *Oaks in the urban landscape: selection, care, and preservation*. Oakland, CA: University of California, Agriculture and Natural Resources, 2011. Print.

Fite, Kelby, and Edgar Thomas. Smiley. Managing trees during construction, second edition. Champaign, IL: International Society of Arboriculture, 2016.

Matheny, Nelda P., Clark, James R. Trees and development: A technical guide to preservation of trees during land development. Bedminster, PA: International Society of Arboriculture 1998.

Appendix A: General Tree Protection Guidelines

Pre-Construction Meeting with the Project Arborist

Tree protection locations should be marked before any fencing contractor arrives.

Prior to beginning work, all contractors involved with the project should attend a pre construction meeting with the project arborist to review the tree protection guidelines. Access routes, storage areas, and work procedures will be discussed.

Tree Protection Zones and Fence Specifications

Tree protection fence should be established prior to the arrival of construction equipment or materials on site. Fence should be comprised of six-foot high chain link fence mounted on eight-foot tall, 1 7/8-inch diameter galvanized posts, driven 24 inches into the ground and spaced no more than 10 feet apart. Once established, the fence must remain undisturbed and be maintained throughout the construction process until final inspection.

The fence should be maintained throughout the site during the construction period and should be inspected periodically for damage and proper functions. Fence should be repaired, as necessary, to provide a physical barrier from construction activities.

Tree Protection Signs

All sections of fencing should be clearly marked with signs stating that all areas within the fencing are Tree Protection Zones and that disturbance is prohibited. Text on the signs should be in both English and Spanish (Appendix B).

Monitoring

Any trenching, construction or demolition that is expected to damage or encounter tree roots should be monitored by the project arborist and should be documented.

The site should be evaluated by the project arborist after construction is complete, and any necessary remedial or mitigation work or recommendations should be noted.

Restrictions Within the Tree Protection Zone

No storage of construction materials, debris, or excess soil will be allowed within the Tree Protection Zone. Spoils from the trenching shall not be placed within the tree protection zone either temporarily or permanently. Construction personnel and equipment shall be routed outside the tree protection zones.

Boring or Tunneling

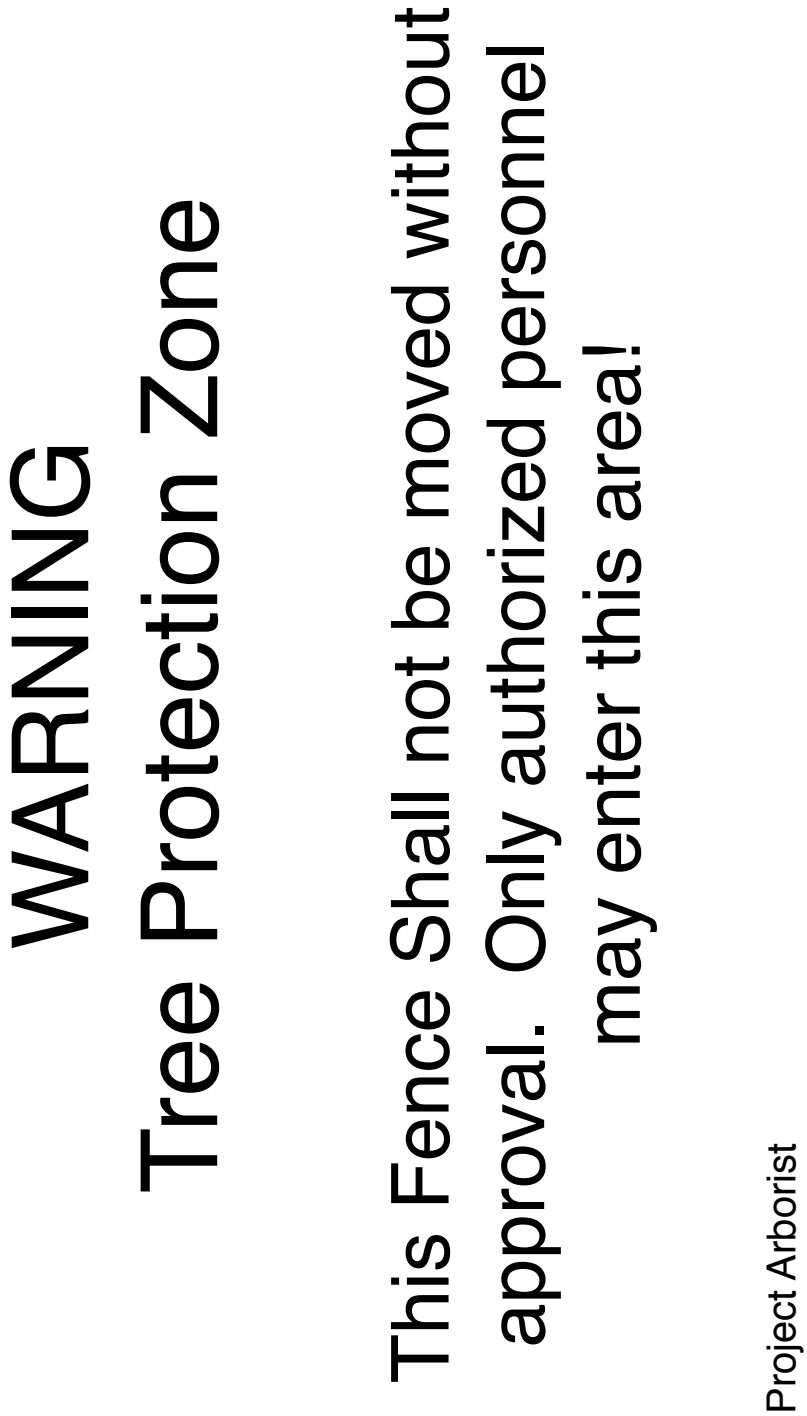
Boring machines should be set up outside the drip line or established Tree Protection Zone. Boring may also be performed by digging a trench on both sides of the tree until roots one inch in diameter are encountered and then hand dug or excavated with an Air Spade® or similar air or water excavation tool. Bore holes should be adjacent to the trunk and never go directly under the main stem to avoid oblique (heart) roots. Bore holes should be a minimum of three feet deep.

Timing and Watering

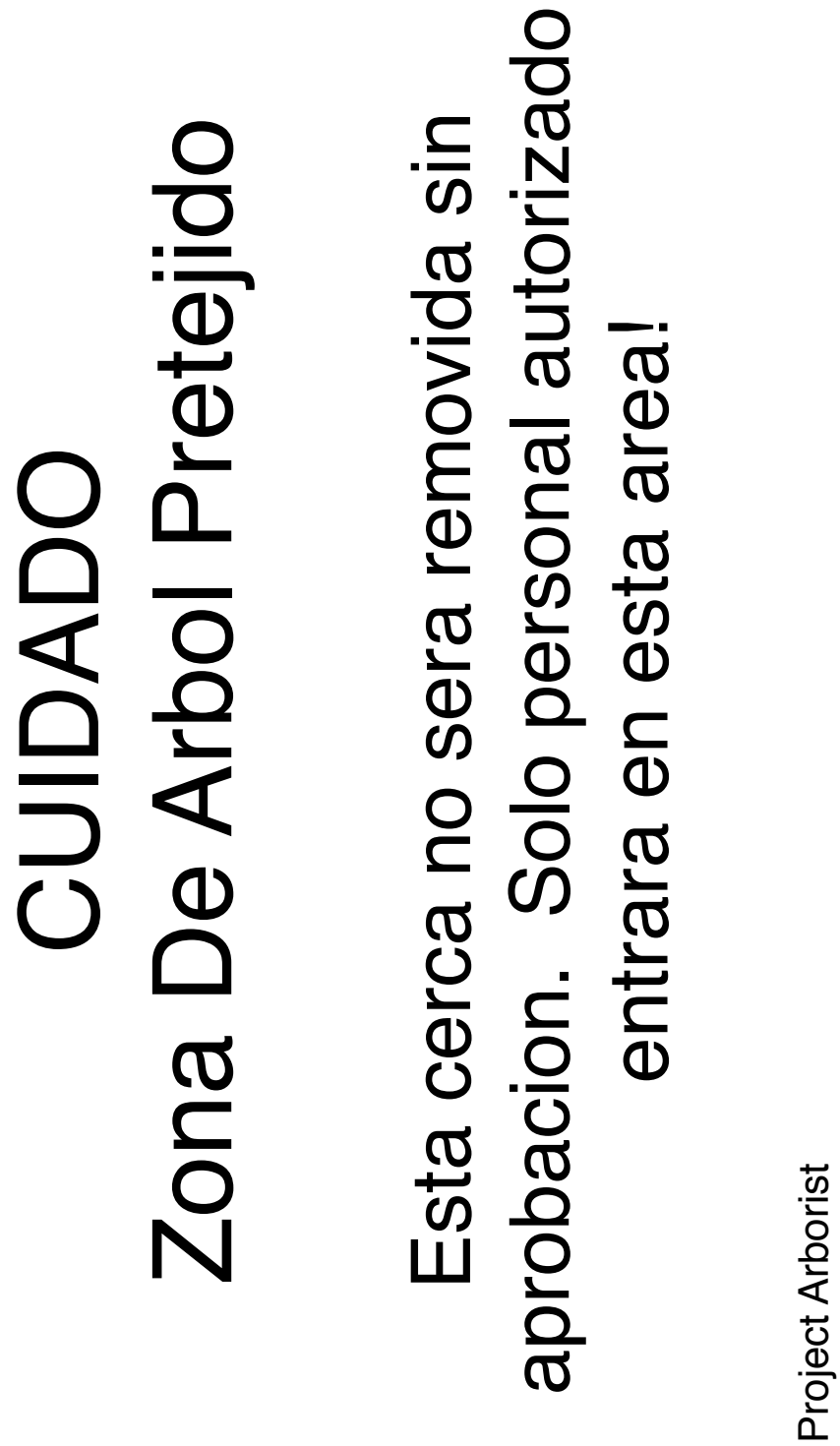
If the construction is to occur during the summer months supplemental watering should be applied to help ensure survival during and after construction. Ten gallons of water per inch trunk diameter shall be applied every two weeks during the summer months. Soil should be wetted to field capacity and allowed to dry prior to irrigating again. Infrequent soaking is better than frequent low level wetting.

Appendix B: Sample Tree Protection Signs

B1: English



B2: Spanish


CUIDADO
Zona De Arbol Pretejido
Esta cerca no sera removida sin aprobacion. Solo personal autorizado entrara en esta area!
Project Arborist

Qualifications, Assumptions, and Limiting Conditions

Any legal description provided to the consultant is assumed to be correct. Any titles or ownership of properties are assumed to be good and marketable. All property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

All property is presumed to be in conformance with applicable codes, ordinances, statutes, or other regulations.

Care has been taken to obtain information from reliable sources. However, the consultant cannot be responsible for the accuracy of information provided by others.

The consultant shall not be required to give testimony or attend meetings, hearings, conferences, mediations, arbitration, or trials by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services.

This report and any appraisal value expressed herein represent the opinion of the consultant, and the consultant's fee is not contingent upon the reporting of a specified appraisal value, a stipulated result, or the occurrence of a subsequent event.

Sketches, drawings, and photographs in this report are intended for use as visual aids, are not necessarily to scale, and should not be construed as engineering or architectural reports or surveys. The reproduction of information generated by architects, engineers, or other consultants on any sketches, drawings, or photographs is only for coordination and ease of reference. Inclusion of said information with any drawings or other documents does not constitute a representation as to the sufficiency or accuracy of said information.

Unless otherwise expressed: a) this report covers only examined items and their condition 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 structural problems or deficiencies of plants or property may not arise in the future.

Certification of Performance

I Richard Gessner, Certify:

That I have personally inspected the tree(s) and/or the property referred to in this report, and have stated my findings accurately. The extent of the evaluation and/or appraisal is stated in the attached report and Terms of Assignment;

That I have no current or prospective interest in the vegetation or the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved;

That the analysis, opinions and conclusions stated herein are my own;

That my analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted Arboricultural practices;

That no one provided significant professional assistance to the consultant, except as indicated within the report.

That my compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party, nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any other subsequent events;

I further certify that I am a Registered Consulting Arborist® with the American Society of Consulting Arborists, and that I acknowledge, accept and adhere to the ASCA Standards of Professional Practice. I am an International Society of Arboriculture Board Certified Master Arborist® and Tree Risk Assessor Qualified. I have been involved with the practice of Arboriculture and the care and study of trees since 1998.

Richard J. Gessner 

ASCA Registered Consulting Arborist® #496
ISA Board Certified Master Arborist® WE-4341B
ISA Tree Risk Assessor Qualified

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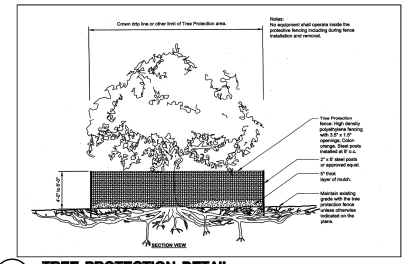
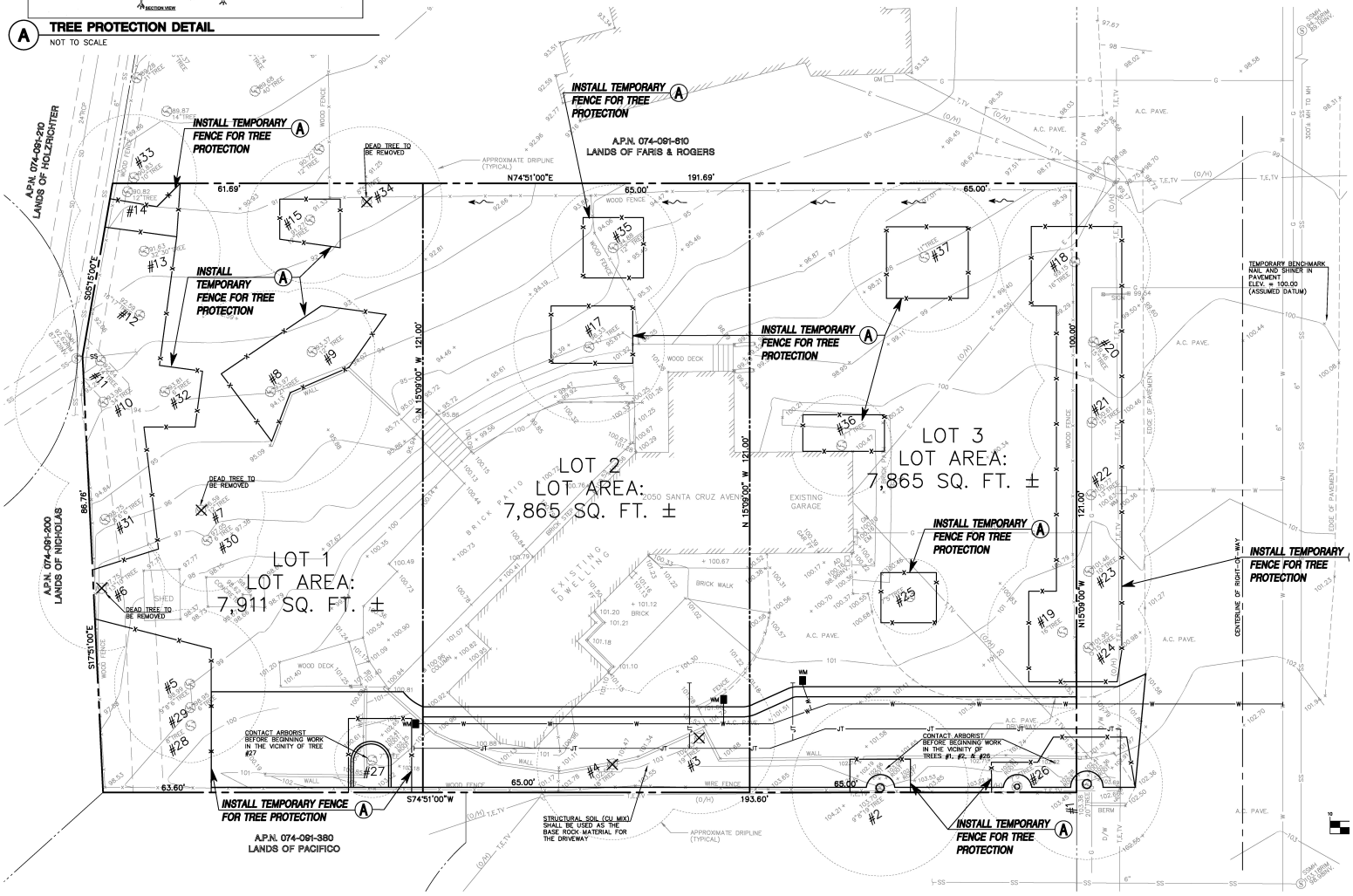


A **TREE PROTECTION DETAIL**
NOT TO SCALE



San Mateo County Planning Commission Meeting

Owner/Applicant: **Dave Bragg / Silicon Valley Real Ventures LLC** Attachment: **I**

File Numbers: **PLN2016-00226**

Kielty Arborist Services LLC

Certified Arborist WE#0476A
P.O. Box 6187
San Mateo, CA 94403
650- 515-9783

November 30, 2016 revised May 3, 2017

Silicon Valley Real Ventures
Attn: Mr. Dave Bragg
205 Constitution Drive
Menlo Park, CA 94025

Site: 2050 Santa Cruz, Menlo Park, CA

Dear Mr. Bragg,

As requested on Monday, November 28, 2016, I visited the above site for the purpose of inspecting and commenting on the trees on the southwest side of the existing driveway. The new proposed driveway will be in the same location with the driveway being widened. Your concern as to the impact that widening the driveway will have on these trees has prompted this visit. Included in the visit was the civil engineer, Dan Macleod, yourself and your partner group. With this information a table will be provided with an impact table for the trees to remain.

Observations:
During the meeting it was discussed that the grade would be lowered near the trees 1, 2 and #26 and raised (cut and fill) at the opposing side of the drive. An exploratory trench was dug 12 inches deep at a point 6 inches from the trunk of tree #1 (proposed edge of drive). At the 12 inch depth no roots or root flare were discovered. The lack of root flare and roots indicated that the area from the edge of the existing driveway to the trees has been filled. The rock wall at the edge of the drive apparently was installed to retain the fill. The fill area is believed to be 18-24 inches deep.

Exploratory trench 6 inches from the trunk of tree #1. The trench was dug 12 inches exposing no roots.

ATTACHMENT J

During our visit I inspected a small birch tree (6 and 6 inches in diameter) the tree is beyond the wooden fence and was believed to be on the neighboring property. The tree has very poor vigor and is nearly dead. Years of less than normal rainfall and no irrigation has contributed to the decline of this tree.

Small nearly dead birch on the northern property line. The birch will be removed and replaced at the time of landscaping.

Summary:
The filled area around the root zones of tree #1, #2 and #26 should be removed and returned to the original grade. Fill on the root zones of oaks will often lead to crown rot and eventual death of the trees.

The new driveway will be of a porous nature (Pavers, porous concrete etc.). The excavation for the new drive will be done by hand severing no significant roots of the oaks. The exposed root area will be backfilled using structural soil (Cornell Mix) which allows root growth and still provides compaction needed for the establishment of a road bed.

The use of hand digging and the structural soil will reduce impacts to the oaks to an acceptable level. The driveway excavation and installation of the structural soil will be supervised by the site arborist. Impacts should be minor to the 3 oaks with no long term impacts expected. Trimming of the oaks is expected to be minor to facilitate the new driveway.

The small birch should be removed and replaced at the time of landscaping.

Table of impacts to retained trees:
Minor-Moderate-Significant-Major

Tree#	Species	DBH	Con	Projected impacts
1	Blue oak	19.8	55	Significant
2	Coast live oak	8.9-7.6-18.9	50	Moderate
3	Coast live oak	22.1	55	Major
10	Redwood	50est	55	Minor
11	Redwood	14.4	50	Minor
12	Redwood	16.1-16.7	55	Minor
13	Redwood	32.3-29.8	55	Minor
14	Redwood	13.9	55	Minor
15	Coast live oak	13.9	50	Minor
17	Coast live oak	20.9	55	Minor
18	Blue oak	17.2	60	Minor
19	Coast live oak	16.0	55	Minor
20	Olive	14.8	60	Minor
21	Olive	14.7	60	Minor
22	Olive	13.4	60	Minor
23	Olive	10.2	60	Minor
24	Olive	14.5	60	Minor
26	Coast live oak	6.8-4.8	55	Major

Excavation for the driveway will result in some root loss for tree #1, #2 and #26. Any roots over 2 inches in diameter must be inspected by the site arborist prior to the start of construction. Root loss should be kept to less than 25 percent. Root loss will be mitigated by irrigating the trees more than normal and continued inspections. Exposed roots will be covered with layers of burlap and kept moist. The site arborist will on the property for the excavation.

The information included in this report is believed to be true and based on sound arboricultural principles and practices.

Sincerely,

Kevin R. Kielty
Certified Arborist WE#0476A

Kielty Arborist Services

Certified Arborist WE#0476A
P.O. Box 6187
San Mateo, CA 94403
650- 515-9783

May 6, 2016, Revised October 14, 2016

Silicon Valley Real Ventures
Attn: Mr. Dave Bragg
205 Constitution Drive
Menlo Park, CA 94025

Site: 2050 Santa Cruz, Menlo Park, CA

Dear Mr. Bragg,

As requested on Wednesday, May 4, 2016, I visited the above site for the purpose of inspecting and commenting on the trees. New homes are planned for this site and your concern as to the future health and safety of the trees has prompted this visit.

Method:
All inspections were made from the ground; the tree was not climbed for this inspection. The trees were located on a map provided by you. The trees were then measured for diameter at 54 inches above ground level (DBH or diameter at breast height). The tree was given a condition rating for form and vitality. The trees' condition rating is based on 50 percent vitality and 50 percent form, using the following scale.

1	-	29	Very Poor
30	-	49	Poor
50	-	69	Fair
70	-	89	Good
90	-	100	Excellent

The height of the tree was measured using a Nikon Forestry 550 Hypsometer. The spread was paced off. Comments and recommendations for tree protection will be provided.

Survey:

Tree#	Species	DBH	CON	HT/SP	Comments
1	Blue oak *(Quercus douglasii)*	19.8	55	30/30	Fair vigor, fair form, at edge of existing driveway.
2	Coast live oak *(Quercus agrifolia)*	8.9-7.6-18.9	50	30/35	Fair vigor, poor-fair form, multi leader.
3	Coast live oak *(Quercus agrifolia)*	22.1	55	35/30	Fair vigor, fair form, near southern property **To be relocated**

ATTACHMENT K

2050 Santa Cruz/10/14/16 (2)

Tree#	Species	DBH	CON	HT/SP	Comments
4R	Coast live oak *(Quercus agrifolia)*	20.3	40	35/30	Fair vigor, poor form, severe lean.
5	Siberian elm *(Ulmus pumila)*	9.0-8.0-5.7	20	35/30	Poor vigor, poor form, multi leader.
6	Siberian elm *(Ulmus pumila)*	13.3-10.6	0	35/25	Dead.
7	Siberian elm *(Ulmus pumila)*	12.3	0	35/25	Dead.
8	Ash *(Fraxinus uhdei)*	30est	35	45/40	Poor vigor, poor form, in severe decline, recent large leader failure.
9	Camphor *(Cinnumum camphora)*	30est	30	35/25	Poor vigor, poor form, in decline.
10	Redwood *(Sequoia sempervirens)*	50est	55	60/35	Poor-fair vigor, fair form.
11	Redwood *(Sequoia sempervirens)*	14.4	50	50/25	Fair vigor, fair form, suppressed.
12	Redwood *(Sequoia sempervirens)*	16.1-16.7	55	60/25	Poor-fair vigor, poor form, topped.
13	Redwood *(Sequoia sempervirens)*	32.3-29.8	55	65/30	Fair vigor, poor form, topped.
14	Redwood *(Sequoia sempervirens)*	13.9	55	60/20	Fair vigor, poor form, suppressed.
15	Coast live oak *(Quercus agrifolia)*	13.9	50	30/25	Good vigor, poor-fair form, leans south.
16	Mayten *(Maytenus boaria)*	13.9	0	16/18	Dead.
17	Coast live oak *(Quercus agrifolia)*	20.9	55	40/30	Good vigor, fair form, codominant at 8 feet.

2050 Santa Cruz/10/14/16 (3)

Tree#	Species	DBH	CON	HT/SP	Comments
18	Blue oak *(Quercus douglasii)*	17.2	60	35/30	Fair vigor, fair form, one sided.
19	Coast live oak *(Quercus agrifolia)*	16.0	55	35/30	Fair vigor, fair form.
20	Olive *(Olea europa)*	14.8	60	30/25	Good vigor, fair form, makes good screen.
21	Olive *(Olea europa)*	14.7	60	30/25	Good vigor, fair form, makes good screen.
22	Olive *(Olea europa)*	13.4	60	30/25	Good vigor, fair form, makes good screen.
23	Olive *(Olea europa)*	10.2	60	30/25	Good vigor, fair form, makes good screen.
24	Olive *(Olea europa)*	14.5	60	30/25	Good vigor, fair form, makes good screen.
25	Pineapple guava *(Feijoa sellowiana)*	6.7-4.8-2.8	45	15/15	Poor vigor, poor form, multi leader.
26	Coast live oak *(Quercus agrifolia)*	6.8-4.8	55	20/15	Good vigor, poor-fair form, low branching.
27	Coast live oak *(Quercus agrifolia)*	7.2	55	25/15	Fair vigor, fair to poor form, curved trunk.
28	Siberian elm *(Ulmus pumila)*	8.4	50	25/15	Poor-fair vigor, fair form.
29	Siberian elm *(Ulmus pumila)*	7.9	50	25/20	Poor-fair vigor, fair form.
30	Pecan *(Carya illinoinensis)*	7.0	45	25/20	Poor vigor, fair form.
31	Olive *(Olea europa)*	8.8-6.8-6.7	35	30/20	Poor vigor, poor form.
32	Flowering plum *(Prunus cerasifera)*	6.3-3.3	15	30/25	Poor vigor, poor form.

Tree#	Species	DBH	CON	HT/SP	Comments
33	Valley oak *(Quercus agrifolia)*	9.5	50	30/25	Poor-fair vigor, poor form.
34R	Black acacia *(Acacia melanoxylon)*	8.2-4.5	0	40/30	Dead.
35	Maple *(Acer spp.)*	11.4	40	35/25	Poor vigor, fair form, in decline.
36	Strawberry tree *(Arbutus unedo)*	7.3-7.4	45	18/20	Fair to poor vigor, poor form, heavy decay at crotch.
37	Black acacia *(Acacia melanoxylon)*	10.6	45	35/30	Fair to poor vigor, codominant at 9 feet, invasive tree.

R-*Indicates proposed removal*

Summary:

The trees on site are a mix of native oaks and several species of imported trees including redwoods which are not native to this area of San Mateo County. The site has not been well maintained in recent years and a majority of the trees are now in decline. The valuable trees on the site are on the perimeter of the property ideal for construction.

Oak trees #1,2, and #26 are located on the perimeter of the property in close proximity to the proposed private road way. Tree protection for these trees during construction of the roadway shall consist of wooden slats placed against the trees trunks and wrapped with straw wattle. On the outside of the straw wattle orange construction site fencing shall be wrapped around these trees. If construction of the proposed drain line is to occur before the construction of the roadway, tree protection for these trees should be placed at 15 feet from the trunks of the trees or at 1 foot outside the trees driplines(whichever is greater).

The site plan show a small area where the proposed road way opens up in order to allow room trees #1,2, and #26. It is recommended that the roadway be a pervious material(if possible) in order to allow for water penetration to the root zones of the trees in close proximity to the driveway. Also all required excavation depth must be achieved using only hand tools in order to expose roots that have grown in this area and to leave them damage free. The use of an air-spade is highly recommended to achieve excavation depth. The proposed roadway should be one with the least amount of excavation as possible. Base rock material when within 20 feet of the trees in close proximity to the proposed roadway shall consist of structural soil. Structural soil can be packed around roots and compacted to engineering standards and still allow for future root growth. This will eliminate the need to cut roots in the base rock area, thus lowering potential impacts. All roots over 2 inches in diameter on top of the base rock area to be cut will need to be documented by the site arborist. Roots to be cut will need to be cleanly cut using a hand saw or loppers. The site arborist will need to be called out to the site 48 hours in advance in order to document the driveway work. It is the contractor's responsibility to contact the site arborist. If

the above recommendations are put in place impacts to these trees will be minor. Mitigations for minor root loss will consist of a deep water injection to the trees root zones in close proximity to the proposed driveway before excavation takes place. After excavation a soaker hose shall be placed underneath the trees driplines where possible and be turned on for 5 hours every 2 weeks.

Oak tree #3 is poorly located in the planned roadway. This tree will be relocated elsewhere on the property. Oak tree #4 is in poor condition with very poor form and is proposed for removal as it sits in the footprint of the proposed roadway. A replacement tree will likely need to be planted for removal of this tree.

Redwood trees #10-14 are in fair condition. These trees appear to be slightly drought stressed. Some of these trees have also been topped. It is recommended that the redwood trees be deeply watered by a licensed tree care provider. 300 gallons of clean water is recommended to be injected into each trees root zone. It is also recommended that a soaker hose be placed underneath the trees driplines and be turned on every 2 week for 6 hours at a time during the dry season.

Redwood tree #14 is located in the north west corner of the property. This tree has a diameter of 13.9 inches. A storm drain line is proposed in close proximity to this tree. This line will need to be hand dug in combination with an airspade to reach the required excavation depth. If possible boring this line at a depth of 4 feet should take place. If not possible all excavation will need to be documented when in close proximity to this tree. Hand digging and carefully laying pipes below or beside protected roots will dramatically reduce root loss, thus reducing trauma to the entire tree. The trenches should be backfilled as soon as possible with native material and compacted to near its original level. Trenches that must be left exposed for a period of time should also be covered with layers of burlap or straw wattle and kept moist. Plywood over the top of the trench will also help protect exposed roots below. Mitigations will include an irrigation plan and a deep water injection before the start of constructing the storm drain line. A soaker hose should be placed underneath the tree's dripline and be turned on every 2 weeks for 6 hours at a time during the dry season. Tree protection fencing will need to be temporarily removed during construction of the storm drain line. The fencing shall be put back in place after the drain line work has been completed. The site arborist must be called out to the site when excavation for the storm drain is to take place in order to document, inspect and to offer mitigation measures were seen fit.

The storm drain line is proposed in close proximity to trees #15,16 and 34. The storm drain line and sewer line will need to be dug by hand when underneath the dripline of these trees or bored underneath the root zone of the tree at a depth of 4 feet. The site arborist must be on site to view excavation underneath the dripline of coast live oak #15. Hand digging and carefully laying pipes below or beside protected roots will dramatically reduce root loss, thus reducing trauma to the entire tree. The trenches should be backfilled as soon as possible with native material and compacted to near its original level. Trenches that must be left exposed for a period of time should also be covered with layers of burlap or straw wattle and kept moist. Plywood over the top of the trench will also help protect exposed roots below. Mitigations consisting of an

irrigation plan will be put in place after the hand dug trench has been viewed by the site arborist. Mitigations will likely include an irrigation plan. Black acacia tree #34 is proposed for removal as it is directly in the foot print of the storm drain line. This tree is dead and should be removed regardless of construction.

Olive trees #20-24 are located along Santa Cruz Avenue. These trees are in fair condition and will be retained. These trees will be protected by tree protection fencing placed just outside of the trees driplines. No impacts are expected for these trees. The remaining trees on site will be retained and should improve as maintenance is provided. The following tree protection plan will help to reduce impacts to the retained trees.

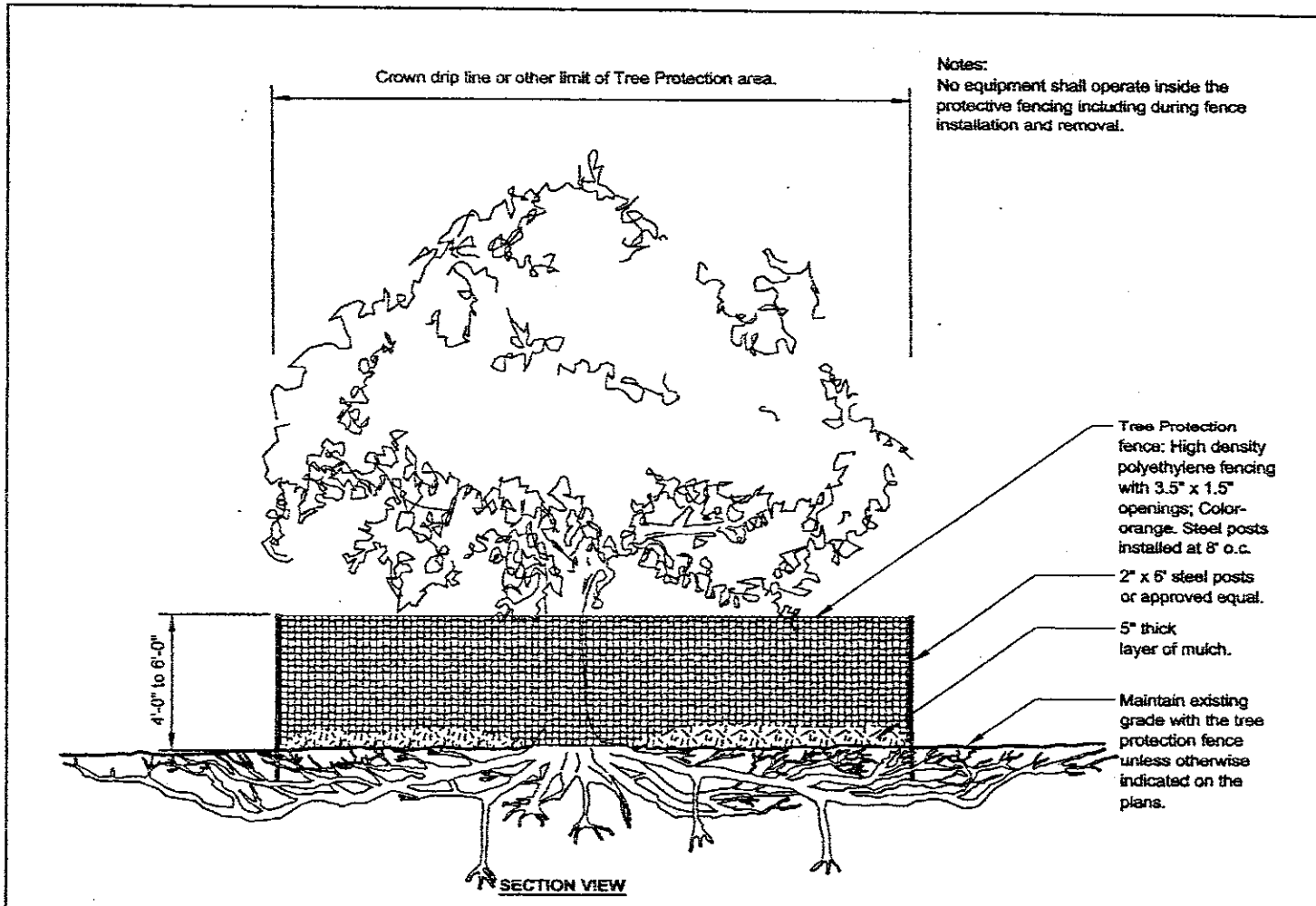
Tree Protection Plan:
Tree protection zones should be installed and maintained throughout the entire length of the project. Fencing for tree protection should be 6' tall, metal chain link material supported by metal 2" diameter poles, pounded into the ground to a depth of no less than 2'. The location for the protective fencing should be as close to the dripline of desired trees as possible, still allowing room for construction to safely continue. No materials shall be stored or cleaned inside the protection zones. Areas outside protection fence, but still beneath the tree's driplines, where foot traffic is expected to be heavy, should be mulched with 4-6" of chipper chips covered with plywood. The spreading of chips will help to reduce compaction and improve soil structure. The chip buffer should extend over the entire tree protections zone.

Trenching for irrigation, electrical, drainage or any other reason should be hand dug when beneath the driplines of protected trees. Hand digging and carefully laying pipes below or beside protected roots will dramatically reduce root loss of desired trees thus reducing trauma to the entire tree. Trenches should be backfilled as soon as possible with native material and compacted to near its original level. Trenches that must be left exposed for a period of time should also be covered with layers of burlap or straw wattle and kept moist. Plywood over the top of the trench will also help protect exposed roots below.

Normal irrigation should be maintained throughout the entire length of the project. The redwood trees will require irrigation during the warm season months. Some irrigation may be required during the winter months depending on the seasonal rainfall. During the summer months the trees on this site should receive heavy flood type irrigation 2 times a month. During the fall and winter 1 time a month should suffice. Mulching the root zone of protected trees will help the soil retain moisture, thus reducing water consumption. The native oak trees on site will not need any irrigation unless their root zones are traumatized.

The information included in this report is believed to be true and based on sound arboricultural principles and practices.

Sincerely,
Kevin R. Kielty
Certified Arborist WE#0476A



TREE PROTECTION DETAIL

NOT TO SCALE

Mighty Tree Movers Inc.
PO Box 12
Los Gatos CA 95031
Phone: 408-464-5200

ESTIMATE

SV Real Ventures LLC
Dave Bragg
2050 Santa Cruz Ave
Menlo Park CA 94025

Estimate #:	0000631
Date:	April 17, 2016
Estimate Total (USD):	$25,000.00

Item	Description	Unit Cost ($)	Quantity	Price ($)
Tree Relocation	One 21 inch diameter Live oak will be moved on site post demolition of existing structures. Trees will be side boxed, then excavated underneath and a bottom and top bracing will be banded and secured. Box will be built to withstand the strain the crane will put on the box. Sides will be slowly excavated on 4 sides about 12 inches from final root ball size of 144 to 156 inches. When roots are encountered they will be cut by hand, as the root ball is trimmed down, also by hand to final box dimensions. Sides then banded. 3-4 working days to complete. Large crane used to crane into position. Transport truck will be used for on same property move. Trees planted in 16-18 foot wide hole, depth appropriate for final grade (see below). Backfill will be 80% native soil, 20% local topsoil and organic amendment mix. Slow-release fertilizer and root hormones added to critical root zone directly after planting. A temporary soil basin will be built up around the root zone. This will help identify areas not to be travelled on by any foot or vehicle traffic and to help get subsequent irrigation to the critical root zone. Access to water on site required. * Trees may be pre-watered depending on season and will be responsibility of GC. This would include a slight berm and a heavy soaking one week prior to boxing. Tree will be guyed to protect from falling over. Plans should take into consideration guy wires for at least a year. **Note if tree is to be moved to neighboring property, price will decrease by $2000. This does not include any cement work, or time to work with PG&E to schedule a line-drop to facilitate the move.	25,000.00	1	25,000.00
Release 1	This bid is for tree moves scheduled post demolition. Boxing and craning will be one operation, any required 2nd mobilizations (due to project schedule) for crew or crane will add substantial costs. Tree protection is not included, but may be added. This bid does not include soil export from site or compaction of holes created from trees' original location. Concrete removal where tree excavation will go out onto sidewalk and streets will be the responsibility of the GC. Traffic control not included. Utilities encountered will have to be cut in place. If not able to shut off and remove, tree may not be able to be move. Final grade must be marked prior to planting, as we will want to	0.00	0	0.00

	plant a couple inches above grade. USA dig to be completed.			
Arborist	ISA Certified arborist overseeing entire project. WE-8858 CA lic# 916423	0.00	0	0.00
Alternate-Add	Alternate to appease neighbors would be to plant 15 to 20 foot tall Coast Live oak in center of their driveway with 90 inch tree spade.	7,000.00	0	0.00

	Subtotal:	**25,000.00**
	Estimate Total (USD):	**$25,000.00**

County of San Mateo
Planning and Building Department

In-Lieu Park Fee Worksheet

[This formula is excerpted from Section 7055 of the County's Subdivision Regulations]

This worksheet should be completed for any residential subdivision which contains 50 or fewer lots. For subdivisions with more than 50 lots, the County may require either an in-lieu fee or dedication of land.

1. **For the parcel proposed for subdivision, look up the value of the land on the most recent equalized assessment roll. (Remember you are interested in the land only.)**

   Value of Land = $2,167,356

2. **Determine the size of the subject parcel in acres.**

   $$\text{Acres of Land} = \frac{23,641}{43,560} = 0.542 \text{ Acres}$$

3. **Determine the value of the property per acre.**

   a. **Set up a ratio to convert the value of the land given its current size to the value of the land if it were an acre in size.**

Formula:	
$\frac{\text{Parcel Size in Acres (From Item 2)}}{\text{1 Acre of Land}}$	$\frac{\text{Value of Subject Parcel (From Item 1)}}{\text{Value of Land/Acre}}$
Fill Out:	
$\frac{0.542}{\text{1 Acre}}$	$\frac{\$2,167,356}{\text{Value of Land/Acre}}$

   b. **Solve for X by cross multiplying.**

Formula:			
Value of Land	= $\frac{\text{Value of the Subject Parcel (From Item 1)}}{\text{Size of the Subject Parcel in Acres (From Item 2)}}$		
Fill Out:			
Value of Land	= $\frac{\$2,167,356}{0.542}$	=	$3,998,811.81

ATTACHMENT L

4. **Determine the number of persons per subdivision.**

Formula:				
Number of New Lots Created*	X	2.75**	=	Number of Persons Per Subdivision
*Example = A 2-lot split would = 1 newly created lot.				
Fill Out:				
*2	X	2.75	=	5.50
**Average number of persons per dwelling unit according to the most recent federal census (2010).				

5. **Determine the parkland demand due to the subdivision.**

Formula:				
Number of Persons Per Subdivision Demand (From Item 4)	X	.003*** Acres/Person	=	Parkland
Fill Out:				
5.50	X	.003*** Acres/Person=		0.0165
***Section 7055.1 of the County's Subdivision Ordinance establishes the need for .003 acres of parkland property for each person residing in the County.				

6. **Determine the parkland in-lieu fee.**

Formula:				
Parkland Demand (From Item 5)	X	Value of the Land/Acre (From Item 3.b)	=	Parkland In-Lieu Fee
Fill Out:				
0.0165	X	$3,998,811.81	=	$65,980.39